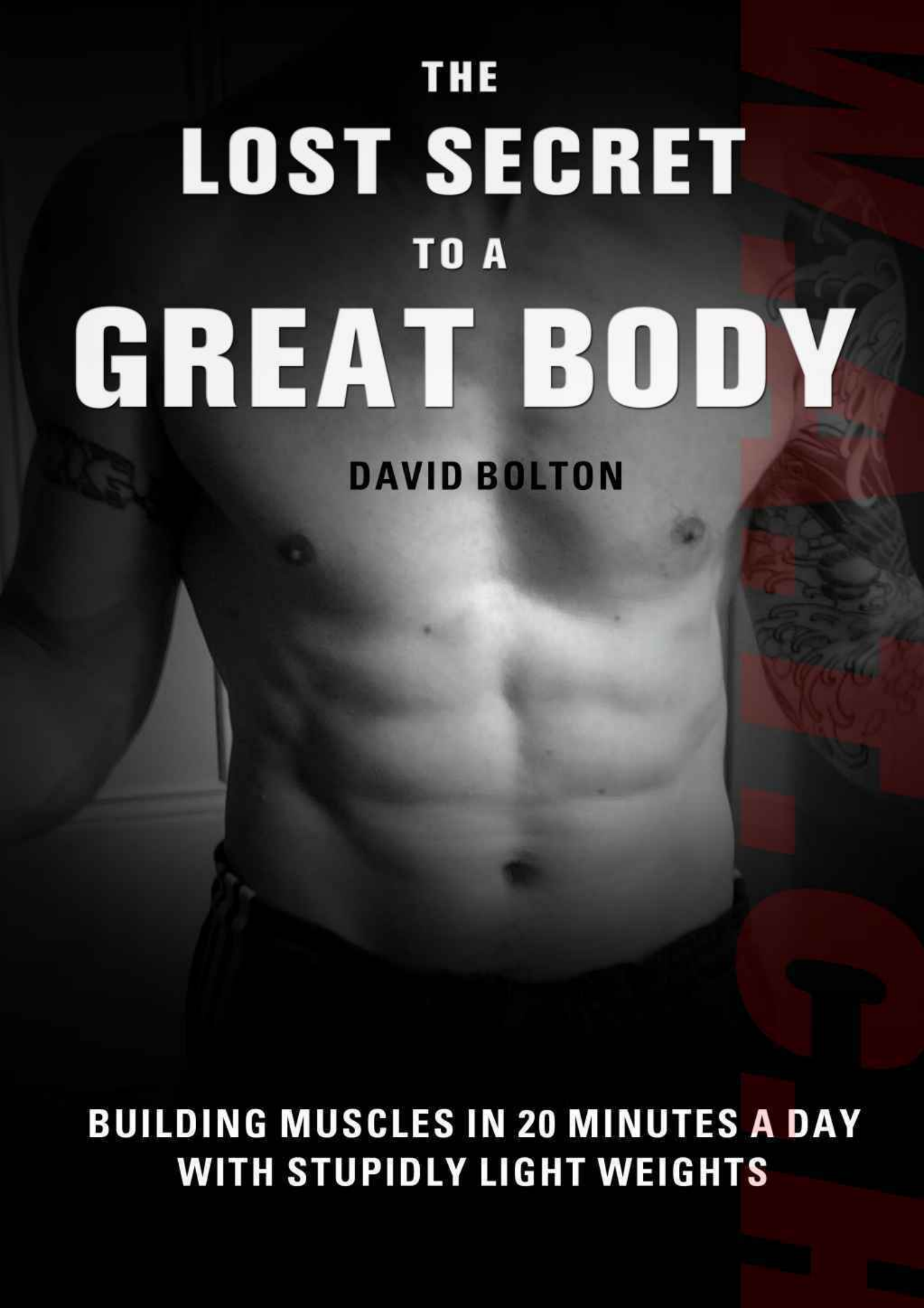
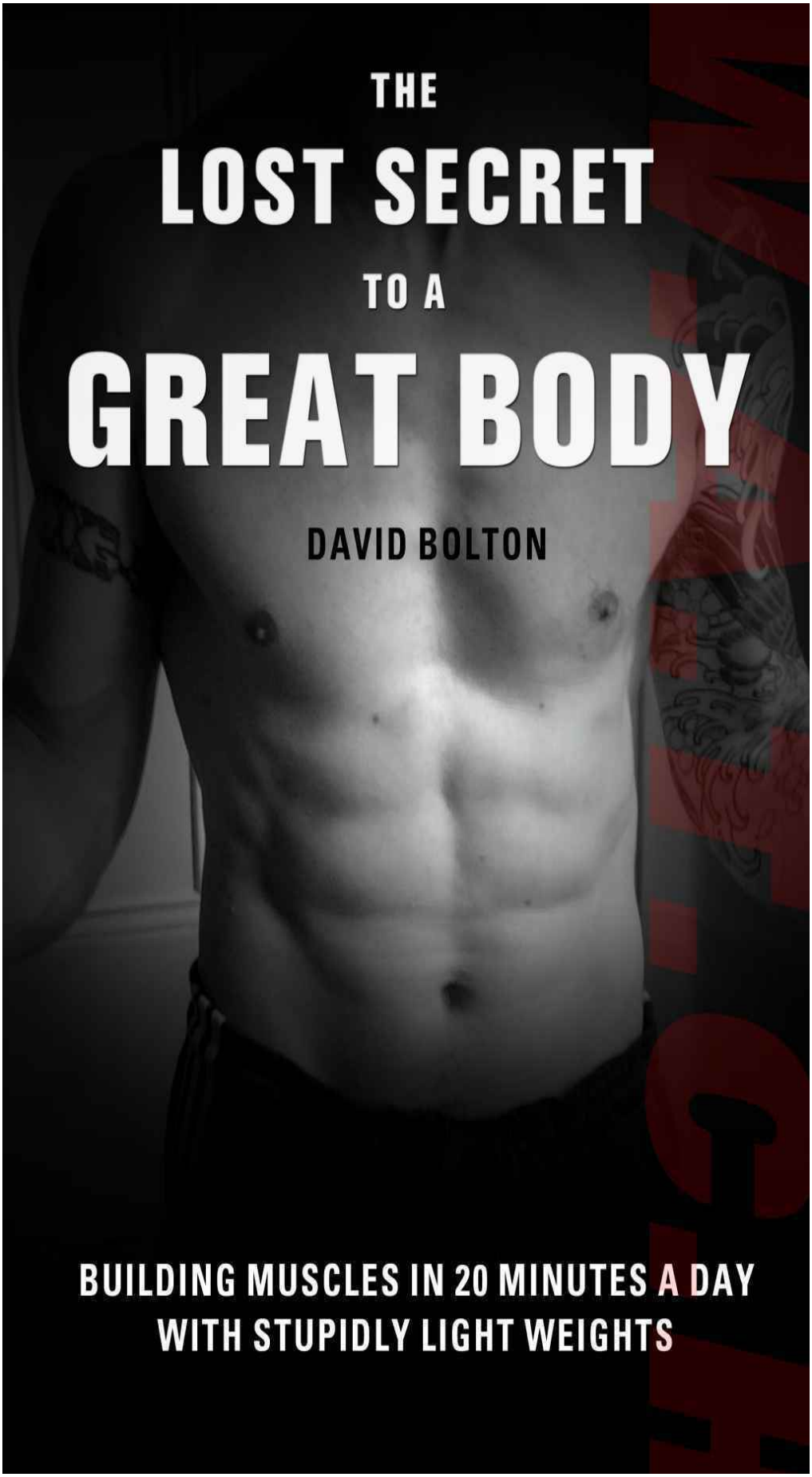


THE LOST SECRET TO A GREAT BODY

DAVID BOLTON

BUILDING MUSCLES IN 20 MINUTES A DAY
WITH STUPIDLY LIGHT WEIGHTS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A Few Words On How To Use This Book

This book provides a simple set of exercises with light dumbbells and a very specific protocol for performing those exercises. There are several introductory sections about the fascinating history of this type of training as well as some speculation at the end about what physiological mechanisms might be at work in making them so surprisingly effective. This section is purely speculative but refers to a couple of fairly recent scientific studies.

If you really couldn't care less about all this and just want to get straight to the bit with the exercises - fair enough - skip the history and get right to it but whatever you do **DON'T JUST SKIP TO THE SECTION WITH THE EXERCISES, LOOK AT THE PICTURES AND THINK "OK I CAN SEE WHAT THIS INVOLVES"** this is the exact mistake most people reading the books of the old Physical Culturists from the beginning of the 20th Century make. They glance at the pictures, "understand" them from the perspective of modern strength training and then promptly reject them as useless.

You absolutely need to understand a particular **WAY OF EXERCISING** first so please at least read the section on "The W.A.T.C.H Protocol" and the Conclusion before following the detailed instructions in the section that features the exercises.

If you successfully grasp the CONCEPT and then learn how to put it into practice properly, these simple exercises will give excellent results.

I ntroduction

We are often told that we live in a period in which the media is constantly bombarding us with images of perfect people with perfect bodies and that this relentless avalanche of photo-shopped and unrealistic physical specimens is warping our ideas about how we should all look.

Women are assailed from all sides by images of models whose limbs have been digitally lengthened and skin tone artificially evened out to the point were a normal attractive woman looks dumpy and slightly dimpled in comparison. Iconic images of Brigitte Bardot and Raquel Welsh look dumpy and dimpled in comparison with these images too but apparently this doesn't make looking at the pictures any less depressing.

Men are increasingly bombarded with similar imagery and are no less troubled by it. Every other Hollywood actor seems to sport a phenomenal physique now, there are magazines devoted to male fitness that feature perfectly sculpted models on their covers and even children's action figures have morphed into pendulous armed bodybuilders.

On the other hand we live in an age of unprecedented information - if we feel pressure to conform to these images of physical perfection, at least we have at hand more advice on exercise routines, training equipment and optimal nutrition than ever before and we can train safely and successfully without any confusion about how to go about it right? Erm…actually no.

Ironically, right in the middle of a period of time when more people than ever before are concerned with the appearance of their bodies and when more of them are joining gyms, engaging personal trainers and spending fortunes on the latest fads in exercise equipment and nutritional supplements, fewer and fewer people seem able to develop bodies they are happy with.

In fact, many people who say they "work out" or are gym members will cheerfully tell you that it's impossible to

develop the sort of body they see adorning the cover of Men's Health, walking out of the sea in the latest Bond film or draped in expensive underwear selling even more expensive fragrances.

"You need to spend all day every day training and eating a macrobiotic diet to look like that" they'll say or "you need the personal trainer" or "it would take tons of weight and a bucket load of steroids" and lets not forget the digital airbrushing. So they slog away at exercise regimes they feel obliged to take up for the good of their health yet hold out no hope of anything other than maybe a slight improvement in the way they actually look.

This is hardly surprising as these people have usually faithfully followed all the accepted advice in the magazines and on the net about how much weight to lift for how many sets or how far to run on the treadmill, what powders and pills to take, what to eat or not eat etc but they haven't seen the promised results. It's only logical for such people to assume that the fault lies with them - that only the genetically gifted or artificially enhanced can have a good body.

Then there are the thousands and thousands of others who would quite like a good body but who have read all the same training advice and decided it's really not for them thanks very much. Isn't this the sensible reaction to reading about such things as split routines and carbo-loading, shocking the muscles with constantly changing exercises or training to vomit inducing muscular failure etc? - to think "you know what, it all sounds awfully complicated and a bit too much like unpleasant hard work"?

Back at the turn of the last century, in a far simpler age, anyone wishing to address their health and fitness and develop a good physique had far less information at hand to either help or hinder them. All the advice that did exist came from the commercially available books and courses sold by the popular music hall strong men and emergent "Physical Culturists" of the day.

In the late 1800's and early part of the twentieth Century there was a huge fad in what was called "Physical Culture" with many men rising to prominence as stage performers who would enact feats of strength and then display their muscular bodies to an adoring audience. Many of these early experts in exercise science wrote books about their training methods or sold mail order courses to the general public that promised to give away the secrets of developing a beautiful physique.

Much of this written material still exists and is available for free on the Internet at sites like www.sandowplus.co.uk . - A fantastic resource where the owners have provided complete digital scans of numerous works in what can only be an intensive labour of love. A quick perusal of this material (which is all most contemporary readers interested in exercise will give it as it seems so antiquated and useless from a modern perspective) will reveal that many of these men were recommending brief bouts of exercise with what are, by modern standards, stupidly light weights.

A more detailed study will reveal that each of those men was advocating essentially the *same routine* done in the same fashion with more or less the same instructions as to weight, frequency and the particular performance of each exercise. A deeper investigation into the backgrounds of these men will reveal that many of them had a link to a single teacher who had advocated the exact same protocol years before them.

Of course most modern authorities will tell us that the reason for this is very simple - the men concerned were all merely making a quick buck by shamelessly lying to their public. It is said that each and every one of them built their impressive muscles with the same protocols we know today to be the only sensible way to train - progressive resistance with heavy weights - and then they sold this useless although more palatable light dumbbell nonsense to the masses.

The light dumbbell protocol that crops up in many of these early books is so at odds with what contemporary sports science tells us about the business of building

muscles that all the experts confidently assert this can be the only possible explanation. They also tell us that at this time little was known about how exercise affected the human body and that these men may have simply not known how ineffective their advice really was.

Consequently, the experts celebrate these men as the fathers of physical culture and bodybuilding on the one hand and casually insult them as disingenuous charlatans and ignorant con men on the other.

It seemed to me when I read all these old texts that far from being ill conceived and based on an ignorance of the actual workings of the human body, that many of them in fact included detailed studies of human anatomy and physiology that far outstrip most similar modern works. It was just that the exercise protocol being recommended seemed to be based on a radically different paradigm than the one we currently hold to be true.

Everybody was rejecting this training approach on principle but nobody was actually looking into whether or not it might actually work - all *that* would take would be to try it out for a few weeks or months and see what happened. I was recovering from an elbow injury at the time and was looking to get back into exercise gently so I thought I'd give it a go.

I didn't have anything to lose and anyway, wouldn't it be great if it *were* true? If you could just do a basic stripped down set of exercises with very minimal equipment - a set of little dumbbells - for around twenty minutes a day in your own home and develop a perfectly respectable toned muscular body?

I found that the exercise protocol advocated in all these books and courses did, as they say, exactly what it said on the tin. The results were exactly as advertised and compared to the amount of time and effort invested, the approach is phenomenally effective and efficient.

It seems to me a crying shame that at a time when more and more people are concerned with developing a body they can be proud of (or at least one they don't have to be

embarrassed about when they go to the beach) a simple approach that would give them exactly what they want lies forgotten and abandoned and instead they are directed towards much more complicated and more physically demanding routines designed for serious bodybuilders that often either don't deliver or put off prospective exercisers altogether.

This book offers an overview of the system of light dumbbell exercises that were popular at the turn of the last century, looks into it's fascinating history, seeks to explain how it is that it works contrary to all currently accepted training advice *and* presents the exercises in an easy to follow format.

As well as providing a method to sculpt the body you always wanted in a simple straightforward manner, I hope this book demonstrates that rather than cynically selling snake oil, the physical culturists of the past were genuinely passing on the secrets of developing a strong and beautiful body just as they said they were doing.

If you follow the exercises as described **and master the correct way of performing them** you *will* experience concrete results. Modern "experts" will tell you this is impossible - ignore them and remember the Chinese proverb:

"Those who say a thing is impossible should not interrupt someone who is busy doing it"

Contents

C ontemporary Thinking on Muscle Building

This is a book about a forgotten and outmoded method of dumbbell exercise that was so common as to be ubiquitous at one time. In fact in many texts from the turn of the last Century, from the boxing instructionals of men like Jem Mace to wrestling instructionals such as the one by "Farmer" Burns to encyclopaedias of health and folk medicine, when the term "Dumbbells" was used it actually referred specifically to this TYPE of exercising rather than to the actual piece of equipment involved.

What makes this approach so notable is the way it differs from what we usually consider good training advice in the 21st Century. Such advice is based on several assumptions about building strength and developing muscle mass that are universally accepted today.

Before we can discuss these old fashioned exercises and exactly how they differ from the modern approaches, first we have to provide a brief overview of that contemporary understanding.

This is NOT intended to be an exhaustive or scientifically detailed study of the current orthodoxy concerning training for increased muscle mass - it's not necessary to force you to trawl through a chapter on myofibrillar versus sarcoplasmic hypertrophy and muscle protein synthesis just to learn some simple dumbbell movements.

It will be perfectly sufficient for our purposes to cover the main points of what is believed to be true about the best way to make your muscles bigger in purely layman's terms. This way it will be starkly obvious as we delve into the various exercise prescriptions and routines offered by the 19th and early 20th Century physical Culturists why their exercises are totally at odds with today's thinking.

Very basically, today we believe that, if somebody exercises with sufficient intensity, a degree of micro trauma occurs within the structure of the working

muscles. With rest and optimal nutrition the body repairs this damage and in doing so the muscles grow back slightly bigger (because of an increase in size in the muscle cells due to a combination of an increase in individual fibre size and an increase in fluid within the cell).

The best way to capitalise on this natural adaptation of the body to work done against resistance is generally accepted to be to be the following:

Train with weights heavy enough for you to manage 8-10 repetitions or so in a set if you are training purely for muscle size and appearance sake, and 3-5 repetitions if you are training to specifically enhance strength. You would then rest to allow a full recovery and then repeat - gradually increasing the weight used as your strength increases so as to keep pace with development and continually challenge your muscles.

Over time this protocol is thought to offer the best opportunity for maximal gains in both strength and muscle size depending on the number of sets and repetitions used. This is known as progressive resistance training - as the resistance used is progressively increased during the weeks and months one follows the programme.

Most people recommend starting with a basic routine in which you train the whole body three days per week, Monday, Wednesday and Friday with rest days in between. You can also train various body parts on one day - say chest and arms and then train another body area like legs and back on the next day while the first one rests. This is a basic split routine.

Extrapolating from these basics, trainers offer all sorts of advice concerning the best number of sets per exercise and per body part, ways to concentrate one's efforts with various different exercises and different training protocols using specialist pieces of equipment but essentially that's it in a nutshell.

This model is considered to be the only logical and sensible way to train if you want to make any significant

progress in terms of strength and muscle size. For example if people wonder about the efficacy of training with their own body weight - using push ups, pull ups or other similar callisthenics - they will be told that such exercises are useful only initially to train an absolute beginner who has no physical adaptation to exercise.

This is because by this rationale, once the trainee has developed enough strength to move his body through a certain number of reps he will have developed all the muscle mass his body needs for that task and simply increasing the number of repetitions ad infinitum will eventually become a game of diminishing returns.

It is now a commonly held belief (one that you can see demonstrated regularly in hundreds of online forums relating to exercise and fitness training) that in fact bodyweight exercise cannot even build *any* significant strength or develop *any* muscle to speak of and can only really train “muscle endurance”.

This all makes perfect sense, is admirably logical and seems to be backed up by solid incontrovertible science. When we realise that the dumbbell training protocol that the old-time strongmen all sold in their books and mail order courses goes against ALL of this it’s easy to see why people interested in the history of fitness training and bodybuilding have routinely dismissed it out of hand as being patently useless.

You can read numerous biographies of these early strength pioneers online and in pretty much all of them when it gets to the bit about them selling mail order training programmes or light dumbbells the author will say something like “of course, these methods were strictly a marketing ploy and bore little relationship to how he built his own impressive physique - obviously with progressive resistance training using heavy weights”.

The reader might reasonably assume from the way that this is confidently stated that it’s an established fact yet a detailed study of the books written by these early strongmen seems to suggest otherwise.

It's not just that these modern authors say this without any evidence other than their own opinion, based on how these men looked in photographs and their own preconceived ideas about what it takes to develop such bodies. The real problem is they say these things in direct contradiction of what the men themselves wrote about their own training, often in great detail .

Many of these men specifically speak of the importance of the LIGHT DUMBBELL TRAINING in developing their physique *and* strength and go into great detail about why this is the case. It's almost as if the aforementioned modern authors haven't actually read the writings of the men they are eulogising and instead have just looked at the pictures and drawn their own conclusions.

The fact remains however that this ubiquitous light dumbbell protocol recommends training six or seven days a week using weights as light as three, four or five pounds, never increasing the weight or the number of sets and only supplementing the routine with a few simple bodyweight callisthenics. This goes against everything stated earlier about the best and indeed "only" way to train to develop strength and muscularity.

If the physical culturists of old really were serious about the efficacy of this odd method of training and if it simply *cannot* work by means of the "cause micro trauma to muscle, rest and repair, rinse & repeat" model discussed earlier, perhaps these men knew something we don't?

If contemporary thinking on building muscle is all there is to it then antiquated advice to the extreme contrary should certainly be rejected. If the men who offered that advice were impressively muscled and strong then it does indeed make sense to assume that they said one thing publicly and did another privately but shouldn't we at least consider the possibility that contemporary thinking on building muscle ISN'T all there is to it?

If there is some other unsuspected dynamic involved in this way of training then maybe these men left us a valuable tool for laying the foundations of an impressive

physique but we have just thrown it away because it no longer fits in with what we believe to be true?

S andow and Others

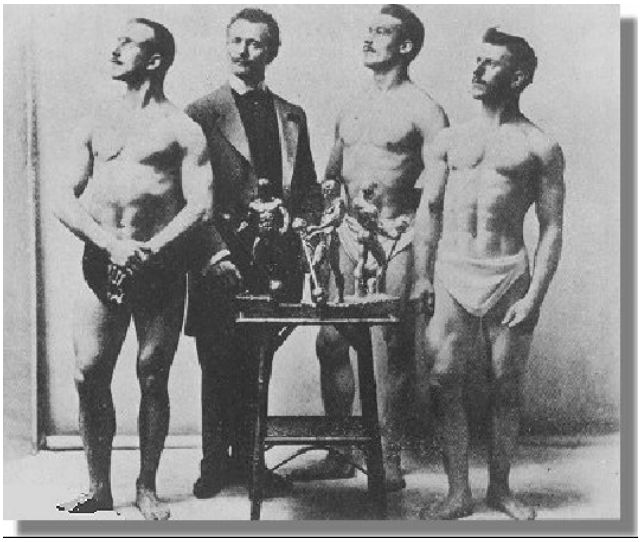
Any discussion of the stage strong men and Physical Culturists from the turn of the last Century has to begin with the famous Prussian Eugen Sandow. This is not, contrary to what is often stated, because he was the first of this breed. It isn't even true that he was the strongest, despite what he might have claimed. Many people felt, however, that he was the best developed by a long way and it is certainly true that he changed the image of the stage strong man forever. Indeed he went on to have a huge and global impact on the popular perception of what it was to be strong and well built.

Sandow was simply the most famous of all the Physical Culturists of his day - at one time being a household name throughout Europe and America and even touring the Antipodes and the Far East. He was so famous you could buy cocoa and cigars with his name and image on them and he was the first in a long line to capitalise on this notoriety by selling books and mail order courses in how to get strong and develop one's body. He was also the first to develop and then sell training equipment for that purpose - making a small fortune marketing dumbbells and chest expander type contraptions.

He went on to open several gymnasiums where people could purchase exclusive membership and learn his "system" of exercise, becoming essentially the first franchised celebrity personal trainer - his dumbbells were made by appointment to the King of England and the British Army adopted his training methodology with some fanfare.

Sandow took the whole world by storm - there was in the latter years of the 19th and early years of the 20th Century a sort of "Sandowmania" that saw thousands flock to his stage shows to watch him lift incredible weights aloft and do back somersaults while holding two fifty six pound block weights. Backstage afterwards the Ladies would queue up to feel his rippling muscles and Gentlemen all over the world followed his dumbbell routine and attempted to replicate his "classic" physique.

Legions of copyist strongmen followed in his footsteps and Sandow later sanctioned the first ever Physique competition the world had ever seen - essentially inventing competitive bodybuilding as well. The competition at the Royal Albert Hall in 1901 was judged by Sir Arthur Conan Doyle, the Author of Sherlock Holmes and offered a cash prize and a series of “gold plated” statues of Sandow himself as trophies. To honour his unique contribution to bodybuilding - by basically creating the very possibility for it to exist - the modern IFBB still awards it’s Mr Olympia winner with “A Sandow” - a replica of those original 1901 trophies.

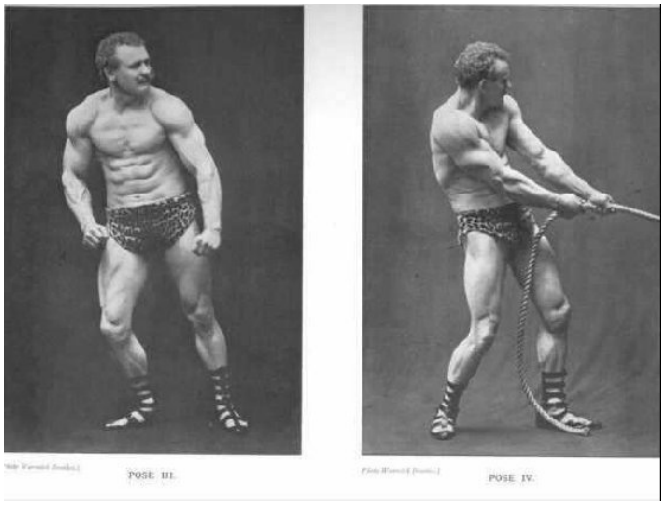


Sandow second from left and some of the winners - note the type of physique men were striving for compared to today’s aesthetic.

So who was this man and what was so special about him? As stated earlier it’s often asserted that Sandow was either the first ever bodybuilder, inventing the stage act of displaying one’s muscles while performing strength feats all on his own, or he was the strongest man who ever lived. Neither of these is remotely true.

He wasn’t even really called Eugen Sandow and he wasn’t Prussian. He was actually Frederich Muller a German draft dodger with flat feet who at various times had been an acrobat, a wrestler, an artists model and a beachfront Gigolo. After making something of a name for himself as a strongman in Holland he turned up in

London in 1889 and found himself in exactly the right place at the right time.



Sandow's classic physique

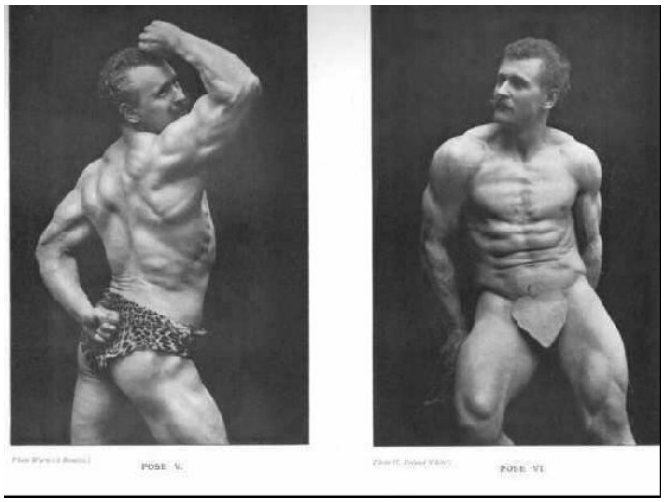
The music Hall strongman act which had been popular the word over for years, growing out of an earlier circus strongman tradition, was enjoying a huge vogue on the London stage with various champions of impressive brawn playing to packed houses were they would tear packs of playing cards in two, bend coins and snap chains across their chests. It was customary for such men to offer a public challenge of some sort in which anyone from the audience would be encouraged to try to lift their special weight or match them in some other feat for a cash prize.

Sandow famously answered one such challenge and set himself squarely on the road to fame and riches. The official and often recounted story is that he easily defeated the two most prominent London performers "Samson" and his protégé "Cyclops" and inherited their top billing act on the spot, catapulting himself into pole position as London's headline stage act - a situation he clung onto for years and cleverly parlayed into worldwide fame.

The actual truth behind this story is more complicated and will be touched on later in the next Chapter - for now it's enough to say that it wasn't exactly a fair contest.

Not that Sandow wasn't strong - he was. Some of his confirmed weightlifting feats are still impressive today

and by any normal definition he was a very strong man - just not anywhere near being the strongest man in the world, the strongest man in London or on the night of his famous victory even the strongest man in the room. Sandow had something else going for him - his physique. No one had seen anything like him before.



Sandow at his peak

Strongman acts were a popular staple at this time and were enjoying a particular vogue in London. They had been around on stage and in circuses for years and were a standard act along with magicians, acrobats, comedians and every other vaudevillian profession. These strongmen usually strode onto the stage dressed in a leopard skin vest and tights and lifted massive weights to gasps from the astounded audience. We're talking those huge Monty Python ring weights with the legend "ONE TON" painted on the side. They'd support platforms with whole crowds standing on top, allow cars to drive over their stomachs and maybe even lift up an elephant with a strap round their waist for an encore.

The important thing about these guys was how strong they were and not what they looked like. What they looked like was not pretty - usually they were large lumpy men with vast waistlines and tree trunk legs. Think of the average competitor in today's World's strongest Man competition then add a handlebar moustache and a pair of pink tights. It was actually Sandow's relatively unusual appearance rather than what he could do that set him apart from his rivals.

When he stepped onto the stage to challenge “Samson” he was wearing a specially constructed evening suit and looked like a perfectly normal patron of the theatre - nobody looking at him fully dressed would have suspected he was a strongman and that was the idea. When he tore away the suit in one go, like a modern day strippergramme ripping off his Velcro trousers, the crowd let out a collective gasp - he looked like a Greek statue carved out of granite.

Later Sandow built a posing routine into his act and when he went to America and signed with the famous Florenz Zeigfield they dispensed with many of the displays of strength and concentrated instead on him displaying his muscles in a specially constructed light box - a cabinet in which he was shown in contrast against a black curtain by a strong overhead light that picked out the shadows and enhanced his impressive muscle definition.

He would display incredible muscle control, tensing and relaxing every part of his perfectly developed physique in what is now almost a self-parody of a muscle man flexing his biceps but at the time was an absolute revelation. This is what Sandow really pioneered - the image of the body beautiful as something to aspire to. And aspire to it people did - every man wanted to look like Sandow and every woman dearly wanted her man to succeed in this endeavour.

Never one to miss an opportunity to capitalise on a situation, Sandow published his first book - “Sandow’s System of Physical Training” in 1894 and anyone can find this reproduced on the internet today and read it in it’s entirety for free. As we will hear in the next chapter Sandow was accused of having much of it ghost written for him as his English was poor and his accuser found the idea of him providing learned discourse on atomic theory, anatomy and physiology and the finer points of classical sculpture completely laughable which should tell us something about the actual man as opposed to the myth he carefully constructed around himself.

He certainly had help with the book but if you read it carefully it's obviously not even presented as being all his own work - one chapter is even entitled "Mr Sandow Speaks for himself" in which he is interviewed about his thoughts on training, exercising (which are interestingly referred to as separate topics), diet and bathing. The rest of the book is mostly dedicated to lots of flattering biography recounting his early years, his strongman and wrestling feats and his various other apparent achievements. It's basically a nineteenth century PR exercise and is about as accurate in terms of the facts of Sandow's life as are official press releases or Hello Magazine articles about celebrities today.

The interesting bits for us are a chapter in which Sandow is exhaustively measured and medically assessed by an eminent physician of the day, the chapters in which he discusses his ideas on "exercising and training" and the section at the end which presents three separate instructionals using photographs of Sandow demonstrating all the movements of "his system". At this point in time he was probably at his physical peak and these shots - and the others liberally illustrating the rest of the text - are the best ever taken of him. For some reason all the more popular photos usually depict him years later when although still in impressive shape and probably bigger all-round, he was no longer quite the living Greek statue he was here.

Sandow makes many grandiose claims in this book not least that he studied medicine in Brussels, gaining a thorough knowledge of anatomy and physiology and then invented this system of exercises all on his own. As we'll see later the truth about where they came from would have been less self aggrandizing but just because he was an arrogant man and a rabid self publicist doesn't mean he didn't know what he was talking about when it came to building muscles - you only had to look at him to realise he wasn't kidding about that.

Sandow says that his own personal training at this time consisted entirely of one session of light exercises in the morning with his dumbbells and then going through his

nightly performance, which was “quite taxing” but which only lasted 20 minutes. In his own words his physique was the result of “light dumbbell exercise supplemented by weightlifting”.

This quote is very important - not weightlifting supplemented by light dumbbell “shaping” exercises but very specifically Light Dumbbells first and foremost backed up by some heavyweight *lifting* as opposed to training. He did not *train* with multiple sets and reps with heavy weights at all, at any time - he did single lifts of various weights and heavy objects in his act for about twenty minutes at night.

The other bit of this quote that is important but that can easily be missed is that he makes **a clear distinction between light dumbbell exercise and weightlifting** . This is central to the entire point I’m trying to make - in Sandow’s time the two were completely different things. This is not true in the minds of people today - there is simply weight training and so exercising with tiny dumbbells would just be weight training with ineffectual weights. In Sandow’s mind they were entirely different modalities - when he exercised with the light dumbbells he was not, as far as he was concerned, lifting weights, albeit small ones - neither was he “training with small weights”.

To him “training” was something that one did to perfect the performance of weight lifting such as practicing one’s form in the bent press or working up to lifting more in the roman column feat, the press from the floor or mastering the technique of levering a barbell overhead from having it standing on one end.

So if when he picked up his light dumbbells every morning he wasn’t “weight lifting” with them and he wasn’t “training” with them, what the hell *was* he doing? This is where his book comes into it’s own - the rest being just filler and self-aggrandizement to further his already growing fame. The bit at the end with the exercises goes into a wealth of detail about how to perform the dumbbell exercises and reading carefully between the lines we can discover a great deal.

First of all he stipulates dumbbells of 2-3 pounds for women and youths and or 3-5 pounds for adult males. Now anyone who has so much as looked at a weight will realise that if you are going to just lift them up and down, going through all the usual curls, raises and presses and rely entirely on their weight to provide resistance for your muscles, that the difference between a 3 pound weight and a 4 or 5 pound weight in terms of difficulty or end results would be negligible. It certainly seems odd to be so specific.

Next he advises the trainee to take some preliminary "free exercises" with the dumbbells to get a feel for their weight and to warm up. When he describes the type of "free movements" that he expects you to do before "entering upon the exercises proper", you realise he's talking about doing squats while holding the dumbbells loosely in the hands, lifting the arms up to the sides while holding the bells, turning the arms in circles while holding them etc...nobody seems to have read this and thought - "hang on a minute this is what I thought we were going to be doing with the dumbbells anyway - if these are just the warm up what are **the exercises proper** ?"

And there you go - even Sandow didn't think that just "lifting" these things or indeed "training" with them - going through various sets of movements pushing against a resistance of all of 3 or 5 pounds - would do anything except warm you up. To perform what he called his "**Series of Light Dumbbell Exercises** " he had something different in mind - *mind* being the operative word:

> "**The mind should be put into the work, that the muscles may feel the strain and receive the full benefit of the toning and building up process ...THIS IS A POINT THAT CANNOT BE TOO MUCH IMPRESSED UPON THE PUPIL IN TRAINING - IT IS THE BASAL FACT ON WHICH ALL SUCCESSFUL PHYSICAL INSTRUCTION RESTS... there must be a**

concentration of the will power upon the exercises in hand, the dumbbells must be held and used NOT PASSIVELY BUT AS A POTENTIALITY TO BE STRENUOUSLY AND ACTIVELY EXERTED… that the muscles be alternately contracted and relaxed in the process nature has designed for their healthy growth and development ”

“**All movements should be made evenly and without jerkiness but with MUSCLES TENSE AND THE MIND SET UPON THE EXERCISE repeat the alternate movements until the muscles ache…** ”

In modern parlance he might have put it like this - in every movement grip the dumbbell tightly and try and achieve a rhythmic self-directed full contraction in whichever muscle is the prime mover. Keep this going at an even cadence until the muscle is so thoroughly “pumped” that it almost cramps - until you get that feeling of slight “ache” when you hit momentary muscular failure. This way the last few reps will actually be quite difficult despite the lack of weight. When you stop, relax the muscles you’ve just been working completely and feel them flood with the blood that has just been occluded by the prolonged and intense contracted pump you have deliberately generated.

He’s talking about alternating self generated total contraction and total relaxation using the dumbbells as tools to assist you in engaging the various muscle groups effectively and in getting a sufficient response from them.

There follows a systematic series of dumbbell movements that cover all the muscles in the body with detailed descriptions of how to perform each one, concentrating on such things as exactly how to stand, the correct angles of pull and the best leverage positions to use, pointers on how to supinate an arm for the best contraction or how to position a shoulder to best facilitate hitting a certain part of a deltoid. The

instructions are really very precise once you realise exactly what it is he wants you to do.

Each exercise is illustrated with a picture of Sandow himself performing it, wearing - and I kid you not - only a fig leaf. It may be these pictures that have been the problem for people merely glancing through the book. Sandow is phenomenally well built and yet is holding tiny five pound dumbbells to go through what mostly looks like exactly the kind of basic routine you would get on a free chart with any bog standard set of vinyl dumbbells you might buy from Argos (think K-mart if you're reading this in America).

There are the arm curls, shoulder presses, front raises, some antiquated punching movements, squats, straight leg sit-ups and push-ups. Big deal - nothing special there you might think. And in terms of the movements themselves you'd be right but the devil, as always, is in the details - if you "get" that you are supposed to be squeezing the hell out of the dumbbells and contracting each muscle group rhythmically to a specific cadence and as hard as humanly possible with each rep, *then* you follow very precisely all the tips about how to hold the arms, the angle of the back of the hands and what to do with the head etc - you will find that the results of following this routine very much belie its appearance.

A section on heavy weight exercises and then one on barbell exercises follow the section on the Light Dumbbells. This has lead many commentators to suppose Sandow intended the light dumbbell bit to be purely for absolute beginners to spend a few weeks on, bringing their bodies up to par before starting the "actual" work with the heavy weights - just as one might expect today.

The thing is, he specifically says that these later sections are only for people who want to "go on to be athletes" and that even men wanting to make a profession of weightlifting and those who are already strong enough to handle weights much heavier than five pounds, are still "**recommended to take the simple exercises with**

the lighter weights first until they see a visible improvement in their muscles ”

In other words pre existing strength and a talent for weight lifting in no way precluded the possibility of seeing a visible improvement in one’s muscles when exercising with stupidly light dumbbells in Sandow’s mind - in fact he strongly recommended it, further stating that for those not inclined to become serious athletes the light dumbbell routine was all they would ever require.

Also the sections on heavier weights are not about the sort of weight training we would expect to be recommended today to build up a decent physique - multiple sets with gradually increasing weights - Sandow was talking about single lifts in exercises such as the bent press, dumbbell snatch and single arm swing overhead - the sort of exercises you would see done today with kettlebells. He talks about correct form and alignment and the “knack” involved in getting the weights up and not about reps, sets or progression.

The barbell section is all about SINGLE HANDED LIFTS or classic two-hand overhead presses with a barbell - not lying on a bench and pumping out reps for multiple sets. He recommends singles or reps in the 3-6 ranges - the same as we would recommend today to build raw strength rather than pure muscle hypertrophy.

So as we can see, reading this text as if it is recommending some preliminary light dumbbell work for weedy youths and absolute beginners before moving on to the “real stuff” and shifting heavy weights about to build big muscles is a mistake but one that’s been made over and over and one that can be easily understood when you realise the people making it are simply trying to make the text fit with what they already “know”.

In 1897 Sandow released a second book entitled “Strength & how to obtain it” - which is, you have to admit, a great title. The second half of this is pretty much a rehash of the first book’s wildly inaccurate autobiography section and is concerned with bigging up Mr Sandow even more than last time - in fact it seems his

claimed measurements have increased significantly since the eminent doctor in the last book measured him.

There is some additional info about his latest tour of America and a report of him actually wrestling a lion in front of an audience. (No really - he wrestled a Lion. He really honest to God wrestled a lion, although reports of the period describe it as a pretty moth eaten looking specimen and it may well have been drugged)

The new book has several interesting additions in the first half though. It is written from the perspective of someone who is now - three years later - even more famous and celebrated than before and whose ideas as he says himself can definitely be said to have "caught on" but who has obviously had to face the inevitable criticism and misrepresentation that comes with any fame or celebrity.

He spends a good portion of the start of the book refuting criticisms levelled against him by other teachers of physical Culture. Then he seeks to put straight a few common misconceptions about his system - even at the time it seems people were missing the point about exactly how to practice the exercises and he had to be even more specific in his instructions. This is great for our purposes as it makes things even clearer:

> "**The first essential to success is the power of concentrating the will upon the work. Muscles are not developed by muscular action alone ...mechanical and desultory exertion will never materially increase a man's strength. He must first learn the great secret, which should be no secret at all. He must use his mind . He may not be able to add one cubit to his stature but by doing this he can most assuredly increase the size of his muscles, strengthen all his organs and add to his general vitality. But he must put his mind as well as his muscles into the work . By exercise and practice the will power is greatly increased until in**

course of time the whole organism is so completely under its control that the muscles can be kept in perfect condition even without what is ordinarily called exercise
That is to say that without violent exertion but merely the exertion of the will, the muscles can be exercised almost to any extent ”

And:

“**As I have said before it is the brain that develops the muscles. Brain will do as much as dumbbells - even more . For example when you are sitting down reading, practice contracting your muscles…by contracting them harder and harder each time you will find it has the same effect as exercising with the dumbbells…it is very advisable for all pupils to get into the habit of practising this muscle contraction - it is in itself an admirable exercise but it is perhaps even more valuable owing to the fact it improves the will power and helps to establish that connection between the brain and the muscles which is the basis of strength and condition** ”.

So once again, it’s all about self-directed muscle contraction - the dumbbells are just there to help you achieve this and to enhance it. Sandow was obviously having difficulty in getting some users of his system to understand this or to do it correctly however - he mentions in several places in the early chapters of the book that it is common to see in classes at his gyms pupils going through the movements without putting in the requisite “vim and vigour”.

“**For the beginner the most difficult part of my system is so fully to concentrate his mind on his muscles as to get them absolutely under control . It will be found**

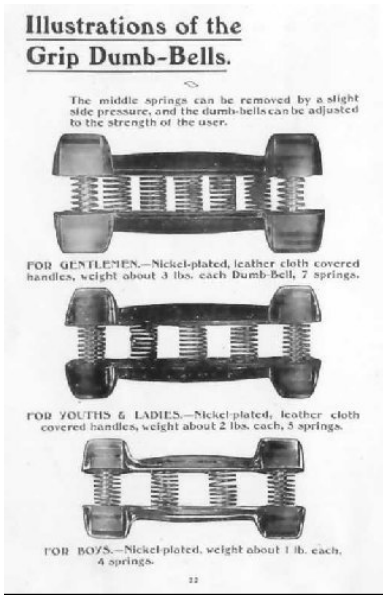
however that this control comes by degrees. With regard to the will power that is exerted it should be remembered that the effect of weight lifting is to contract the muscles but the same effect is produced if the muscles are contracted without the weight (but aided by use of light dumbbells) .

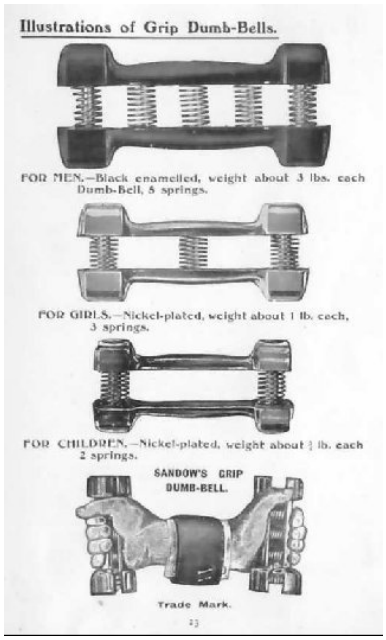
This problem of willpower has, I am aware, troubled a good many of my pupils. The majority find it difficult to "put all they know" into movements with small dumbbells and consequently are apt to be disappointed with the results of their work...the reason is obvious - they are merely "going through the motions" and not really working at them ".

Sandow states that he also from time to time would come across a pupil who could do this a bit too well and who would thus overdo it to the point of becoming "done in" (probably going blue in the face, busting a blood vessel, or inducing a terrible case of carpal tunnel syndrome). He needed to find a way of helping his pupils get the idea of just the right amount of tension to use when manoeuvring the dumbbells about during his exercises and so was born his greatest invention (at least as far as his bank balance was concerned).

Sandow came up with his famous "Spring Grip Dumbbell". This was basically a cast iron three-pound dumbbell that had been cut in half and rejoined with a series of springs in the middle so that the exerciser could squeeze the two halves together as he used them. This meant it was impossible to go through the motions in a desultory way. If you squeezed the dumbbell shut and then did the movements with the arm held in exactly the way prescribed - voila - you would get a strong contraction deep in the target muscle. At the very least you couldn't fail to catch the right feeling in your muscles as you pumped out the reps.

Basically this invention was a remedial device for people too physically inept to be able to control and contract the proper muscles with just ordinary dumbbells - and Sandow says as much in this book. He makes it very, very clear that this is the purpose of the spring grip dumbbell yet you will constantly read reports to the contrary when you read about Sandow.





Those same writers who report that he didn't really train with light dumbbells himself also refer to his invention as either a novelty item designed purely to make money from a gullible public or a powerful "gripper" type exerciser which doubled as a light (and therefore pretty

useless) weight. These people have clearly never read his books properly and have obviously never even picked up one of his spring grip dumbbells let alone exercised with one.

Millions of these things were sold all over the world between the 1890's and the 1930's. You can still pick them up occasionally on ebay or at antiques fairs and I own two different pairs - one nickel plated with leather handles and seven springs - the "gentleman's version" - and one black enamelled set with five springs -the "man's version", both over one hundred years old. Remember this was England on the cusp of the Victorian and Edwardian eras so we're basically talking about an expensive upper class version and a cheaper working class version.

When you pick these up and squeeze the two bits together it's obvious that they were never intended to be gripper exercisers as such - clearly there is some benefit to be had in increasing the grip strength over time but they really are not particularly difficult to close. They are easier to close than one of those cheap plastic grip exercisers you see everywhere for example and that's with all the springs in - the instructions advise beginning with only the basic two springs and gradually adding the others as your strength increases. It's very clear that the purpose of the device is to enhance your ability to feel the muscles working and to help you to strongly contract them while doing the exercises.

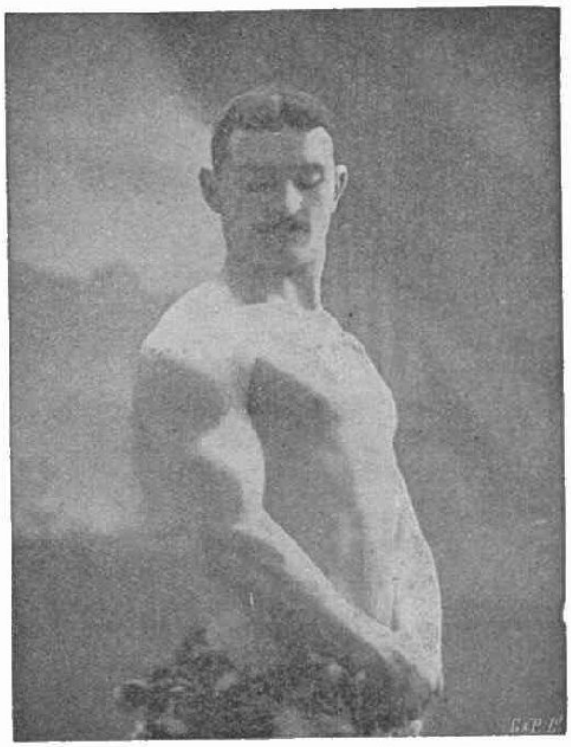
They came complete with a handy booklet detailing all the exercises - this is exactly the same routine as in his first and second books only now it is not Sandow demonstrating in the photos but one of his pupils and instead of the fig leaf he's gone for a rather fetching pair of tights and Roman sandals combo.

One thing Sandow was criticised for was the price of these dumbbells - they sold for 12 schillings and six pence and seven schillings and sixpence respectively, a considerable sum in those days - but he argued that they were well constructed and would last you a lifetime. Both the pairs I have are over one hundred years old and are

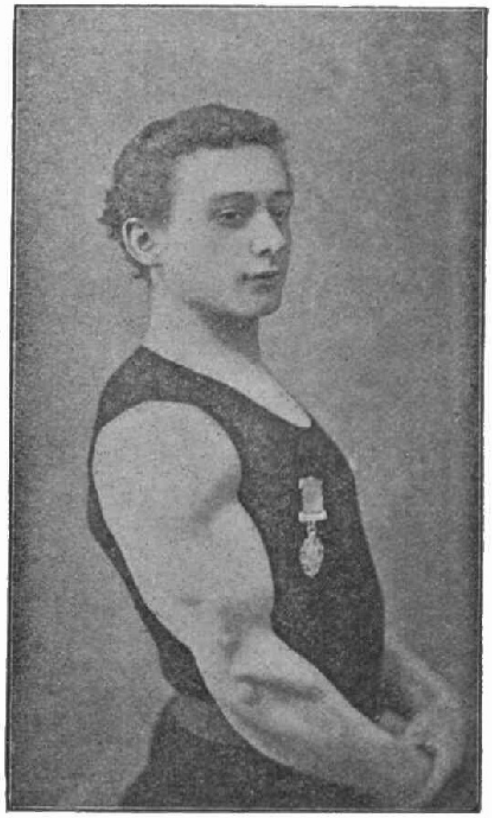
in great condition and still work perfectly so that claim at least was factual.

He also used the book to introduce another exercise contraption - a rubber “developer” which was a chest expander type of a deal but which also worked as one of those pulley things attached to a door that you see boxers working out with in old photos. The interesting thing is that the handles were Sandow dumbbells - so the rubber cables were just ways to further increase and concentrate resistance and the same principle of self directed maximal muscular contraction was to be employed.

The best bit about the second book is that at the end there is a section with testimonials from satisfied customers which includes numerous photos of satisfied pupils of Sandow’s system - many of them look fairly impressive even by today’s standards:



JOHN P. PETERS. (After Training.)



THOS. A FOX.

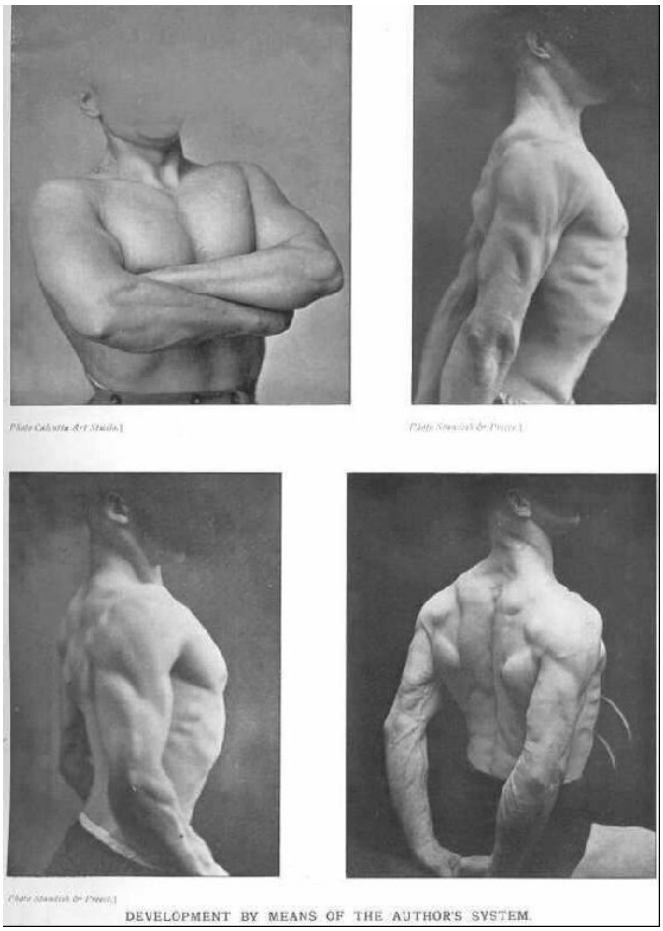
I suppose those writers mentioned in the introduction will simply assume all these men and boys (of which these two are just an example) also secretly trained progressively with heavy weights in multiple sets and then only pretended to have used Sandow's system.

Sandow "wrote" numerous articles, edited a magazine and was involved in several other books most notably I think "The construction & Reconstruction of the Human Body" which had a foreword written by Sir Arthur Conan Doyle and which you hardly ever hear about despite the fact that is extremely detailed and includes a lot of fascinating information on the medical and physiological theories of the day.

Again this is available on line for free and I recommend anyone interested read it in full as it's packed with

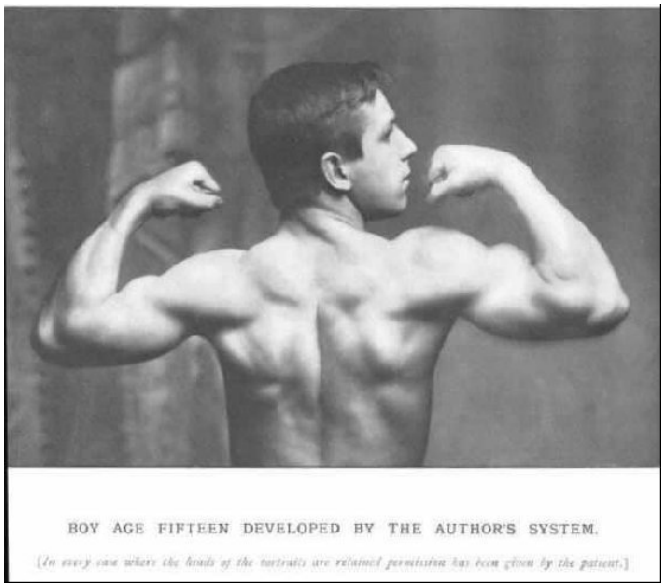
fascinating information. I assume in this instance Sandow simply found a much better quality ghost writer - perhaps his friend Sir Arthur Conan Doyle was involved in more than just the foreword?

This last book also includes some examples of people trained in Sandow's method and I include some of them just to show the type of results that were being claimed for the light dumbbell routine:



DEVELOPMENT BY MEANS OF THE AUTHOR'S SYSTEM.

Not exactly Sandow but certainly sandowesque in terms of shape and definition and although today's aesthetic often demands a more puffed up, heavier look I think most men would be happy to look like the guy on the bottom left above or this fifteen year old Sandow pupil:



BOY AGE FIFTEEN DEVELOPED BY THE AUTHOR'S SYSTEM.

[In every case where the heads of the portraits are retained permission has been given by the patient.]

In “The Gospel of Strength according to Sandow” which was published in Australia in 1902, Sandow summed up his system like this and illustrates perfectly how much it differed from being just some simple movements with beginner’s weights:

> “**My system is a form of physical education by means of which every part of the body is properly exercised, developed and made healthy; the will power increased; the various organs brought to and maintained in a healthy condition and the individual made as nearly as possible physically perfect.**
>
> **It is not a question of learning to perform acrobatic feats with dexterity or of lifting heavy weights; and I make use of only the lightest weights thus avoiding undue strain upon any part…exercise without a judicious use of willpower is of little value. In some cases it is necessary to stimulate this willpower by the use of light dumbbells - the exercises can easily be gone through in less than half an hour, at first fifteen minutes is ample time. The movements are simple and may be learned in a very short time.**

It is what I call my bodybuilding or double contraction series - for the purpose of building up the body, making the physique more beautiful, maintaining the organs in a healthy condition thus increasing the muscular and organic strength, improving the carriage and increasing the symmetry of the body.

It is from this series that I maintain my own strength and keep myself always fit. It is the mind - all a matter of the mind. The muscles really have a secondary place. If you lift a pair of dumbbells a hundred times with your attention fixed on some object away over in Kamtschatcha it will do you very little good. If however you concentrate your mind on a single muscle or set of muscles for three minutes a day and say "do thus and so" and they respond there will be immediate development ".

Sandow complained in his second book that as well as having to contend with all sorts of attacks on his reputation, motivated he claimed by professional jealousy, he also had to put up with a legion of copyists:

"**Various individuals who are never tired of denouncing me and all my works have set up as professors of Physical Culture and are now teaching my system! Of course they would be loath to admit this and would claim it is a system of their own. All I can say is by a strange co-incidence nearly every one of these systems I have examined is based on the same principles as my own** "

Think about this carefully - what principles was he talking about? He certainly can't have been claiming to somehow "own" the principle of lifting weights up and down. He was speaking of taking a light weight and using

it in a very particular way, directing the level of muscular contraction with the mind or will, to bring about a balanced whole body development of muscularity and muscle control.

It's certain that there *were* people simply ripping Sandow off but there is another reason that some of the men he felt hard done by were in possession of systems of Light Dumbbell Exercise identical to his - it's because they came by them from the same source. In fact it is a bit rich of Sandow to complain of being ripped off, as he was himself guilty of taking another man's system and passing it off as his own invention. More of that later, for now let's look at a few of the other men who were around at the same time as Sandow or who popped up immediately after him.

Lionel Strongfort

This guy wasn't really called Lionel Strongfort anymore than Eugen Sandow was really called Eugen Sandow. Strongfort's real name was Max Unger and he was another German - born in Berlin in 1878, which made him eleven years younger than Sandow. Strongfort started his successful stage strong man act in 1897 - the beginning of Sandow's real fame - in which he specialised in the human bridge act and also in reproducing the poses of famous classical Greek works of art.

The human bridge act is a "support" feat in which the performer is on hands and feet with his chest uppermost and his torso forming a level surface for whatever huge weighty object he's going to balance on it and thus "support". Strongfort's act involved supporting an automobile. Yes that's a real automobile - a car...with the engine running...and it was usually fully occupied with a driver and three passengers! Right at the start of the 20th Century just *seeing* an automobile was a big deal - let alone seeing one balanced on a man's stomach.

Strongfort's physique wasn't quite as awe inspiring as Sandow's - although it was very impressive - but he was actually a lot stronger and, as he continually pointed out,

more evenly proportioned. He had a world record lift of 312lb at one point when the previous record was 278lb and Sandow hadn't even equalled that.

He retired from performing in the early 1900's when Sandow's career and commercial business was at its absolute height and jumped straight on the bandwagon. He started knocking out mail order courses in Physical Culture, selling exercise equipment and producing books about his own exploits and his thoughts on exercising, training and bathing - I wonder where he could have got that idea?

With a nice twist, Strongfort actually included a set of dumbbells with the cost of his course - his were not spring loaded like Sandow's but they were still a pretty cool idea. They were hollow cast metal and weighed about four pounds empty but they could be filled up with lead shot and increased in weight to eight pounds.

LIONEL STRONGFORT
Founder of
The Science of Strongfortism

Strongfort took several swipes at Sandow's method then essentially made exactly the same recommendations in his basic Light Dumbbell course and his later advanced heavy barbell-lifting course. Where Sir Arthur Conan Doyle sponsored Sandow, Strongfort had the Marquis of Queensbury onside and in many other ways he followed Sandow's blueprint to the letter - notably in the light dumbbell exercises themselves. The ones Strongfort included in his system are for the most part exactly the

same, with just a few variations and some interesting additions.

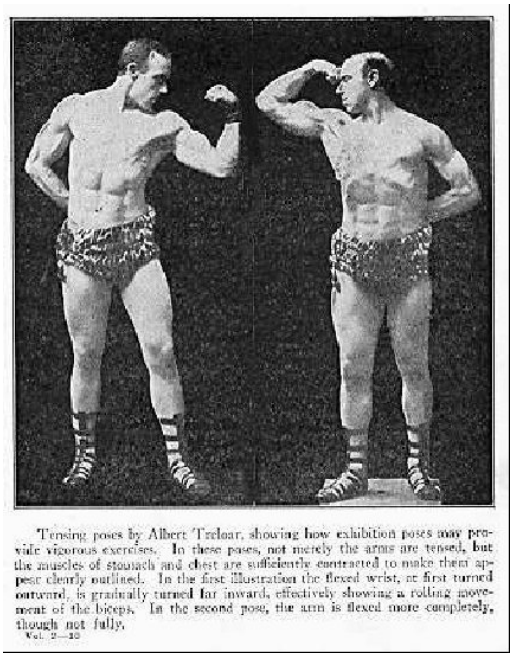
Strongfort's fillable dumbbells

Al Treloar

You will not be surprised to hear that Al Treloar's real name wasn't Al Treloar. If you going to pick a new name, why you would choose "Al Treloar" is beyond me but I suppose it's definitely better than Albert Jenkins which was what his mother had originally called him. In 1903 following on from Sandow's first bodybuilding competition two years earlier, there was the first international contest with finals held in New York's Madison Square Gardens and heats in the UK (which should tell us how popular all this Physical Culture stuff was becoming). Al Treloar was the eventual winner.

Treloar was an intelligent man - indeed he was a graduate of Harvard - but Physical Culture and strongman feats were his obsession. He could apparently tear three sets of playing cards apart with his bare hands. At one time he worked as one of Eugen Sandow's stage assistants and it can only be assumed that he learned something from Sandow while he was there although he wasn't particularly enamoured of the man to say the least.

There's a story attributed to Treloar, which tells of Sandow repeatedly showing off at railway stations when they were on tour by staging an impromptu lifting demonstration for the crowds. He would pick up one of the heavy travelling trunks people used then and hoist it overhead with one hand before letting it fall to the cobbles with a massive crash showing its great weight. Funnily enough, Treloar observed, Sandow's own trunk was never the one closest to hand.



Tensing poses by Albert Treloar, showing how exhibition poses may provide vigorous exercises. In these poses, not merely the arms are tensed, but the muscles of stomach and chest are sufficiently contracted to make them appear clearly outlined. In the first illustration the flexed wrist, at first turned outward, is gradually turned far inward, effectively showing a rolling movement of the biceps. In the second pose, the arm is flexed more completely, though not fully.

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After he won the contest Treloar wrote his book entitled "The Science of Muscular Development" in 1904. It is liberally illustrated with pictures of Mr Treloar demonstrating his exercises, which as you might guess are a series of Light Dumbbell movements. The exercises are once again pretty much identical to the one's Sandow presented but with a few notable variations and additions.

Interestingly Treloar's wife Edna (or sometimes Ida) Tempest (I have no idea if this was her given name, maybe she was just better at choosing stage names than her husband) was also a devotee of Physical Culture and she poses for the comprehensive section on women's exercises included in the book. There is actually footage of the two of them "Posing" for an early film recording and you can find it on Youtube - I recommend watching it as it provides an opportunity to see Treloar moving about and you can clearly see the sort of results his exercises were expected to deliver. You can't see Edna's results so clearly as the sensibility of the times dictated that she demonstrate while wearing what amounts to a Victorian swimming costume (i.e. she is basically fully clothed).

Treloar's book seems to have had the desired effect - we don't know how much money he made from it but he was

regarded henceforth as an expert on Physical Culture and was offered the post of Physical Director at the Los Angeles Athletic Club in 1907. He held the post until 1949 so you have to assume they were pretty happy with him.

Treloar's aim with his book is clearly stated up front and I mention it because it is exactly the same as the aim of the one you're reading:

> "**Both men and women can accomplish the still more useful work of repairing their own health in their rooms…the young woman employed in store or office whose salary will not permit her to join expensive gymnastic classes or still less engage a private instructor can still accomplish great results in exercise. The young married man whose business keeps him away from home and family during most of his waking time very naturally begrudges even two evenings a week at the gymnasium. It is possible for him too, without the gymnasium, to make himself, by exercise; a man such as men ought to be.**
>
> **It is for such people who for one reason or another cannot or will not join a gymnasium that this book is primarily intended… I will make the way easy and show how the city man or woman in their small bedroom may derive great benefit from simple exercises with little or no apparatus …** "

Treloar, as stated earlier, was a literate and intelligent man and did not need a ghostwriter. Consequently he was able to describe the method of exercising he was recommending very precisely indeed and I highly recommend reading his book in full if you have the time or inclination (although I will summarise all the main points in the section on performing the exercises later

on) He introduces the method of exercising with the light dumbbells like this:

> "**Practicing before a mirror and watching the muscles as they work aids in directing the appropriate flow of blood to the part of the body that is in use and greatly assists in bringing on the development that is sought . The speed and tempo on arm exercises should be slow and deliberate - about forty or fifty counts to the minute, slower on body exercises, although the contraction of the muscles may be quicker if it is complete . The return however should be slower to allow complete flushing out of the tissues with fresh blood.**
>
> **The beginner should devote careful attention to muscle control to the end that only the muscles concerned in the exercise be contracted** ".

So again we are talking about performing these dumbbell movements rhythmically with a specific cadence and employing self directed maximal (he says "complete") muscular contractions followed by relaxation to flush the muscle with fresh blood.

Treloar recommends using the same light dumbbells of around 3-5 pounds but is clear that the tool itself is unimportant. What you are after is the particular feeling of maximal contraction and thorough "pump" within the working muscle and interestingly he states that if, as your strength and muscle size increases, it takes longer - i.e. requires too many repetitions - to achieve this effect then that is the time to use a

> "**MORE SEVERE FORM FOR THAT EXERCISE - EITHER BY USING A SLIGHTLY HEAVIER BELL OR BY ADOPTING A MORE DIFFICULT POSITION** "

This is very important - rather than automatically needing a heavier weight one can increase the effect by changing the angle of pull and the leverage slightly. It was the *effect on the muscle* that was important not how much weight you could lift up.

Another important point that Treloar makes warrants a separate mention here. Many other Physical culturists of this and later periods would popularise what were variously called “self resistance exercises” or “tensing movements” which would involve pushing one limb against resistance created by another limb holding it in place - or even creating resistance by going through the motions of lifting an imaginary heavy weight. In both these modalities they often talked of “muscles working against each other” or “the action of a muscle working against tension created by the opposing muscles”.

This is very specifically NOT what is being recommended in the Light Dumbbell routines , either by Sandow or anyone else and Treloar makes this quite clear:

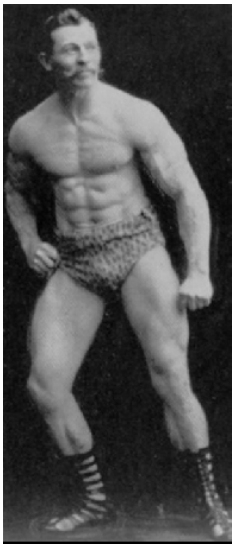
> “**Only the muscles concerned (the prime movers) should be contracted - fatigue should be produced...but NOT BY STRAINING THE OPPOSING MUSCLES** ”

All these different books seem at first to contradict themselves in certain places - they speak of putting “all of oneself into the movements” “contracting the muscles completely” etc and then make a big deal of doing the movements “easily” and “avoiding strain”. This is simply an issue of the language and conceptualisation popular at the time - the muscles involved directly in the action should be worked and tensed thoroughly and not opposed in their work. This counts as letting them work “easily”. If one tensed the whole arm say while doing a curling movement so that the triceps contracting was fighting against the bicep contracting - sort of like trying to drive with the handbrake on - this would be an unnatural use of the arm and would count as “straining”. Treloar’s book is important because he makes this detail central to his instructions.

Staff Sergeant Alfred Moss

Not much is really known about this man but it seems at least reasonable to assume that he really was called Alf Moss and thus he already stands alone among all the music hall strong men of the day by the simple expedient of not having given himself a daft name.

Moss was a contender in the early rounds of the international competition that Treloar eventually won but evidently he was disqualified for being heavily tattooed. This seems somewhat unfair as he was obviously better built than Treloar and had a far superior moustache:



Sergeant Moss had been a British Army Physical training Instructor and gymnastics champion. When he left the army he set himself up with a stage strongman act and later released a book entitled “The Handbook of Free Gymnastics” in around 1912 that included a detailed section on dumbbell exercises.

The word gymnastics does not seem to refer here to things like pommel horse routines, handsprings and performing the front lever on the rings - although he covered these and more in other books - and seems instead to be used in the context of general callisthenics. The dumbbell movements demonstrated are once again pretty much the same ones we’ve already heard about with only a few minor changes but interestingly the

routine is presented in such a way as to be taught to a class of soldiers at attention by a drill instructor.

Sandow's dumbbell exercise principles had been adopted by the British Army at the turn of the Century - in Sandow's words from "Strength and how to obtain it":

> "**It is probably well known that my system has practically been adopted in the army - although the method adopted in the army gymnasia is not absolutely identical with that which I advocate it is obviously based on the same principles .** "


DUMB-BELL EXERCISES 79

FIG. 9.—*See page 76.*

Perhaps the army dumbbell routine presented by Sergeant Moss is the very system Sandow was speaking of. Again, most of the original exercises presented by Sandow are reproduced exactly but with several additions - this time of military drill style movements, principally toe touching and bending type movements.

There is little detail about how to actually perform the exercises in terms of muscle tensing etc other than "keep arms perfectly stiff" or "the legs are kept stiff, turn the arms so the backs of hands are uppermost" etc but it can be clearly seen from the photographs that Moss is generating extreme tension in the movements - far more than would happen naturally when lifting such small weights (see above).

It seems to me that by this time - circa 1912 - the idea of exactly how to go about using these small dumbbells was so universally understood by the general population since the explosion of Sandow and his copyists onto the scene that the word “dumbbells” had become synonymous with a particular mode of training involving rhythmic self generated tension and so it was taken as read that a reader would know that this was required.

Professor Edmond Desbonnet

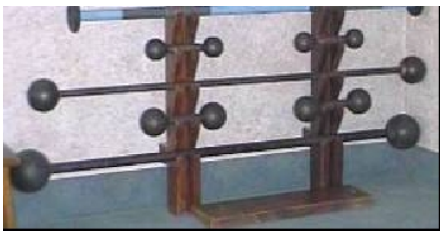
While England saw the rise of Sandow, Strongfort, Moss and a host of others and America was also graced by Sandow’s stage presence and then saw the rise of Treloar and many more, France had Professor Edmond Desbonnet. Desbonnet ran gymnasiums in Lille and later Paris and published several books on physical culture in which he both catalogued previous trends in exercise and the strongmen that went before him (in such works as “The Kings of Strength”) and also established his own “Methode Desbonnet”.

His method is usually reported to have emerged around 1910 - which would leave him open to the charge of possibly being influenced by Sandow’s books but in fact he was writing on fitness and exercise as early as 1884 - before Sandow. He wrote that physical Culture was exclusively for the betterment of the individual - one developed one’s body strictly for oneself and for its own sake and not to compete with others. He also wrote that muscles should be **developed by “local contractions and small external resistance and not principally by violent exertions”**

Desbonnet also became a prolific photographer and historian of Physical Culture in Europe and befriended many of the big names in the emerging science over his

lifetime. He had a huge influence on training and bodybuilding methods in France and apparently there are still studios teaching his method faithfully today. It consisted of light dumbbell exercises - once again many identical to those already mentioned - and relying on exactly the same training methodology of self directed maximal contraction, light barbell exercises using the same approach (at one time the light barbell weighing 12kilo - 24 kilo was known as the “French dumbbell”) and fascinatingly, a series of floor exercises that strongly resemble the floor work of the original Pilates but predate Joseph Pilates work by decades.

Dumbbells & Light barbells used in Desbonnet’s method



Bobby Pandour

Bobby Pandour, believe it or not, was not this gentleman's given name, although as he was actually a Pole called Wladyslaw Kurcharczyk it's understandable that he changed it for the sake of his successful stage career. As we can see from the above photo, Pandour had it all - the Classic Greek statue physique, the fig leaf, the astonishing moustache, and the audiences loved him.

Pandour was born somewhere between 1876 and 1882 depending on who you believe and arrived in London in the early 1900's. He began his stage career at the height of the strongman craze and soon rose to prominence although he was not a strongman as such - his act involved performing hand balancing and gymnastic bar work with his brother Ludwig and then displaying his muscles as Sandow had done before him. He didn't do this inside a lighted cabinet but on top of a Roman column with a bright overhead light for contrast against a black photographic curtain behind him. Apparently his displays of muscle control where amazing to behold.

Pandour made a good living as a sort of poor man's Sandow - posing for artists who couldn't afford the more expensive original - but **he never entered the world of mail order strength courses or books on exercise** . This last point is specifically why I mention him here - Pandour famously never worked out with

heavy weights and insisted he built his muscles with a pair of ten pound dumbbells. This is confirmed by several different sources (including the famous Otto Arco) and it is said that he was forever tensing and flexing his muscles.

Critics of the light dumbbell protocol insist that the men who advocated it actually all used heavy weights and multiple sets and only pretended to have used light dumbbell maximal contraction training because this was easier to sell to a gullible public - yet Pandour who sported an identical physique also claimed to have used this method exclusively and he had **nothing to sell at all and nothing particular to gain from this assertion.**

You might notice Pandour's impressive thigh development (one thing that sets him apart from Sandow) which he put down to his habit of running up several flights of stairs whenever he got the opportunity carrying his brother on his back. I have not included this last idea in the exercise section of this book - I have not tried it and after all I'm trying to avoid exercises that sound like a lot of unpleasant hard work and yet still give you a routine that will get you a good body. If you have a brother handy and you live at the top of several flights of stairs be my guest - it certainly seems to be effective.

Put Pandour's name into Google and you will find him being discussed on many bodybuilding, weight training and bodyweight exercise forums. Usually people are praising the phenomenal muscular development he managed to attain but read on and after a few posts someone will assert "there's no way he got a body like that with 10 pound dumbbells!" then off they will go again asserting - with no evidence and in total contradiction of what the man himself said - that he must have trained with heavy weights.

It's worth noting that all the men featured above (and some of their pupils also illustrated) managed to carve out very impressive bodies fifty or sixty years before steroids were discovered and without modern

supplements, tans real or fake, synthetic human growth hormones, or photoshop.

This is in itself enough to raise eyebrows today let alone the suggestion that they may have also done this with piffling five or even ten-pound hand weights. I am fully aware that this seems a ridiculous claim but that is only because very few people today have as yet attempted to perform these quaint old-fashioned exercises in the way they were supposed to be performed. Anyone who does so will find that because of the very specific angles and the type of tension involved, it is extremely difficult to perform them properly with anything OTHER than a light weight.

If you attempt to adopt the very exacting positions recommended by Sandow, Strongfort, Treloar and Moss and then maximally contract the working muscles as you rhythmically repeat the exercises for the kind of numbers of reps recommended (either between 50 and 100 for some exercises and between 10 and 40 or so for others) you will see that the only weights that make this even POSSIBLE are in the 3-5 pound range. As you get stronger you might need to increase this a bit but not as much as you think - because of the leverage and angles of pull involved a pound or two more makes a huge difference.

Try the exercises as presented later on and you will see that Pandour must have been extremely strong to do this type of work with ten pounds in each hand.

So we've seen that in the late 1800's and early 1900's there was a group of very impressively developed individuals who all insisted that they trained exclusively or in part with very light dumbbells. Many of them left clear instructions for anyone wanting to follow in their footsteps and do the same. The curious reader might wonder where this type of training came from - did all these guys simultaneously hit on the idea themselves as they claimed? - Were the latter ones all simply copying Sandow as *he* claimed?

It turns out that an earlier Physical Culturist had been busy teaching this exact method to his students for years;

students that included Sandow, Strongfort, Pandour Desbonnet and a host of others including pretty much all the notable physical Culturists that populated Europe and America after him, several prominent sports personalities, many of the crowned heads of Europe and various famous public figures.

P rofessor Louis Attila

Every single accolade that was heaped upon Eugen Sandow in the early part of the 20th Century (or which he cheerfully claimed as his due) and which remains attached to his name right up to the present day should, by rights, have gone to someone else. The real father of modern bodybuilding, the first ever celebrity personal trainer by Royal appointment and the first inventor of innovative strength training equipment was actually a man who went by the name of Professor Louis Attila.

Yes that's right - I said, "Went by the name of". Yet again this was a self-appointed stage name and yet again the man in question was a German. Ludwig (Louis) Durlacher was born in Karlsruhe in 1844 and was another highly intelligent and well educated Physical Culturist - playing piano prodigiously as a child and speaking five languages.

The fact that the stage strongman tradition predated not just Sandow but Durlacher as well is proven by the fact that as a youngster he apparently became obsessed with the circus and stage strongmen acts of *his* day and decided to follow in their footsteps.

Durlacher managed to become an apprentice to an extremely famous stage performer called Felice Napoli, an Italian, who was a star turn in all the best circuses and who toured Europe extensively. In those days the strongman act was slightly different - the performer would still contrive to lift heavy weights and perform unusual feats of strength during his act but these feats would be woven into a story or pantomime and he would be expected to play a part (say of the mighty Hercules or a heroic lumberjack who saves the distressed damsel etc) which might involve a fair dollop of singing and acting.

Naploli's specialities involved what was known as "The tomb of Hercules" stunt (identical to the human bridge act mentioned earlier) and lifting heavy objects while suspended by his legs from a rope. He was also famed for his peerless and astonishing physique. The young

Durlacher was only with his first teacher for a few years but we can be sure he learned a lot from him, definitely including these specialities, as his own later career strongly featured all of them in some form.

Durlacher joined a sports and riflery club called the Baden sharpshooters at sixteen and became an impressive all-round athlete. There is a story of him saving the life of the son of the Duke of Baden which may be a bit of PR or may be true but which supposedly gave him an in with the Duke's grateful family which he used later to establish connections to the privileged and wealthy. It also allowed him a glimpse of how the other half live and he decided he'd have a bit of that please and realised that his best route to a much improved lifestyle was via fame on the stage as a strongman, so he formed his own act at the tender age of nineteen.

Renaming himself Louis Attila he toured Europe with an act that featured him lifting and balancing weights and performing his own variations of the feats he'd learned from Napoli. He popularised the Human bridge stunt - an adaptation of the earlier tomb of Hercules stunt - invented the Roman chair and Roman column feats, which involved hanging from a pole by the feet and raising huge weights by the action of the whole unified bodily strength or bending backwards over a chair one was standing on to lift a barbell back to the standing

position. These last two were obviously innovations based on Napoli's rope stunts.

A famous feat of Attila's was to go through a vigorous rifle drill using a heavy iron bar, which he would twirl about as if it were nothing and then balance on his chin. There's no doubt that Attila was tremendously strong but there was a fair amount of showmanship involved in these strongman acts and many of the feats of strength involved were not all they seemed.

They weren't "tricks" in the sense of being completely fraudulent but they *were* tricks in the sense of relying on a certain "knack" or specialist knowledge rather than the raw brawn an audience would think was all that was involved. In this sense he had thoroughly learned the "tricks of his trade" from Napoli and was now capitalising on them.

At one point an eminent "professor Dubois" examined his impressive looking weights and declared them to be "particularly light". In fact the weight mentioned, which appeared massive, weighed only forty odd pounds - light if you're going to use it to do an Olympic lift but still pretty heavy if you're going to bend backwards while standing on a chair reach all the way down to the floor and then pick it up by standing up straight again with an easy smile on your face.

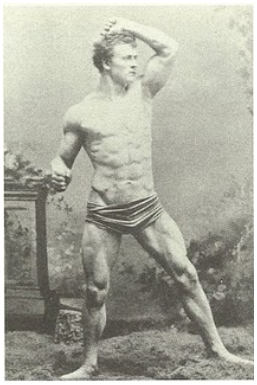
Because he performed in a tight burgundy coloured leotard that clung to his frame like "the skin of an eel" Attila's physique was much in evidence during his act and he began to be approached for advice on exercise and how best to achieve a strong and manly physique. He briefly became advisor on this topic to most of the crowned heads of Europe including the Royal families of Russia, Greece, Norway, Denmark and England. He also trained a host of Rich society figures including the Vanderbilt's, the Rothschild's and Lord Lonsdale of England.

When he retired from performing in the late 1880's Attila opened a salubrious studio of Physical Culture in Brussels where he taught hundreds of pupils. One of these was a flat-footed German draft dodger called

Freidrich Mueller - remember him? This was the man who would later take the world by storm as Eugen Sandow.

The official story, repeated ad infinitum, is that Attila trained Sandow until he became the strongest man in his school and then later either helped him train for the challenge against Sampson in England or actually summoned him to England to challenge Sampson as he knew his pupil could easily best the English strongman (depending on which version is recounted). The rest is history and in these sanitised versions Attila disappears at this point to pop up briefly later on in the tale as the trainer of some of Sandow's successors.

What actually happened was that Sandow had been bumming his way around Europe and ended up at Attila's studio where the Professor spotted potential in him and over a couple of years helped him to further develop his already pretty decent physique and taught him the tricks of the strongman trade. Later Attila went back to the stage in a double act with Sandow and they toured Europe extensively together.



Sandow at 19 in the early days training with Attila

Double act when Sandow was 21 (Courtesy of Jan and Terry Todd, H.J. Lutcher Stark Center for Physical Culture and Sports)

Sandow was taller and teutonically good looking while Attila himself was only a short man, was much stockier and at this point was in his mid forties. I think it was simply a case of the older man saying "Hey kid, with your looks and my knowledge we can make a fortune - stick with me" Sandow wasn't daft and did just that for a while but as is so often the way of things the two fell out at some point. Somehow Sandow went on to achieve everything Attila had himself been working towards and never mentioned or credited his influential teacher sufficiently.

Listen to what Attila was saying when he moved to London and opened a second Gym there in Bloomsbury after he and Sandow had parted company:

> "**Attila's ambition is to teach the British youth how to develop great strength. He has a special system of training, which he is eager to have adopted in our Army and public schools** "

HMMMmm. What, do you suppose, might this special system of training have consisted of? That's right - light dumbbell training utilising focused muscular contractions. This was the foundational training he gave to all his pupils - obviously including Sandow - and the system he believed was the secret of developing great strength. Sandow stole Attila's thunder, sold his teacher's system as his own and went on to have it adopted not just by the British Army but also worldwide.

Very little concrete information survives about Attila and the few biographies and articles that can be found about him all recycle the same scanty sources. Articles often mention the fact that he kept extensive notebooks and scrapbooks throughout his life and writers often mention this resource as their main reference. Recently The HJ Lutcher Stark Center for Physical Culture and Sports actually digitally scanned the entire Attila scrapbook at great expense and it can be read on line for free in it's

entirety at - http://www.starkcenter.org -(please click the donate button if you go there to read it). Now we can read through this priceless document ourselves and see the origin of many of the things routinely written about Attila's life.

(*All direct quotes and images from the scrapbook in this and subsequent chapters appear Courtesy of Jan and Terry Todd, H.J. Lutcher Stark Center for Physical Culture and Sports*)

The Scrapbook is very interesting on the issue of what happened next - namely that Sandow appeared in England and Attila was involved in helping him successfully challenge Samson at the Alhambra Theatre and go on to establish himself as the premier strongman act in the world.

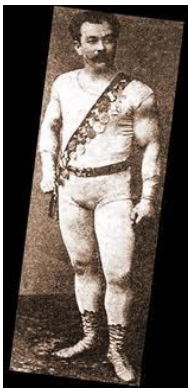
As we have already heard, the official version has it that Attila knew his own pupil could easily best the great Sampson and his pupil Cyclops so he facilitated Sandow's challenge, Sandow won easily and walked away with the crowds adulation and Sampson's job. The version Attila himself presents in his scrapbook paints a very different picture:

> "**I arranged his appearance against Sampson in London - the chain Sandow broke and so won £500 a baby could have torn asunder. One link just hung by a thread. Lord Clifford Marquis of Queensbury and Richmond took my word as Sandow's mentor that the feat had been properly performed. That made Sandow's reputation - it is founded on a lie** "

So Sampson was done over good and proper - no wonder he had been such a vocal sore loser - but then it is probable that Attila and Sandow were playing him at his own game. The above statement was made years later when the two men had fallen out but at the time they both benefited from the famous victory. They toured

together again on the back of this success but eventually fell out again too - this time permanently.

Sandow went to America to hook up with Zeigfield and Attila ended up over the pond too - opening several studios, first one in Long Island and later his “Athletic studio and school of Physical Culture” in New York City. The studio became incredibly successful with a ton of celebrity clients including the boxer Gentleman Jim Corbett, Florenz Zeigfield, Oscar Hammerstein and John Philip Souza.



Attila at this time in America

It was Attila who found the idea of Sandow “writing” a book ridiculous and he and his ex pupil even ended up facing each other in court twice - once when he testified for the prosecution in a matter involving a supposed debt Sandow owed a woman Vaudeville performer and then again when Sandow actually brought charges against his old mentor for “venting feelings through the mail” - alleging that Attila had sent him a letter calling him a “blackguard”.

By this point Sandow had already claimed he invented the light dumbbell training protocol and had reinvented his background so that Attila’s part in his development was massively diminished so maybe this was the cause of the ill feeling?

Attila always insisted that *he* had created the five- pound dumbbell training routine that he taught to all his pupils and said it was indispensable in developing a truly strong and impressive body. Eventually - in 1910 - he published a version of it himself via R.K Fox’s Police Gazette but

this was sixteen years after Sandow had already popularised the routine and the method of training and claimed it as his own.

Most of the information in this short section on Attila comes directly from the information in his own scrapbook supplemented by an article called “Requiem for a strongman - reassessing the career of Professor Louis Attila” by Kim Beckwith and Jan Todd that appeared in the periodical Iron Game History and was itself based on the contents of the scrapbook. This is a great piece full of interesting information with the admirable aim of giving Attila some of the credit he so richly and belatedly deserves. Near the end though, it provides us with a perfect example of how writers continually (unintentionally) misrepresent what was written at the time about the light dumbbell protocol.

The authors mention the five-pound dumbbell routine and quote an interview with Attila called “How to be a strongman” which is included in the scrapbook and in which he describes all his exercises. They then state the following based on the article:

> “**Although Attila recommended beginners use light weights he did his best to make up for the lack of weight by requiring a high number of repetitions… unlike many physical culturists of this era Attila did *not* believe that light weights were all that was needed for strength and fitness…Attila claimed that light weights were good for beginners and would develop every muscle group when used scientifically however when people have trained for a time they are taught great feats (*of strength*)…what is the use of acquiring strength if you do not also learn how to use it?** ”

This is a perfect example of a modern expert in the field of weight training looking at something through the lens of their own knowledge. While it is perfectly reasonable

to read the article in question as above, what it actually says is:

> "**My system of light dumbbells is intended to develop every muscle in the body but once those muscles are developed I teach my pupils to perform great feats for what is the use of acquiring strength if you do not also learn how to use it?** "

In other words he was very clear that it was his system of light dumbbells that developed his pupils muscles (no mention of only being for beginners) and then ONLY once those muscles were sufficiently "developed" would a pupil be introduced to lifting feats by which time he had already acquired the requisite strength . To put it in a nutshell Attila is saying the light dumbbells both developed all the muscles AND made one strong.

He goes on:

> "**The system consists of a series of exercises with dumbbells varying in weight according to the strength of the subject from 2 to 5 pounds, each movement is designed to take effect upon a different muscle or group of muscles. (He then describes the exact set of exercises that would later appear in his book "Professor Attila's five pound dumbbell exercises" with particular attention to the one legged squat).**
>
> **"There are still athletes of the old school who ridicule light dumbbells as a means of muscular development - Sandow laughed at his first pair of five pound dumbbells, that was in 1886 when we first became associated, but at the present time there is no stronger advocate of the light dumbbell system than Sandow and no stronger illustration of its efficacy can be had than comparing his development today with that shown**

in a photograph taken before he had been trained in this method ".

That's right, far from this piece showing that all the strongmen of the day believed in light dumbbell work while Attila was different and knew that this was not all that was required for strength, what it actually argues is that **despite the ridicule of many of his peers** , he believed that light dumbbells developed all the muscles, let one acquire strength that one can then learn to use to perform great feats **AND THAT THE LIGHT DUMBBELLS ARE RESPONSIBLE FOR SANDOWS AMAZING LEVEL OF DEVELOPMENT** ! (If only we had the "before" photo for comparison)

In another article included in the scrapbook in which Attila was introducing his new protégé Max Unger (who would later become Lionel Strongfort) he says:

> "**The system I have devised for the training of strongmen I term my five-pound dumbbell system and it is now almost universally used by experts in physical training…by these exercises not only are the biceps enlarged but the arms chest neck abdomen and legs are strengthened and made serviceable… in six months a man of ordinarily good physique should, by practicing such exercises, be able to perform most feats of strength generally seen upon the stage** "

So again, not just simple exercises for beginners but essential foundational work that would develop the muscles and make one functionally strong enough to begin performing strength feats:

> "**The light exercises make muscle and the work with the heavy weights enables one to utilize the strength thus gained. Once properly built up, the muscular standard may be maintained by ten minutes work**

night and morning with the five pound dumbbells ”

And once more, not light exercises for beginners, to be discarded as soon as strength is gained, but an invaluable programme of exercise that will maintain ones muscular condition on an ongoing daily basis.

Elsewhere in the scrapbook, when an interviewer is questioning Sandow and Attila together, Attila’s feelings on the light dumbbell routine become even clearer:

> ***But Mr Sandow, how has professor Attila brought you to such a stage of muscular development - I suppose He has given you very heavy dumbbell exercises?***
>
> ***With an amused smile the great trainer interposed*** **- “That is where the great mistake in training is made. No doubt at the gymnasium you attended they started you with dumbbells of 6 or 7 pounds? Well would it surprise you that I begin an average pupil with 2 or 3 pounders? That I began Sandow himself with fives and even now he exercises with dumbbells weighing only 7 pounds ?”...**
>
> ***With that he put into my hands Sandow’s instruments ...*****” Yes that is one of the great secrets of muscular education - long continued exercise with light weights ...** ”

This is labelled “interview 1890” in Attila’s handwriting and seems to be from a magazine called “Rod and Gun”. Several interesting things can be realised from this quote - that at the time in *any* gymnasium it was normal practice to begin a pupil with dumbbells weighing 6 or 7 pounds but that Attila thought these TOO HEAVY to use for his exercises! That he confirms once again Sandow started training and built his body with light dumbbells and that even then (at his muscular best when he was appearing on stage lifting great weights every night)

Sandow still trained daily with the light weights - although by now he'd graduated to 7 pounders. Attila even produces them and hands them to the interviewer!

It's very clear if you think about it for a second that this "dumbbell training" they are speaking of does not consist of just ordinary weight lifting movements - Attila's "system" involved using these weights in such a way that 6 or 7 pounds would be too heavy at first and indeed would be enough even for Eugen Sandow at the peak of his powers.

This is 1890 - years before Sandow had broken away from Attila and was selling this light dumbbell system. Here neither of them had anything to gain whatsoever by claiming to train one way or another. They made their money and fame by performing on stage and in Attila's case from running his gymnasium. He would certainly not make much cash as a trainer who recommended protocols that didn't work or whose pupils turned out neither strong nor impressively built. Sandow was both and he trained at this time with 7-pound dumbbells.

This was a man who could do a somersault while holding two fifty-six pound dumbbells so what kind of exercises would require only five pounds for him to work with initially and then later, when he was muscular and very, very strong could still be usefully performed with as little as 7?

This is the question nobody seems to have asked. The answer is that Professor Attila's "magic" dumbbell system involved rhythmic, alternating and prolonged focused muscular contractions in positions carefully planned to give optimal leverage and facilitate the optimum working of each muscle or muscle group.

Just how in hell this system actually produced the results he claimed for it we will address later - but for now it's enough for us to realise that the evidence points to the fact that it existed and that Attila really did believe in it and so did all of his pupils.

Despite how weird it sounds to us, he wasn't in fact saying that light weights were only good for a beginner

and one should move up to heavyweights to build muscle as is often stated.

He was saying that the light dumbbell protocol was his great secret - that it could transform one's physique and lay the foundations for great strength, that it could be practiced by beginner and Sandow alike, that 2 or 3 pounds were enough to begin with and that even when strong and well built 7 pounds was plenty !

After Sandow left him and they fell out acrimoniously, Attila trained a young Max Unger (Lionel Strongfort) to be his new protégé and went on to train many others including Bobby Pandour and Edmond Desbonnet. In fact Beckwith and Todd begin their homage to the professor in Iron Game History with this quote:

> "**One thousand dollars to any Charity if I cannot conclusively prove that every alleged instructor of Physical Culture in this country is either a former pupil of mine or is using one of the systems I have originated and perfected...** "

Attila said this in 1894 and undoubtedly he would not have had to pay up - as we saw in the last chapter everyone who was anyone in Physical Culture was indeed an ex pupil of his and/or was championing the light dumbbell protocol he claimed to have invented when in the Baden sharpshooters back in his teens.

I have no doubt that the particular *routine* he laid out - and especially the way it systematically moved through the muscles of the entire body with particular emphasis on what we call today the "posterior chain" or the "back line" - the muscles and fascia of the back - was Attila's own creation. The interesting question though is whether or not the actual training *principles* it utilised - self generated tension with light dumbbells - were being used by anyone before him and whether he may have picked them up from his mentor Felice Napoli or from another source.

It turns out that from the 1830's to the 1850's - from before Attila was born to when he was only around six years old - there was an even earlier Physical Culturist teaching in Europe (initially in Brussels funnily enough just like Attila would later). This was someone else who developed an amazing physique and who also recommended light dumbbells to his clients. When we look into this man's incredible story it starts to look like this odd method of training might be very old indeed.

H ippolyte Triat and the Ancient Greeks

When one thinks of Napoleonic France, the image of luxurious well appointed gymnasiums packed with middle class exercisers who paid monthly subscriptions and took group classes in floor exercises and body toning classes with light weights does not spring instantly to mind. This all sounds a bit too much like a 21st Century fitness centre with its Pilates and cardio classes and its resistance room. Nevertheless, such a place actually existed.

We wouldn't know anything about this if it weren't for Edmond Desbonnet the French student of Professor Attila and keen photographer and chronicler of Physical Culture History we heard about earlier. Desbonnet discovered historical information about an amazing individual who revolutionised exercise and physical training in the mid 1800s and who single-handedly invented the gymnasium as we think of it today, the group exercise class, the idea of exercising for a beautiful body as well as just strength and fitness and very possibly the barbell as well.

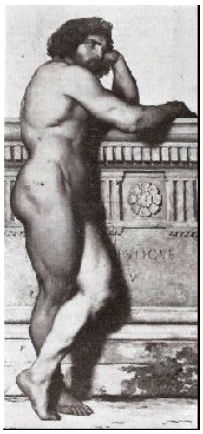
The man in question is Hippolyte Triat (his actual name - hooray) whose life story reads like it was ghostwritten by Alexander Dumas and who may well have been the first man in modern world to popularise the mode of training used in the light dumbbell protocol we have been reading all about.

Triat was born near Nimes in 1813 and was then kidnapped by gypsies when he was six and spent the next seven years living with them and performing in a travelling high wire act while dressed as a young girl! When he left the gypsies he was part of a travelling strongman act (this is 1826 - sixty years before Sandow supposedly "invented" this form of entertainment and twenty years before Attila was even born - showing there really is nothing new under the sun) until, the story goes, he broke his leg while heroically rescuing an aristocratic

lady from a bolting horse (I know - you couldn't make it up)

To repay the young man, the lady's family paid for him to be properly educated at the Jesuit college of Burgot until he was twenty-two. He was taught to read French, Spanish and Latin and - already interested in the strength of the body and athleticism - he had access in the Jesuit school's extensive library to several ancient volumes which discussed the exercise methods of the ancient Greeks and Romans. Among these works we know were - the writings of Mercurialis, Plexotis, D'Andry and "Treatise on the art of tumbling" by the tutor of Francois I.

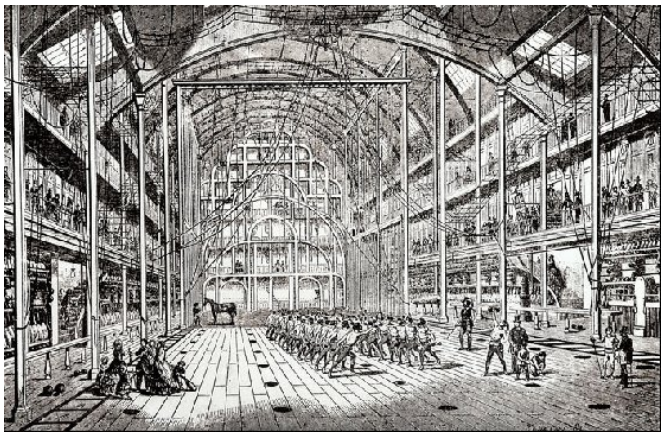
When he left the school he went back to performing as a strongman but he had obviously learned something worthwhile from all his reading because, by all accounts, he now looked amazing and his strength was something well out of the ordinary. He "invented" a revolving pole contraption, which he would hang from and actually pick up horses (this sounds suspiciously like the Roman Column that Attila "invented" again later). He travelled through Spain and even England and ended up in Brussels were he opened a very successful gymnasium to train others.



The only image that survives of Hippolyte Triat

Later he moved to Paris and opened an even more impressive studio, which the novelist Paul Feval (one of his students) wrote about in 1856. It was this report that Desbonnet read and thus rescued the memory of Triat from obscurity. Feval made a big deal of Triat recreating

or “rebirthing” the art of ancient gymnastics based on the ancient Greek Palestra as a place to thoroughly exercise the body and soul as one entity.



An engraving of Triat’s Paris gymnasium from Desbonnet’s book - you can see the lines of pupils are training with the light dumbbells doing an exercise straight out of Attila’s/ Sandow’s / Treloar’s and Moss’s books - exercise 11 in *this* book in fact!

He describes a huge vaulted gallery - a “vast cathedral nave” with three floors of balconies surrounding a huge exercise floor. The “transept” was strung with a web of ropes and trapezes; half the floor covered with vaulting horses and parallel bars with the rest a huge wooden parquet open space.

Favel speaks of Triat appearing on one of the balconies with a body resembling ancient Greek statuary and strength three or four times greater than a normal man and then leaping off into space to catch hold of a stray rope and then swinging effortlessly about the place fifty feet up, traversing the massive space like Spiderman or Burt Lancaster in one of his pirate films before lowering himself hand over hand to the floor where he would conduct the evenings exercise classes. The whole place was lit up by integral gas lamps and the balconies filled up with the great and the good who had come to watch the exercise like people might go to the theatre or the opera.

When he describes the exercise class itself we hear about floor exercises, large and small dumbbells, iron bars and bars with globes on the end and finally the “heavy

barbell" work all done in such a way as to "**exercise one by one and in a logical and therapeutic order all the muscles of the human body** " and that's about it - Desbonnet himself could find out nothing else about Triat (with whom he became obsessed) for years and it wasn't until much later when he was a Physical Culture expert in his own right having trained in the methods of Sandow and Attila that a man brought his son to be taught by Desbonnet and casually mentioned that he had, when young, been a student of Triat.

Desbonnet quizzed him, was introduced to other surviving students and managed to piece together information about the man's methods, which he later included in his own "methode Desbonnet".

Triat claimed to have developed a system of "Rational Gymnastics" that blended the best of ancient knowledge with the best modern innovative approaches, inventing equipment such as dumbbells, barbells and cable machines along the way. His system was arranged like this:

"**Free hand exercises** - arm rotations, lunges, knee bends etc...

Six Kilo Globe Barbells - placing bar behind neck and twisting etc

Light Dumbbells - movements thrusting in all directions, always alternating

Light Barbells - raising the arms with a half twist etc

Heavy barbells and Dumbbells - single lifts, snatch, swings, presses, cleans etc

Physique Poses - among which is "the gladiator"

When we realise that, according to Desbonnet's research, the "heavy" dumbbells the student finished this workout with weighed only 15 kilos and the light barbells 6 or 12 kilos it's reasonable to suppose the light dumbbells must have been around 3 kilo's or less (about 6 pounds). This means his system was basically a series of what Sandow had called "free movements" to warm up with, twists and bends of the "Good Morning" kind or possibly some

squats with a 12 pound barbell on the back, a series of alternating movements with approx 6 pound dumbbells, some twisting exercises with a approx 25 pound barbell, a quick intense burst of single lifts like swings and cleans with 30 pound dumbbell or barbell (the equivalent of training with a small 1 “pood” kettle bell) and then finishing off with some kind of muscle control exercises or poses.

This is very similar to the type of training Professor Attila was teaching in his studio’s and the latter weights involved, although nominally “heavy” wouldn’t be called that in most modern gyms. If you referred to a 15-kilo barbell or dumbbell (just over 30 pounds) as heavy you would be laughed out of most of them.

Also to make it all sound even more familiar, Triat would prescribe these exercises according to the student’s strength and condition at the start so everyone would start off with the light dumbbells and 6 kilo bars and gradually add the other exercises to the routine as their strength increased until they were doing them all in a routine including one set of each in “under an hour”.

He believed in certain maxims including - “working out should not be working to death” and “exercise is not exhaustion” which sound similar to Attila and his various acolyte’s advice to “put all of one’s self into the work but to avoid undue strain” etc. Triat also made much of the harmonious working of the body and the “spirit” as one united force - similar to Sandow and Attila’s instructions to concentrate the “will” as the motive force of the muscles and he says:

> “**The aim of these exercises is not to create a heavily muscled Hercules but to turn out men who are harmonious in appearance, healthy of body and strong of spirit** ”

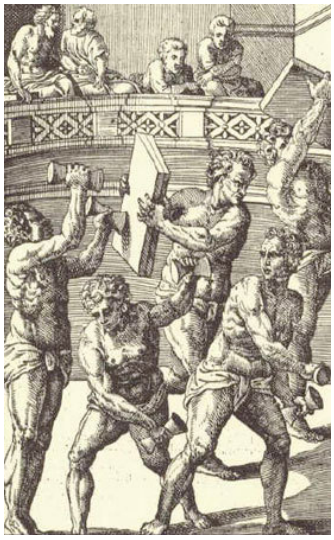
Speaking of the actual method employed in the exercises we only have this little snippet, referring to his invention of the various exercise implements (including light dumbbells) used in his studio:

> “**The implements themselves are nothing without the knowledge to use them. A tool is one thing but using it with proper understanding is quite another** ”

This is all so similar to the knowledge Attila was disseminating forty and fifty years later that one has to wonder if he came into contact with Triat’s methods at some point in his youth or if his mentor Felice Napoli - a man sure to have been well versed in the cutting edge training methods of his day - had absorbed some of them, or even if they had become so popular and influential throughout Europe from the 1850’s onwards that they simply filtered into everyone’s practice. We certainly saw how quickly Attila’s own routine caught on once popularised via Sandow.

Triat’s methods, as we have heard, were heavily influenced by what he read in the ancient texts he was exposed to in the Jesuit school. These titles still exist and we can examine them for ourselves (at least we can look at the pictures and read various commentaries on them if we only speak English!) One of them was a famous work by Mercurialis.

Hieronymous Mercurialis of Forli was an Italian writer and physician whose writings included “De Arte Gymnastica” - written in 1569 as a result of his studies into ancient Roman and Greek writings on athletics and therapeutic exercises in the ancient world. The recommendations on exercise in this work echo the writings of Socrates, Plato, Galen and Seneca and the first and later editions are liberally illustrated:



Above we can see men exercising with what are clearly light dumbbells and something called “plummets” heavy plates of stone or lead. It is easy to see that Triat’s exercises with light dumbbells and twisting with 12 - 25 pound fixed weight barbells at arms length owed a lot to this text. Note the type of physique displayed by the men in the illustration and compare it to the pictures of Sandow and the others in chapter two.

The people at The University of Texas at Austin Todd-McLean Physical Culture Collection have a first edition illustrated copy of this text that is apparently being fully translated. These are the same people who did the amazing work with the Attila scrapbook so perhaps we will soon be able to read this famous text in English in digitised form (fingers crossed). Until then I can only guess at the actual instructions for the use of the “halteres” or light dumbbells but I would like to think that they would involve using weights of around 2-5 pounds, concentrating the mind, the will or the “spirit” to produce rhythmic focused contractions for prolonged periods and doing this on a daily basis to build both muscle and strength.

If this turns out to be the case then the method of training that Triat, Attila, Sandow and all his contemporaries championed from the mid 1800s to the early years of the 20th Century might actually be an echo of the very methods used to develop the bodies that the

ancient Greek and Roman Statuary they so admired was actually modelled on.

It's interesting to me that although every sensible modern commentator asserts that the strongmen of old (who were all very vocal about the use of light dumbbells) simply MUST have actually used heavy progressive resistance to develop their impressive bodies, **the physiques of the men concerned - Triat, Attila, Sandow, Moss, Treloar, Desbonnet etc - don't actually look like those of modern trainees developed by heavy progressive resistance** .

They are very muscular certainly but they uniformly sport a different look, a different aesthetic from today's typical muscular body. They do look remarkably like *each other* though, in terms of size and type of development, and they do look remarkably like those illustrations in De Arte Gymnastica and classical statuary from the ancient world. Is it unreasonable to suppose this might be because they all trained in the same way and in a way that is different from how we typically do it today?

(*The information on Triat in this chapter comes principally from a series of articles written for Iron Game History by David Chapman, translating the earlier writings of Desbonnet)

T he W.A.T.C.H Protocol

OK, that's the overview of the history of this peculiar type of light dumbbell exercising out of the way. Before we can actually get on to describing the exercises themselves it's necessary to lay down, very specifically, the exact method of *using* the light dumbbells that I think all these different Physical Culturists were recommending.

Most of the original texts from the 1880's - early 1900's are written in what sounds today like "quaint" Victorian English using phrases that are, at the very least, obscure and often confusing. This is all further complicated by the fact that today people already have very definite ideas about dumbbells and weight training. Back then, readers were coming to the subject of Physical Culture and dumbbell exercises with completely fresh eyes - it was all totally new to them and they will have had no pre conceptions whatsoever about what it was they should have been doing.

Even then - when the pupils were coming to the light dumbbell exercises with a totally open mind - people had difficulty understanding the very precise instructions and were sometimes doing the exercises wrong and thus missing out on the proper results.

Sandow mentions this in his second book - in fact he says it's what prompted him to develop his "spring grip dumbbells" - and the problem must have been sufficiently common for people to need help. Some Sandow enthusiasts actually wrote commentaries trying to make the system clearer and help those who couldn't quite "get the knack of it".

One of these texts was "The Science and art of Physical development - with hints on the Sandow System" written in 1902 by W.R Pope, a student of the Sandow method from London.

This little book is extremely interesting and I have used many of the "hints" Mr Pope provides later in the section

on the exercises. The author says several interesting things under the heading “The Art Of Exercising”:

> “**In order to obtain anything like satisfactory results from the exercises it is absolutely essential to acquire a correct and thorough style of working . There are a great number of students who having worked diligently for a month or two, find such little increase or benefit from the system that they throw the thing up in despair - the common fault being that they have not mastered the art of performing the exercises correctly** ”

And later:

> “**I strongly advise all such to seek assistance and tuition from a competent instructor** ”

THE AUTHOR.

A picture of Pope with the 16-inch arms he built with his 5-pound dumbbells. Moustache sold separately.

This last point should tell us a lot - remember, at this time people who could afford it were signing up for expensive private tuition in the gyms of men like Attila and Sandow to be personally coached in the correct use of the light dumbbells. Think about that for a minute. If this system is really just what modern commentators

have supposed it to be by looking at the pictures in the books and “recognising” a very simple beginner’s dumbbell sequence, why on earth would anyone need detailed ongoing personal instruction in how to perform it correctly?

If you were just supposed to do curls, presses and raises with these little weights what on earth would these ongoing and very costly private lessons consist of - “lift weight, lower weight, lift weight, lower weight…OK have a shower?” no - the assistance and tuition of a competent instructor is recommended because exactly what it is you’re being asked to achieve with the light dumbbells is not easy to do nor easy to get your head around just by looking at pictures of someone else doing it.

And here is the even bigger problem for those of us coming to this exercise method in the 21st Century - to us those instructional pictures look exactly like something else altogether. We are all vaguely familiar with those modern theories on weight training discussed in the first chapter - we know exactly what “weight training” involves and how it should be done so when we see the light dumbbell exercises we “see” only a beginner’s dumbbell sequence with weights too light to do you any real good.

The first thing you have to realise is that **THIS IS NOTHING TO DO WITH WEIGHT TRAINING . THE WEIGHTS THEMSELVES ARE ONLY INCIDENTAL - IT’S WHAT YOU YOURSELF ARE DOING WITH YOUR MUSCLES THAT IS IMPORTANT .**

The second thing you have to realise is that the very word “exercising” - as in the previously mentioned Mr Pope’s chapter on “The art of exercising” - was being used then in a different way to mean something totally different from what we think of as “exercising” today. For a start it was supposed to be a physical “art”.

We tend to think of proper “exercise” as something difficult and physically taxing - the man who’s just come back from a ten mile run, panting and bending over to get his breath back, his legs wobbling underneath him,

has just finished his “exercise” - the person lying in a sweaty heap of exhaustion after one and a half hours hard cardio on the machines, static bike and cross trainers has just “exercised” etc… by this definition exercise is taxing on one’s system and needs recovering from.

This is not what was understood by the word exercise at the time the light dumbbell protocol was popular - that would have been “hard training” maybe or “a session of thorough physical work”. Exercise was supposed to be invigorating and enervating - to put something *into* your system rather than take something *out* of it, to build up rather than tear down.

If you take your dog out for a good walk and a bit of a run around the park you do it so he gets “exercise” but you don’t expect him to be so exhausted afterwards that he needs a day off to recover. If you “exercise” a racehorse leading up to a big race, you take it out for a gentle canter so that it’s muscles get warmed up and are kept in a state of high condition but you don’t flog it to death for miles and miles until it’s foaming with sweat - that would use up all it’s energy and it would need recovery time and be no good for running a race the next day.

This is the use of the word “exercise” the old strongmen were familiar with. The light dumbbells were supposed to thoroughly invigorate and build up every muscle by working it through its full range and flushing it with healthy nutrient rich blood - to keep the muscles in peak condition but not to tear down muscle tissue and expend undue energy.

The idea was - if you mastered the *art* of doing this correctly - by daily “exercise” according to this definition you could bring your muscular system to the peak of development and condition. We are talking about a completely different training paradigm than the current - tear down muscle fibres, allow them to recover and grow and then repeat, model we all think of today.

When in “The Science and Art of Physical Development” Pope discusses all the various “systems of exercising” available in his day and then decides that, having

sampled them all, the Sandow light dumbbell method is by far “the best and most efficient”. It sounds at first a bit strange and unlikely to our modern ears.

He discusses; heavy weight training with progressive increases in weight (interestingly), cable exercisers and expanders, athletics and gymnastics and the light dumbbells and says they are all good but the last one (light dumbbells) is “superior”. This would definitely raise eyebrows today because from our perspective all these modes of training “do different things” - respectively building strength and muscle mass, working muscles in extension but not necessarily through their full range, building endurance, explosiveness and plyometrics, working on whole body strength and co-ordination and maybe just, in terms of the light dumbbells, slightly toning the muscles…how the hell can the last one be “superior”?

Our current thinking on exercise obscures what it is he’s really saying. What if you read it like this? :

There is this thing you can do to thoroughly “exercise” every muscle in your body systematically where you rhythmically and strongly contract them all consciously using your “intention” and keep this up for an extended period. We’ll call this the “Art of Physical Development”. Doing this increases your neurological control over those muscles as time goes on so that you constantly improve your ability to do it as you go.

This practice has the effect of flushing the tissues with blood and, over time, results in a particular type of body development were the muscles become very dense, defined, bigger and shapelier, perfectly proportioned and more responsive all the time.

This in turn facilitates greater strength, as you are able to consciously control, relax and contract the muscles better when using them for other things; it improves whole body co-ordination and therefore agility and athletic ability and is absolutely wonderful for the health of the whole body.

To get this effect there are several different approaches you can use - you can do exercises with progressively heavier weights, you can pull chest expanders or cable exercisers, run about on the track doing athletics, tumble around or swing on bars doing gymnastics - **all the while rhythmically contracting the muscles for a prolonged period** - and they will all work to some extent but the easiest, quickest and most reliable way to get this effect is the simple light dumbbell protocol.

This is what he's actually getting at. What's the best, the "superior" method, on a daily basis, in as little time and with as little hassle as possible, to thoroughly "exercise" all the body's muscles in this particular way , improving them and making them grow, look and work better? - The Light Dumbbell Exercises. As the man says:

> "**The whole success of a system depends on it's capabilities in the fewest number of movements...what a student requires is a pocket edition of exercises so to speak that can be easily remembered and quickly performed yet with the very best results** "

Wouldn't we all want exactly that - a pocket edition of exercises that we could perform everyday that would get and keep us in great shape quickly and reliably? I believe this is exactly what all the Physical culturists of old tried to give us. Unfortunately "Physical Culture" splintered into body building, fitness training, sports science and functional strength training etc and from our modern perspective that perfect "pocket routine" seems an impossible dream or if anyone imagines it is a possibility - when they look at the Light Dumbbell protocol it's the last thing they can see it representing.

This is a terrible shame because if we could just shelve all our perfectly rational reservations and actually *try* this modality of exercising for a few weeks or months - **and master the correct way to do it** - we would see that the masters of old weren't messing around - it does everything they said it would. It works better and faster

than any other method of exercise I've ever tried despite the fact that by all accounts it shouldn't work at all.

It seems to me that what we need is a new way of looking at this old way of working out. To avoid any confusion, and to make it absolutely clear what we are trying to achieve in doing these antiquated exercises we need a new and clear definition of this exercise protocol. We need to make it very clear what the light dumbbell routine *is* and what it is *not* .

It is NOT weight training in the normal, modern sense of the words,

It is NOT a series of light "toning" exercises

It is NOT a routine where you pretend the weights are heavier than they are and you do a pantomime of heavy lifting in slow motion,

It is NOT isometrics ,

It does NOT involve pitting the action of one muscle against another

It is NOT some form of mental gymnastics in which you somehow "imagine" your muscles bigger .

It IS however a very smart and efficient method of achieving prolonged powerful rhythmical contractions and alternate relaxations of all the body's muscles.

It can be done daily in a relatively short period of time with minimal equipment in a small space.

It results in a certain type of muscle growth - hypertrophy - that sees the muscles increase in size, tone, density and definition in a very balanced way relatively quickly.

It massively improves a trainee's neurological connection with his body

(the so called Mind-muscle connection), which has the knock on effect of enabling the trainee to do the exercises "better" or more completely as this capacity increases.

This improved neuromuscular control and the ability to consciously recruit more muscle fibres than one could before actually increases the trainees potential strength output and the response of the muscles to the mind's instructions in movement so this simple training method will have cross-over benefits into all other physical activities, sports and other conventional strength training

The dumbbells are merely used - along with very specific physical postures - to help you properly "work" only the muscles targeted by each exercise and they should be heavy enough to do that job but not so heavy that you have to concentrate on moving the weight about instead of on easily and completely squeezing the muscle for a total contraction .

The weight should be well within your capacity to just move through the exercise with without particularly even feeling it if you weren't trying to generate a full muscular contraction at the same time.

For example, imagine I told you to stand with both arms out to the sides in a crucifix posture with a dumbbell in each hand and then had you to do a sort of alternating dumbbell curl motion. If you're reasonably strong you could probably attempt this with two fifteen or twenty pound dumbbells - if you are *very* strong with even more.

But what if I stipulated that the arms had to be held perfectly straight with elbows locked out and shoulders down, arms exactly parallel to the floor? What if I said the elbows should bend maximally when you curl the dumbbell to the shoulder but that the elbows shouldn't move in space at all - even a fraction of a millimetre?

And what if I told you to only involve and rhythmically contract the deltoid, bicep and then the triceps? What if I told you to keep it up, alternating arms and turning the strong contractions on and off as you go but to keep the rest of the muscles - the chest, back etc relaxed? And what if I told you to keep going for 50 perfect reps at about 1 second or slightly more per rep?

There is absolutely no way you can do this properly with 15 or twenty pounds - ten pounds would be way too much for most normal humans - you could *sort of* do it i.e. you could fight your way to 50 reps with your face grimacing and everything shaking but you would be engaging *all* the muscles of your arms back and chest at once in an uncontrolled manner and your "form" would be all over the place.

Modern safe practice dictates that in this sort of position - when doing dumbbell fly's say - the arms should be slightly bent and the shoulders slightly shrugged rather than the exaggerated stiff-armed military posture I've just described. This is to safeguard the joints and becomes necessary if one is working with challenging weights - otherwise we would be stressing the tendonous connections in the elbows and the rotator cuffs. This is the whole point - even a ten-pound dumbbell becomes unsafe and too difficult to handle properly in these positions and defeats the point of the exercise.

With no weight in hand hold your arm out to the side, slightly bent at the elbow, and then try to maximally contract just the deltoid muscle. Then straighten the arm so it's locked out and make a fist and try to contract the deltoid strongly again - which position gave you a better and more complete contraction?

It's simply the case that the second position facilitates a better complete conscious contraction. If we are then going to take a dumbbell and use it to enhance that action and repeat this contraction rhythmically over and over again THE DUMBBELL HAS TO BE HEAVY ENOUGH TO HELP BUT NOT SO HEAVY AS TO COMPROMISE OUR ABILITY TO PROPERLY AND

SAFELY PERFORM THE EXERCISE IN THAT POSITION.

To complete this exercise properly, most people - even already strong people - would benefit from a dumbbell of about 3 - 5 pounds. A particularly strong man might work up to using 7 or 8 pounds but beyond that the weight (although still VERY light by normal weight training standards) would interfere with your ability to get the right kind of effect going on in the muscles. Somebody else might only need 2 pounds to get the right feeling and effect over the required number of reps - for them even 4 or 5 pounds would be too much.

Remember it's NOT weight training - you're not trying to impress anyone - or indeed yourself - by how much weight you can do the exercises with. You're trying to bring about a certain effect in the muscles and you just want the perfect tool to help you do that and no more.

At the end of 20 or 30 minutes of this type of exercising, when you've worked every muscle in the body thoroughly, you should be very warm internally, slightly sweaty and feeling good. If you've used the right light weight you will be, your muscles will all be pleasantly pumped, defined and hard and you will feel full of energy. If you've tried to use too heavy a weight on the other hand, your muscle attachments in the elbows and rotator cuffs will be complaining, you'll be out of breath from straining and being unable to breathe normally and easily throughout the set as is required, and you'll probably be shaking from the effort. You'll feel like you need to sit down for a bit and recover and this is not what we want.

These exercises are specifically designed to be used with **as light a weight as possible to get the desired result** and not as heavy a weight as possible. Think about that - this is exactly the opposite of the normal modern weight training protocol. The desired result is not successfully broken down muscle tissue from hard exertion - it is maximally worked and enervated muscle tissue from alternate self generated contractions assisted by a slight increase in tension afforded by a small weight.

For convenience - so I don't have to keep defining what sort of exercise I'm talking about here and saying "remember we're talking about contracting the muscles in a self generated rhythmical way" etc - and to make it clear that this approach is not supposed to work by developing the body in the same way as the progressive resistance approach, I suggest giving this method a new name.

From here on in I'm going to refer to improving the musculature by means of the classic Light Dumbbell Exercises as The "W.A.T.C.H protocol" - this stands for:

W eight
A ssisted
T otal
C ontraction
H ypertrophy

In other words the improvements you can bring about in your muscular system - the particular type of development and hypertrophy you can achieve - come about entirely as a result of the repeated total muscular contractions you yourself generate and you just use a small weight and some specific postures to help you to do this.

So now when people tell you can't build big muscles with small weights you can say yeah that's true - not by ordinary resistance training protocols BUT you can significantly *improve* your musculature in terms of size strength and general appearance if you use some light dumbbells to do the W.A.T.C.H. protocol. This is what Attila called "the science of muscular education".

The W.A.T.C.H Protocol - Instructions:

1. Follow the instructions concerning the position of the body in each exercise to the letter and <u>do not deviate from that position during the performance of the exercise.</u>

2. Select a dumbbell that is just the right weight to challenge you slightly while performing the movements in strict form for the suggested number of repetitions - for most people this will be in the 2-5 pound range. As you get stronger it may increase to as much as 7 or 8 pounds but DO NOT be tempted to start with too heavy a dumbbell just to satisfy your ego. The rule should be to choose the Lightest weight with which you can effectively perform the exercise and generate the right feeling in the muscles.
3. Squeeze the dumbbell tightly and generate a deep and as complete a muscular contraction as possible in only the muscles stipulated in each particular movement. Try to relax the muscles not directly involved.
4. Most of the exercises are alternating movements - as soon as one movement finishes, completely relax the muscles you have just used as you begin contracting the opposite muscle. This sense of alternating contraction and relaxation is very important .
5. The exercises move through the body systematically - as you complete the exercises for each body part and move on to the next, completely relax the body part just worked - shake it out and feel it fill with blood.
6. **Do not hold the breath at any time while performing the exercises** - breathe fully, normally and easily throughout. Do not grit the teeth and screw up your face as you tense the muscles - this will cause you to involuntarily hold the breath. Try to cultivate the ability to maximally contract the muscles while breathing normally and keeping the face relaxed.
7. The cadence or rhythm/timing to be used in the exercises in **extremely important** . For most of the exercises you want to aim for slightly longer than one second per rep initially, (time it with the second hand of a clock at first until you get a feel for it) Sandow called it a “Waltz time” and I found this very

useful. Keep strictly to this cadence and don't *pause* between individual movements - keep moving smoothly at the right rhythm exactly in the manner a ballet dancer trains at the bar . When you begin to experience muscle fatigue and try to keep going it's natural to either slow down or speed up - DON'T! - Keep going at the same cadence and you will get the ache and hit momentary failure sooner. The push-ups, sit-ups and squats will be done a little slower than this.

8. Above all - concentrate entirely on the working muscle or muscles, not on moving the dumbbell through space .
9. When you finish the sequence of exercises, run through the body contracting each muscle and group of muscles separately a few times and then relaxing them. Then tense the entire body all at once and then relax it completely - the old courses all recommend a series of "physique poses" here but if you would feel ridiculous adopting these typical "muscle man" positions it really doesn't matter any position will do - just practice control of the muscles by tensing and then relaxing them. **Don't miss this bit out - it's very important .**

T he Exercises

If you've read the first part of the book concerning the history of the Light Dumbbell training - what were now calling the W.A.T.C.H protocol - you'll remember that lots of different Physical Culturists sold versions of essentially the same routine but with various differences in the order of the exercises and with some omissions and additions here and there but they all recommended essentially the same protocol.

When I originally started training in this method I used Sandow's sequence of exercises and later added in extra variations I liked the look of from Treloar, Strongfort and others. Some of them I liked and still use occasionally and some I didn't get on with and abandoned. Later I tried what we might call the original routine - the one presented by Professor Attila in the articles in his scrapbook and in his 1910 book.

It seems to me that this is the best arrangement of the exercises and that Sandow probably changed it around a bit just to give it his own stamp so to speak (as did all the others) but that in doing this he missed out a couple of really nice exercises for the back and over emphasised the wrists and forearms.

The exercises I'm presenting here are Professor Attila's but with the odd variation here and there as an optional, additional or alternative movement - when this happens a note is included to say where the exercise comes from.

When to exercise:

Entirely up to you - some writers recommended one session every morning, some a single session in the evening and some recommended splitting it into two sessions morning and evening. Personally I like to do it in the evening or late afternoon if I'm going out and won't be able to do it at the normal time. The important thing is to do it consistently.

Frequency:

Do the whole thing everyday. Attila said daily, Sandow said to have a day off when you need it; others recommend six days a week with one days rest. Personally I like to do it every day and then have a day's rest when my body feels like it. This way I tend to have a break every week or so - it might be seven days on, one day off, eight days on one day off or maybe ten days straight then one day off.

The main thing is don't apply the train/ rest/ train rest / three days a week model believing you need rest to grow and recuperate - it isn't that type of training. Your body will respond better if you do it on a daily basis. If you feel this is too much at first I suggest Monday to Friday with the weekend off but try and build up to every day - think of doing the routine as just part of your everyday body maintenance like brushing your teeth.

How long should it take me?

At first you should be able to bang through the whole thing in about fifteen minutes or so building up to twenty or twenty five. As you get better at doing the exercises and as you are able to do more of them it might start to take you a bit longer but even now after three years I only take about half an hour in the evening.

Where should I do the exercises?

It doesn't matter but try and do it somewhere quiet so you can be on your own and concentrate on the exercises to the exclusion of everything else. Don't put music on or God forbid do it in front of the television while chatting to your Wife/ Husband or significant other.

Those facilities they have in gyms now were you can plug headphones into a TV and watch the news or MTV while you "work out" lead to exactly the wrong type of exercising for our purposes. That type of approach would lead to just mechanically churning out the movements while your mind is off somewhere else entirely. We want your mind focused inwards and concentrated completely on contracting the muscle or muscles you're working in each exercise.

Exercising in front of a mirror helps a lot at first - both to check your posture is correct throughout and to see if the proper muscles are visibly contracting (and indeed to spot if other ones that are supposed to be relaxed are contracting involuntarily) this really helps in developing the ability to control your muscles.

Where the hell is the Brachialis?

Ok - the instructions that follow tell you to control and contract certain muscles. We all know were the bicep is and most people reading this will be familiar with the location of most of the major muscles but if you aren't this will be a problem. Many of the old books mentioned in the history section included very detailed sections on human anatomy with meticulous diagrams of all the muscles and their actions, attachments, origins and insertions etc

This was because the Physical Culturists of the day were asking their pupils to learn to master the action of every muscle so it was essential to have a grasp of where they were and what they did. It's still essential but we live in the age of the Internet and thankfully it's not necessary for me to attempt writing a comprehensive anatomy section. Instead, when you read a mention of a muscle you can simply Google it and see what it does.

There is a simple chart in the appendix of this book that shows the locations of all the main muscles and it will also help you to have a basic understanding of what they all *do* - but a broader understanding would definitely help. It's interesting to realise for example, for those of us that aren't anatomists, that the bicep is involved in turning the hand palm up or palm down and is attached to the shoulder blade, the trapezius doesn't just sit either side of the neck but is huge and runs right down and across the back and that part of the pectoral muscles are intimately involved in the action of the shoulder blades - who knew?

If you can't be bothered with all this extra reading - fair enough - but at least cross check the instructions with the anatomy chart in Appendix I .

The instructions for the exercises that follow are extremely detailed . It's vital that you understand every little detail about how to do them so that you can master the right way to perform them and so get the results you want.

Read through each explanation carefully until you're sure you "get it" and then attempt the exercise. For the first couple of weeks keep checking back to make sure you've grasped all the important points - there will probably be lots of little things that you missed first time around. If you can't "feel" a certain exercise or can't figure out how it's supposed to hit the target muscles go back to the description and read it through again.

I have tried to make the instructions as clear as possible but that means that at first each one might seem needlessly complicated - it will only seem like that initially until you get the hang of all of them. Once you have, you can just refer to the simple list of exercises at the end of the chapter. In a few weeks you will remember them all easily and be able to go through the whole routine systematically without referring to the list at all.

At that point the Light Dumbbell routine will be as Pope said - "**a little pocket edition of exercises that can be easily remembered and quickly performed yet with the very best results** ".

Exercise 1.

Alternating Dumbbell curls:

Stand up straight with feet close together, toes pointing slightly out and bend at the knees slightly. Make sure your weight is mostly forward in the balls of your feet - check yourself in the mirror to see if you're leaning forward without realising it. Pull the pelvis to a central position so the weight falls into your toes and you can feel it's your thigh muscles mostly holding you up. Relax the muscles in your buttocks or lower back.

Hold the dumbbells loosely in each hand and have them resting lightly on the front of your thighs with the palms rotated fully to the front (fig 1)

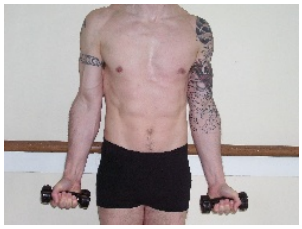


fig 1

Alternately raise and lower each arm as if you're trying to touch the dumbbell or palm of your hand to the front of your shoulder and then return it to the original position (fig 2). When you raise or "curl" a dumbbell to the top position keep the elbow on that side pinned to your ribs - don't allow it to lift up to the front or move anywhere at all. Squeeze the handle of the dumbbell tightly as you curl it and try to contract the bicep fully at the top of the movement.

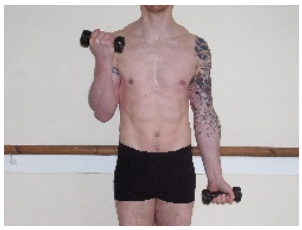


fig 2

Keep the little finger side of your arm twisted up as much as possible throughout the movement - keeping the dumbbell level and parallel to the floor with the back of

the hand pointing towards the floor. Doing this will help you get a good contraction - if you get too lazy and let the little finger dip down even slightly so the dumbbell goes at too much of an angle you won't get a proper maximal contraction with each rep. Don't flex or bend at the wrist - keep the back of the hand in line with the forearm.

At first just concentrate on the bicep - contract it as much as you can on the curl up and relax it again on the return as you are repeating the movement with the other arm and squeezing the bicep on that one. Go for a target of one hundred reps at the even cadence mentioned earlier (this would be fifty on each arm obviously). At first, depending on the weight you're using and how good you are at contracting the muscle you should really begin to feel it somewhere between thirty and fifty reps in and somewhere between sixty and one hundred reps you should get the deep "ache" and reach momentary failure. (These numbers are all just a rough guideline - you might hit the right feeling at twelve or fifteen even) Stop and shake out the arms for a few seconds.

(As Pope points out you shouldn't confuse an "ache" with merely getting a bit tired - if you are contracting your muscle correctly you will know exactly when to stop - you'll reach a point well before the hundred when you simply can't do any more. If on the other hand you seem to be able to pump out a hundred no problem and feel *nothing* it would be natural to assume the weight is too light - it's much more likely that you're not engaging the muscle sufficiently on each rep, especially if you're using the full five pounds.

Feel the muscle as it contracts with a finger of your other hand - compare it to the relaxed triceps on the back of the arm - the bicep should be rock hard and full of blood. If it just feels slightly firm you need to improve your neuro-muscular control over that muscle - don't worry, your ability to contract the muscle maximally will improve really quickly)

Once you can do this "beginning" version of the exercise really well - successfully alternately contracting the biceps over about a hundred evenly paced repetitions

until they pump, and then “ache” causing you to stop - you can start including the triceps in this exercise too. This will entail contracting the triceps on the back of the arm strongly as you lower the dumbbell while relaxing the bicep on that side and simultaneously contracting the bicep and raising the dumbbell on the other side. Suddenly a very simple looking exercise becomes a complicated feat of syncopated muscle control.

It’s best to spend the first couple of weeks at least just concentrating on the biceps in this first exercise even if you think it sounds like a doddle. Remember, you need to alternate between complete tension and complete relaxation in each part of the arm - not partial tension - and NOT simultaneous tension in the whole upper arm.

When you get really good at the muscle control you can play with using Eccentric contraction in the bicep on the lowering phase instead of engaging the triceps - in other words tense the bicep on the way up and then try and keep it maximally tense as it extends on the way down. This is really difficult - try maximally tensing your bicep now with your arm out straight instead of bent at the elbow while the triceps stays relatively relaxed. This will probably seem impossible at first but this is the level of voluntary control over your musculature that these exercises give over time.

When you complete the first exercise shake out the arm and rest for maybe thirty seconds before going on to exercise two. You want to build up to going straight from one exercise to another throughout the whole sequence but the first two always require a short break to let the blood back into the muscle.

Exercise 2.

Alternating Reverse Dumbbell Curls:

Stand in the same beginning position as for the previous exercise except with the dumbbells resting on the front of the thighs with the backs of the hands pointing out. (fig 3)

fig 3

Keeping the elbows down and pinned to the sides as before, alternately curl the dumbbells up so that the backs of the hands almost touch the front of the shoulder. As before, keep the wrists straight and keep the dumbbells perfectly level - this time by keeping the little finger side of the hand twisted away as much as possible and the palm side of the hand facing the floor throughout. (fig 4)

fig 4

Now you are concentrating on contracting the bicep again - although in a different position - and also the brachialis muscle on the outside part of the upper arm. You will also feel this one in the muscles of the forearm.

As last time, at first concentrate on alternately contracting and relaxing the biceps and Brachialis principally and go for a target of one hundred reps. You should find you get the “ache” and are forced to stop at approximately half the number of reps you managed on the previous exercise - again if this doesn’t seem to be the case you are not performing the exercise correctly. Keep trying and you will get it.

When you can do it with proper control over these muscles you can once again start involving the tensing of the triceps as you lower the arm while relaxing the biceps and brachialis - you will find you get a different and stronger contraction of the triceps with your hand in this position. Keep the same cadence/rhythm as last time.

Again when you've finished this one you will probably need to rest for thirty seconds or so of shaking out the engorged upper arm. Don't take lots of long rests between movements though as the routine is designed to have a knock on effect with each exercise building on the effects on the preceding one until each body part has been thoroughly worked, pumped up and then flushed with fresh blood. If you stop too long between exercises it will be counter productive.

Exercise 3.

Alternating Crucifix Dumbbell Curls

Stand up straight as before with knees slightly bent, weight in the balls of the feet rather than the heels (although not so much that your knees pass over your toes), and relax the buttocks and lower back so that you feel your bodyweight in your thigh muscles. Extend both arms out to the sides palm up with a dumbbell in each hand. The arms should be straight out, elbows locked, shoulders down, head up and looking forward (fig 5)

fig 5

Alternately curl each dumbbell towards the shoulder - as you do this strongly contract the deltoid muscle, and the bicep on that side. Turn your head and look along the opposite straight arm. As you straighten the curled arm back out again turn your head to look down that arm as it straightens and curl the other arm towards the shoulder tensing the deltoid and bicep (fig 6).

fig 6

Sandow described this as principally an arm exercise concentrating on biceps and triceps with secondary involvement from the deltoid but Attila calls it a deltoid exercise first and foremost and I've found that I've had better results with it concentrating on the deltoid first.

AS you get better at performing the exercises and improve your muscle control, you can start to concentrate on contracting the triceps strongly in the straightening arm as you alternately contract the deltoid and bicep in the curling arm - don't worry too much about this at first as it will only encourage you to just tense everything at once. It's much more important to get a rhythmic powerful "on-off" contraction and relaxation cycle going in the deltoids and biceps (and then latterly the triceps too), while keeping everything else in the back and chest relaxed and the breathing normal than it is to just generate tension everywhere.

Aim ultimately for fifty reps in this (twenty five each side) but realise that as it follows on from other arm exercises and your arms are already full of blood and "worked" you should hit the point were you get the ache and stop at about twenty or so at first or maybe even earlier.

After a pause of only a few seconds go on to the next exercise.

Exercise 4.

Simultaneous Crucifix Dumbbell Curls

Stand exactly as in the previous exercise (fig 5)

This time curl both dumbbells simultaneously towards the shoulders. Again concentrate at first on strongly tensing the deltoid muscles and the biceps - only this time on both arms at the same time. As you do this, tilt the head down so your chin comes closer to your chest. (fig 7)

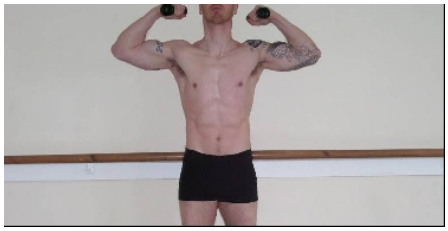


fig 7

Then straighten both arms out to the sides again tensing the deltoids. This time tilt your head back so you're looking upwards (fig 8).

fig 8

Again just concentrate on the deltoids and biceps until you get the hang of it so that you can easily keep the correct position, tense the deltoids and biceps and relax the biceps on the way back. Once you have this down you can start to strongly contract the triceps on the straight arm phase of the exercise.

The changing head position will help you get a better contraction in the deltoids and as your muscle control improves will help you consciously involve the trapezius as well. Be careful of purposefully tensing this muscle at first in this position as it can cramp and be tremendously painful.

* Most of the light dumbbell movements are alternating movements and this is one of the few that works both arms at the same time - be especially careful to breathe normally and NOT HOLD THE BREATH in this one and also be careful to only tense the target muscles and NOT THE WHOLE UPPER BODY .

At the end of exercise four you have finished the section concentrating specifically on the arms (although the arms are still involved secondarily in most of the other exercises. Your arms should be filled with blood, pumped up and feel thoroughly "worked". Pause for thirty

seconds or so and totally relax them, shaking them down and try to get the muscles to wobble and be loose again as opposed to being dense and solid to the touch.

Then move on to the shoulder exercises.

Exercise 5.

Standing Dumbbell Pectoral Fly's

Stand erect with weight in towards balls of feet, knees slightly bent and thighs slightly engaged - buttocks and back as relaxed as possible as before. This time hold the dumbbells straight out in front of you with arms locked perfectly straight, shoulders down, head up looking forward. (fig 9)

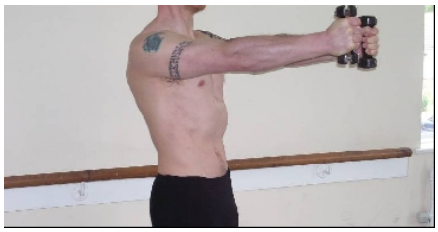


fig 9

Breathe in and come up on the toes as you draw both dumbbells simultaneously out to the sides into a crucifix position but with palms facing forwards this time. Keep looking to the front. (fig 10)

fig 10

Strongly contract the gastrocnemius muscles of the calf and the deltoid muscles as you do this. Don't hold the breath at the end of this simultaneous contraction - just co-ordinate the movement with a complete in breath.

Then lower back down again as you exhale and bring your arms back to the original position relaxing the deltoids. At first just concentrate on the calves and the

deltoids and on co-ordinating the movement with the breathing.

Once you have this down and you are getting a really good rhythmical contraction and relaxation cycle going in the calves and deltoids when you perform this exercise you can start to concentrate on the pectoral muscles in the second phase.

As you bring your straight arms back to the front and relax the deltoids, strongly contact the pectoral muscles. Feel like it's this action that squeezes the air out of your lungs like a bellows. This action is like a straight-armed version of the "pec deck" machine for those of you who are familiar with it.

As you get better at the exercises you can begin to take the arms back further than just out to the sides in the opening move. Attila talked about the arms meeting behind the back! Maybe he could really do this or maybe he was just providing an image to help the trainee get a fuller range of motion I don't know but be careful not to force the arms past your natural range and overstretch. Taking them slightly past the frontal/coronal plane facilitates a better contraction of the deltoids and lets you start consciously contracting the upper part of the latissimus dorsi as well.

Your deltoids should already be worked from the last two arm exercises so you will probably get congestion and "ache" in them somewhere between twelve and twenty reps.

Go straight into the next exercise

Exercise 6.

Alternating Dumbbell Presses

Stand in the same way as before with the dumbbells positioned over each shoulder in the same position as the end position of exercise four except with the muscles all relaxed (fig 11)

fig 11

For those who are familiar with dumbbell presses this will seem “wrong” as a start and default position from which to do presses but with the light dumbbells and the watch protocol it actually makes sense.

Press either dumbbell up at arms length and strongly contract the deltoid muscle of the working arm. Keep the rest of the body relaxed in the original position. (fig 12)

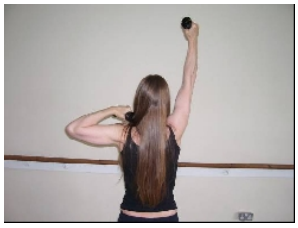


fig 12

Breathing normally, alternate the pressing action, raising one arm than the other for about twenty or thirty reps or until the deltoids tell you to stop.

Initially just concentrate on the deltoid of the pressing arm but once you have mastered a good rhythmical contraction and relaxation cycle in this exercise you can begin to contract the deltoid on the way down as it were - feeling as if you’re actually pulling the weight back down towards you and tensing it strongly as the arm reaches the bent position.

If you master this you can get a rhythm going where you have a maximal contraction at the top of the press and another in the bent position with a momentary relaxation between in each arm and *then* have this going on simultaneously - so one deltoid is tensing at the top position and one is tensing in the bottom position continually for the duration of the exercise.

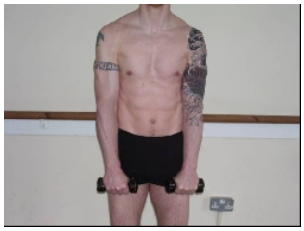
* Don’t hold the breath and don’t just tense all the muscles of the shoulder girdle simultaneously - this is exactly the opposite effect from the one we need.

Then go straight on to the next exercise

Exercise 7.

Alternating Dumbbell Front Raises

Stand as before in (fig 3) but with dumbbells resting on the thighs



Concentrating on generating a strong contraction in the deltoids, alternately raise each arm to the front with elbow locked and wrist straight. (fig 13)

fig 13

At first just concentrate on getting the contraction as you raise each arm and relax the muscle as you lower it and raise the other arm.

Once you can do this effectively, getting a strong maximal contraction as you lift the dumbbell, you can start to play with keeping the contraction on the way down too. In this more advanced performance of the exercise the cadence will go like this - tense on the raise/tense on the lower/immediately completely relax deltoid/ raise other arm tensing deltoid/ lower other arm tensing deltoid/ immediately fully relax deltoid/ raise original arm…etc the ability to switch the deltoid “on and off” completely and not involve any other muscles will enhance results here.

Let the dumbbells go all the way down so they lightly touch the thigh but don't completely rest them there, then on the raise lift the arm to either chin level or level with the top of the head - see which one gives you the better contraction. For me level with the top of the head works best.

Your deltoids should be screaming by now and twenty or thirty reps should be plenty in this one - aim to build up to fifty.

Try to go straight on to the next exercise but by now you might need to put the dumbbells down and rest for a bit - if you do shake the arms out but don't stop for more that thirty or forty seconds - you're nearly at the end of the shoulder section.

Exercise 8.

Simultaneous Arm Rotations

Stand in the crucifix position but with the dumbbells held palms down (fig 14)

fig 14

fig 14a

Keep the arms locked straight and rotate the arms at the shoulder from palms down to palms up repeatedly and quickly about thirty times. You should contract the deltoids but this will also strengthen and work the rotator cuffs.

Your deltoids should have been worked really thoroughly by now so they might give up after only ten or twelve reps. Aim to build up to thirty and then eventually fifty reps as you get stronger.

Alternative Shoulder exercise

This exercise comes from Al Treloar's book and if I am in a hurry or just fancy a change I will use it in place of exercises 5&6

Stand erect with knees locked and dumbbells extended out to the front at 45 degrees. Hold the arms locked out straight, parallel to the ground, palms down. You will be able to angle the body forward slightly with the weight in the toes (fig 15)

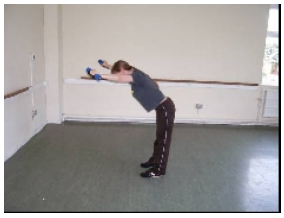


fig 15

Tense the deltoids and then bring both straight arms together above the head with palms facing towards each other. Keep the arms perfectly straight and locked and allow yourself to come back to a vertical position (fig 16)

fig 16

Alternate between the two positions keeping the deltoids contracted strongly. Go for fifteen to twenty reps and breath in as you extend the dumbbells forwards and out as you raise them overhead.

Alternative Shoulder Exercise 2

Another exercise from Treloar's book. This one is very effective and again it's one I usually use if I'm in a hurry -

I might just use this one and exercise 7 as my only shoulder movements.

Stand facing either a wall or a piece of furniture that is approximately the height of your waist. Bend forward and rest your forehead either on the wall or against the top of the piece of furniture (you might want to use a towel or something for padding) let the arms hang down towards the floor holding the dumbbells (fig 17)

fig 17

Relax as much as possible all the muscles not involved then raise the dumbbells up to the sides in a fly type motion with locked elbows while strongly contracting the deltoids. (fig 18)

fig 18

Relax the muscles as you lower back to the start position and repeat for between fifteen and twenty reps at first. You can eventually go higher but you probably wont hit fifty in this one - it hits the rear deltoids very strongly.

You've now finished the shoulder exercises - put the dumbbells down for a short rest and shake out the arms for maybe thirty seconds or a minute. The deltoids have had a lot of work now and they are still involved as secondary movers in pretty much all the exercises to come.

Exercise 9.

Dumbbell Wrist Circles 1

Attila tells us to place the thumb over one end of the dumbbell for this and the next exercise. I feel this is because we don't need to grip the dumbbell and add extra tension in these movements and because to attempt them - even with such a light weight - with the hands gripped tightly around the handles of the dumbbells is not good for the tendons in the wrists and elbows.

In fact, these two exercises - although they definitely strengthen the muscles of the forearm - may well have been included as much to stretch out these tissues as build them up as by this point in the routine you have already worked the grip and the forearms a lot by continually and alternately squeezing the dumbbells.

Stand in the by now familiar crucifix position with the dumbbells held palm down as in (fig 14) but with the thumb over one end of the dumbbell. Circle the dumbbell ten to twenty times keeping the arms straight and elbows locked.

Exercise 10.

Dumbbell Wrist Circles 2

Repeat the exercise above but circling the dumbbells in the opposite direction.

Pope recommends using lighter dumbbells for the wrist exercises than for the rest of the routine - 2 or 3 pounds if your using 5 pounds for the main exercises and this is good advice. You can even just do the circles making loose fists & without the dumbbells if you find it too much work for the elbow tendons at first. If you have ever had a past problem with elbow tendonitis be careful with these.

Put the dumbbells down and shake out the hands and wrists for a few seconds before starting the section of exercises concerned with the back.

Attila believed very strongly that the muscles of the back were the seat of power and all real strength and that these exercises where the most important ones in the whole sequence. At first it will be hard to believe some of

them are in fact back exercises at all. We are accustomed to thinking of the back as needing heavy weights to stimulate it's musculature in movements like the bent row or the dead-lift and so effectively working these big muscles with tiny dumbbells seems impossible but actually these exercises are brilliant.

If you can get the hang of how to do them to really hit the large muscles of the back you will find they are all extremely effective. They are though, some of the most difficult to get the "knack" of but stick with them - they are worth it.

Exercise 11.

Dumbbell Punching Movement

Stand with the weight resting mostly on the right foot with left foot pointing straight ahead and right foot pointing to the side at about forty-five degrees. Hold the dumbbells so the one in the right hand is held at shoulder height and the one in the left is resting on the left thigh. (fig 19)

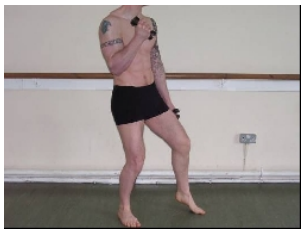


fig 19

Then push strongly off the right leg and lunge forwards with the left leg "Punching" out simultaneously with the right arm at face height. Keep the non-punching arm straight and grip the dumbbell on that side tightly too. Finish in the position shown in (fig 20) then immediately go back to the start position. Repeat this action twelve or fifteen times at first and build up to twenty-five reps.

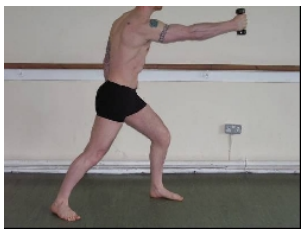


fig 20

It is quite difficult at first to see or feel this as a back exercise but try to get a full contraction in the latissimus dorsi muscle on the side of the punching arm both in the "punch" forwards and then in the "pull" back to the start position.

If it helps you can see this exercise as being analogous to a boxers wall pulley cable exercise alternated with a one arm cable rowing movement on the return (in other words imagine you're using one of those cable machines where you pull on a cable attached to the machine behind you which causes a weight to lift up on a rack, and alternate with a similar exercise where you pull on a cable attached to a machine in front of you as you would on a rowing machine) It's up to you to generate the proper tension and involvement of the back muscles using the dumbbell to help you. You need to generate tension in the lat in extension (as you punch out) and in contraction (as you pull the hand back).

Now repeat the exercise with the feet the other way around for the left arm/ left side of the back by pushing off the left leg and stepping forward with the right.

This is the exercise that the pupils are performing in the engraving of Hippolyte Triat's gymnasium shown earlier.

Exercise 12.

Dumbbell Good Morning Deadlift

This exercise is all about fully flexing and extending the back. Stand erect with both dumbbells held straight up over the head with arms straight and extended. (fig 21)

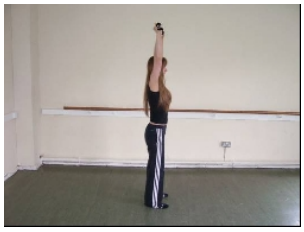


fig 21

Slowly bend forward so that the dumbbells come level with the knees or shins - or if you are very flexible and

can touch your toes easily without actively “stretching” allow them to touch the tops of the feet - just don’t force it and don’t “bounce” in the movement. (fig 22)

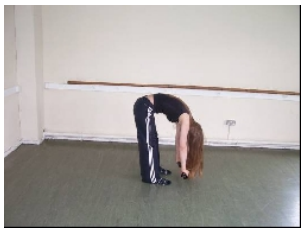


fig 22

Then straighten up again, keeping your arms in line with your ears throughout, and go back to the start position. Go for between twelve and fifteen reps and be careful - even though you are only using 2, 3 or 5 pound dumbbells that’s actually 4, 6 or 10 pounds that your lower back is working with in extension and in a position where leverage will make it seem like much more.

Try to actively work the muscles of the lower back as you come up in this exercise. It will really help to keep the weight in the balls of the feet rather than the heels and grip the floor with your toes as you straighten up. This is one of the movements were light weights are essential - particularly at first. If you get the hang of this exercise you’ll be surprised at the amount of tension it produces in the whole back but particularly the erector spinae and quadratus lumborum

Exercise 13.

Dumbbell Shrugs

Stand straight with dumbbells at the sides (fig 23) then raise the shoulders towards the ears (fig 24)

fig 23

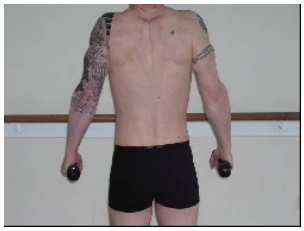


fig 24

Alternately raise and then lower them again. Try to actively and strongly contract the trapezius muscles as the shoulders raise and relax them again as they fall. The deeper rhomboids are also involved.

It will really help here to check the chart and get a good sense of how extensive the trapezius muscle is. You need to gain the ability to consciously activate all of it as you raise the shoulders.

Only do ten or twenty reps of this and don't overdo the tension as you can actually induce a painful spasm in this muscle if you are not careful. Breathe normally and be sure not to tense the neck and jaw involuntarily.

Exercise 14.

Dumbbell Crossovers

Stand straight with the dumbbells held out to the sides at 45 degrees, palms down (fig 25)

fig 25

Keeping the arms straight and elbows locked, swing the arms forward so that the wrists cross over in front (fig 26) and then swing them forcefully back to the original position.

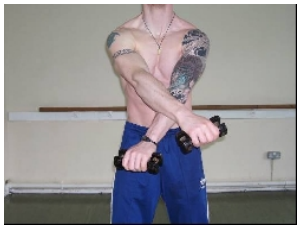


fig 26

Try to involve and strongly contract all the back muscles as you would if you were performing a cable crossover exercise (in other words an exercise where you hold the handles of two cables attached to a machine behind you and you pull both cables simultaneously and diagonally so the handles cross in front of you and a weight raises in the machine behind you). Strongly contract the back both as you swing the arms in front of you and again as you return them to the start position. Go for fifteen reps building to twenty-five reps.

This is another exercise in which it is quite difficult to generate the correct tension in the target muscles - particularly if you can't already consciously contract the latissimus dorsi muscles, the rhomboids and trapezius by an act of will. As you get the hang of it the exercise will become both easier to do and more productive.

Exercise 15.

Dumbbell Side Bends

Stand up straight with dumbbells held by the sides as in (fig 27)

fig 27

Bend from one side to the other so that the dumbbell on that side lowers towards the knee (fig 28)

fig 28

As you do this tense the external oblique muscles on the sides and the erector spinae and quadratus lumborum in the lower back on the side that is bending. Alternate sides for between twenty to fifty times.

Again, at first these muscles are difficult to actively contract but the position adopted and the weight of the light dumbbells will help you feel the muscle's action and then you will gradually be able to enhance it voluntarily and get a strong rhythmic contraction.

In Sandow's version as one dumbbell goes down towards the knee the other dumbbell is pulled up to the armpit on the opposite side of the body. You can do the exercise this way if you like but the simpler movement seems to work better for me and makes it easier for me to get alternating contraction in the obliques and lumbar muscles.

Exercise 16.

Simultaneous Dumbbell Back Extensions

This exercise is especially difficult to get the hang of but is well worth the effort if you do - it's great for the muscles of the mid and upper back and also has a powerful affect on the triceps on the backs of the arms.

Stand up straight with the dumbbells held by the sides, arms locked straight and palms forward (fig 29)

fig 29

Then extend the stiff arms backwards rotating them forcefully so that the palms face behind you (fig 30)

fig 30

Hold this position for a second or so with the upper back in isometric tension and then return to the original position. Repeat about fifteen or twenty times, holding the rear position for a second or so each time and contracting the muscles in the mid and upper back and the muscles in the back of the arm.

Think of the position you would be in and the type of tension you would be generating at the end, raised position of a “dip” on parallel bars.

Alternative Back Exercise

The Ski Jumper

This is a variation of exercise 16 that Lionel Strongfort included in his course. He actually had the hands as in exercise sixteen - i.e. palms forward in the first position rotating to palms backwards in the final position - but personally I’ve found this to be problematic for the tendons in the elbows which tend to complain before the target muscles have had enough. I switched the hand position to a “hammer curl” type position, which is better for me, and now the exercise reminds me of the position of a ski jumper.

This variation seems to hit the triceps primarily and the upper back secondarily rather than the other way around so rather than using it as an alternative to exercise 16 I do it in addition and use it as the final back exercise. You can do this or just select the one you like best.

Stand inclined slightly forward from the ankles so the weight is in the toes and hold the dumbbells palms in with elbows bent (fig 31)

fig 31

Straighten the arms, extending them behind you, keeping the dumbbells in the same grip and lean forward slightly with straight locked legs. There should be a straight line between the heels and the back of the head. (fig 32)

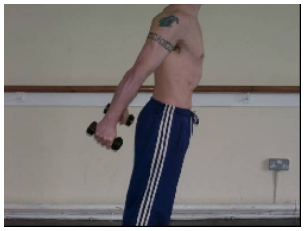


fig 32

Hold the position for a second and contract the muscles of the triceps and upper back. Do between fifteen and twenty reps.

You've now finished the back exercises. Put the dumbbells down for a few seconds and relax the back muscles.

Move on to the leg exercises.

Exercise 17.

Calf Raises

Stand with feet shoulder width and toes pointing forwards, dumbbells held by the sides and then raise up as high as possible on the toes. Strongly contract the calf muscles at the top of the movement (fig 33)

fig 33

When you come down allow the knees to bend slightly and contract the muscles in the front of the shin fig 34) This way when you raise back up you will tend to engage the large soleus muscles as well as the gastrocnemius and you will also target the tibialis anterior and the extensors in the shin.

fig 34

As you get better at this you can repeat the exercise for a further twenty reps with the toes turned out to the sides at forty five degrees to hit the outer portion of the calves and then again with the toes pointed inward for another twenty to hit the inner portion.

fig 34a

fig 34b

Exercise 18.

Toe Raises

Stand straight and raise the toes so the weight is on the heels and you strongly engage all the muscles in the front of the calf and shin (fig 35)

fig 35

Keep the knees locked and repeat for twenty reps at first. As you increase the number of calf raises increase these as well so you do the same number.

Exercise 19.

Deep Knee Bends on Toes

The reason I refer to these as “deep knee bends” and not “squats” is partly because this is what they were referred to back at the time this routine was first popular and partly to differentiate this movement from the image we all have of the modern “squat” exercise.

Modern squats have us keeping the knees above the toes, leaning forward with a pronounced curve in the lower back and also only going low enough for the thighs to go parallel to the floor. This would involve the Gluteus Maximus (the buttocks) strongly and the traditional deep knee bend exercise hits the quadriceps of the thigh much more. It’s also much harder when done correctly and generates a high level of involvement in the muscles of the thighs and calves, which you can then actively increase and enhance with self-generated tension.

Stand straight with the dumbbells held by the sides and the weight raised up on the toes (fig 36)

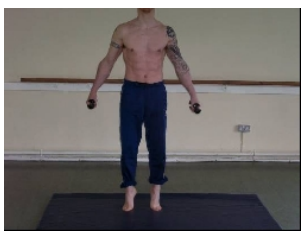


fig 36

Keeping the back straight and the pelvis in the neutral position, slowly lower yourself down so that your buttocks touch your raised heels (fig 37)

fig 37

Keep the calves contracted and sit on the heels for a moment before slowly straightening the legs back to the start position. On the way up, and particularly at the top when the legs lock out, contract the thighs strongly. Breathe out as you lower and in as you rise up. Repeat in a steady controlled fashion targeting the thigh muscles and calf muscles for initially fifteen or twenty reps and build up to forty or fifty reps over time. Don't rush your progress on this one - to do it correctly is actually quite difficult and you need to build up balance, co-ordination and range of movement in the hips and knees.

* Modern safe practice usually dictates that in squats the knees should never pass in front of the toes and people will quote this rule as a hard and fast one that should never be violated. The thing is it was formulated principally for squatting heavy weight which we are not doing here and think about it - every time you squat down on your toes to get something out of the fridge or to tie your kid's shoelaces you adopt this exact position. This is a perfectly normal position that the human body is designed to adopt easily. That said, be careful - if you are not personally used to adopting it and are unstable it may bother your knees. Go slowly and build up to it.

*** If you have knee issues and feel unhappy about this one - miss it out and do the following variation instead.**

Leg Exercise Variation.

Goblet Squats

Sandow included this heel down variation in his course with the slight difference that he held the dumbbells at the sides as in the previous exercise. I prefer to hold the dumbbells as shown - as if holding up a goblet and trying to keep it level and not spill the imaginary contents. This helps the alignment of the back, stops you leaning forward and helps the weight fall directly between the feet.

In this movement - even though you should still aim for a full deep squat - the knees do not pass over the toes. This move also hits the thighs strongly but will hit the gluteus muscles of the buttocks as well.

Stand with feet shoulder width apart, feet flat and pointing slightly out to the sides. Hold both dumbbells as shown (fig 38)

fig 38

Slowly squat down so that buttocks come close to heels. Look up and try to keep the back vertical and head straight (fig 39) - imagining the dumbbells are a goblet full of liquid you need to keep level will help with this. Breathe out as you lower and in as you rise up again.

fig 39

Do between fifteen and twenty reps at first and build up to forty or fifty reps over time.

If you can perform both versions do ten or fifteen of each and build up to twenty-five of each over time.

Even though you are squatting holding small weights most people would still regard these as body weight squats and therefore unable to build muscle or strength in your legs, however if they're done strictly with correct form and active contraction of the thighs at the top of each rep these are a LOT harder than you might think and will definitely build some size and strength in the legs.

Exercise 20.

Advanced Leg Exercise - One Legged Squat

This is actually very hard to do correctly. Build up to it over time. Some people can "just do it" and others can never do it no matter how hard they try - it's usually a matter of range of movement and technique rather than lack of strength for those that can't master it.

You can do it holding the dumbbells or without (actually, holding the dumbbells, although it technically makes the exercise slightly harder in terms of weight, helps you to balance and actually makes it easier in terms of performance)

Stand on one leg and extend the other leg to the front (fig 40)

fig 40

Slowly lower yourself down until you're sitting on your heel (fig 41) and then stand straight back up again, strongly contracting the thigh.

fig 41

You will only need to shoot for three or four reps on each leg. Professor Attila promised this exercise would add inches to your leg measurement.

To build up to this exercise there are several approaches - you can start by only going down as far as you are able and slowly getting deeper over time as you get stronger, you can do the exercise between two chairs holding onto them to support yourself, (fig 41a)

fig 41a

...or you can try a variation where you place one foot behind you on a chair and squat on the supporting leg so the knee of the bent leg touches the floor (fig 41b)

fig 41b

It really doesn't matter which variation you choose as we're just after the effect in the muscle - the extremely powerful contraction the movement produces which you will then learn to enhance consciously.

If you simply can't master the one legged squat, something else you can do to enhance the degree of tension your legs will feel in the two legged squatting exercises is to stress the action of one leg more than the other as you stand back up from the squat - in other words transfer your weight across more to one side so it's distributed between your feet say 70/30 and then stand up using the power of one leg more than the other and then alternate. Remember it's the feeling in the target muscles that's important not how we get that feeling - it doesn't matter how much weight you can hoist up in the

dumbbell movements, just how much tension you can rhythmically generate in the target muscles and it doesn't really matter if you can do a perfect one legged squat - just that you generate as much tension in the thighs as necessary to cause the right amount of muscle fatigue and pump.

If you can do the one legged squat don't do it instead of the two legged variety - do it at the end *in addition* to really finish off the thigh muscles and leave them thoroughly worked.

You've now finished the leg exercises. Shake the legs out and relax the muscles in them.

Exercise 21.

Straight Leg Sit-Ups

Again, modern safe exercise practice has decreed that straight-legged sit-ups are dangerous as they place too much strain on the lower back. The thing is if they place any strain at all on your lower back you aren't performing them correctly. You should simply be adopting the same position as you would if you were touching your toes - you should be bending easily at the hip not rounding only at the lumbar spine.

Because people have misunderstood this movement and injured themselves performing it incorrectly (jerking up, hinging the body in the wrong place and relying on momentum and the muscles of the back to make up for an inability to use the target muscles) a brilliant abdominal exercise has been abandoned by almost the entire exercise industry. Done correctly these and the following two exercises are phenomenal for building a tight abdominal wall and super strong core.

Lie flat with your arms stretched out above your head (fig 42)

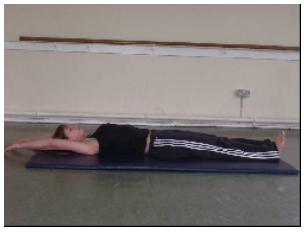


fig 42

Then slowly “peel” your upper body off the floor one vertebra at a time. As the head leaves the floor, tuck the chin into the chest, try to keep the arms in line with the ears and sit up reaching towards the toes (fig 43)

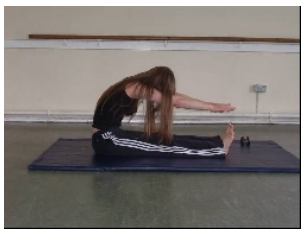


fig 43

The feet should not leave the floor and SHOULD NOT BE HELD DOWN. If when you try to sit up you can’t get off the floor and your feet lift up, you are not using the correct muscles in the correct sequence, or the correct biomechanics. Just jamming your feet under a piece of furniture would seem to be the answer but it isn’t - you would still be doing the movement wrong but now this incorrect movement will get you up because your feet are fastened down. Wrestling yourself up this way will cause you to engage the back muscles and bend your body in the wrong place.

Instead try to engage the deep muscles of the transverse abdominis by doing something they call “zipping and hollowing” in Pilates - engage and pull up the pelvic floor muscles and simultaneously pull the belly button in towards the spine. Pull the lower stomach in - the bit directly below the waistband of your trousers and power the sit up from there. This will stabilise your core and protect your lower back - it will also enable you to sit up using the correct muscles.

Don’t worry about actually touching your toes as you reach forward unless you can touch them easily and without strain in a toe touching movement while standing. Just make sure you bend from the hips and end up sitting on the “sit bones”. Breathe in on the way up and then as you exhale, lower yourself down to the start position slowly - unfurling one vertebra at a time until you’re lying flat again.

Do this at first without the dumbbells until you can do twenty or twenty-five perfect reps and then try it with the dumbbells in hand and build back up to the same numbers. Adding the light dumbbells in your outstretched hands alters the leverage and makes it an even more challenging movement. Twenty or twenty five in a set is still plenty though - you won't need (or be able) to pump off hundreds.

Exercise 22.

Leg Raises

Lie flat with your hands palm down on the floor next to your hips (fig 44)

fig 44

Engage the transverse abdominis as before, raising the head and tucking the chin, pull in the lower stomach and pull up the pelvic floor, stabilising your trunk internally and bracing your mid section before raising your legs all the way up and then over to try and touch the floor behind your head (fig 45)

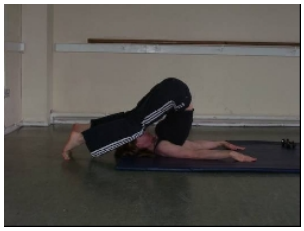


fig 45

Slowly lower back to the start and repeat ten - twenty times.

You can help out at first by stabilising with your hands and pressing against the floor with the palms. Later when you master this move you can begin with your hands extended above the head holding the dumbbells and as you raise the legs, pull the dumbbells to your

chest simultaneously. This advanced version is truly a whole body exercise and will give a tremendous contraction in all the abdominal muscles from the deep transverse abs to the more visible rectus abdominis.

That's it for the abdominals - only about thirty -forty movements. People are often surprised when they ask me about my "abdominal routine" and I tell them this is it. They are expecting to hear about hundreds of reps of different types of crunches and "abercizer" machines but I don't do those types of ab exercise and now just swear by these two simple moves.

It's been my experience that crunches tend to "bunch out" the abdominal muscles while these exercises seem to pull it in and give me a sense of a tight and solid core.

Honestly - if you put the time in to master these two exercises they are phenomenally effective but if you think these exercises are outdated and are still dubious about swapping your crunches for these antiquated moves don't - just replace exercise 21 and 22 with crunches or bent leg sit-ups or whatever abdominal exercise you prefer.

Exercise 23.

Hyperextensions

Lie on your stomach on the floor and place your hands in the small of your back (fig 46)

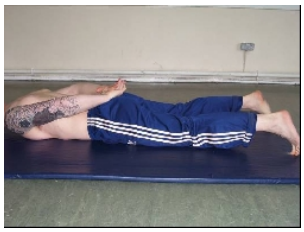


fig 46

Lift your chin away from the floor and raise your torso as high as possible by engaging all the muscles of the back line (fig 47) repeat ten to fifteen times

fig 47

Keep the toes on the floor throughout - raising the legs and head simultaneously tends to make you rely on the glutes and leg muscles in this one. Try to only use the leg muscles to stabilise you and rely on a powerful contraction of the lower back muscles to raise the trunk.

Exercise 24.

Push-Ups

I have called this classic exercise a “push up” as opposed to a “press up”, as it’s more often referred to in the UK, because I want to avoid people thinking of it as a “pressing” movement and therefore similar to the movement involved in weightlifting’s bench press.

Everyone is familiar with this exercise and will probably be surprised to see a detailed description on how to do it correctly that spans several pages. The thing is the way we do it today is radically different to how the Physical Culturists of the late nineteenth Century did it.

Sandow, Attila, Treloar, Strongfort and Moss all included this exercise in their courses as did many others but none of them called it the push up or press up. Mostly they didn’t call it anything at all and just described the movement or if they did give it a name they referred to the exercise a “dipping” or “floor Dips”.

Interestingly, Attila recommended ten reps, Treloar ten to twenty-five reps and Sandow said do as many as possible in his book but in his guidelines for numbers in the chart at the end he recommends starting at three! Furthermore all of them describe the exercise as being a movement designed to target the serratus muscles, the latissimus dorsi of the back and the triceps with the pectorals involved secondarily .

Today we routinely do press-ups in sets of thirty, fifty or one hundred and everyone will tell you they are predominantly a chest exercise with secondary involvement of the deltoids (mainly front deltoids) and triceps. These old fashioned guys are telling us press-ups are for the back, the sides and the triceps and we should only do three or ten or twenty?!!! Clearly they were all ridiculously weak and didn't know what they were talking about - OR WE'RE TALKING ABOUT A TOTALLY DIFFERENT EXERSCISE THAN THE ONE WE'RE FAMILIAR WITH TODAY.

Back in the 1890s - 1900s the bench press was not even a movement that had been popularised among weightlifters. Now it's so ubiquitous that we look at a press up as just an inferior bodyweight version of the bench press and an exercise that will target the same muscles - chest, shoulders, and arms.

The exercise described here, as a "Push up" is different. It will hit the muscles of the back, the side ribs and the triceps first and foremost and the chest secondarily. You will enhance the effect on the target muscles with self-generated muscular contraction and use slight adjustments of leverage and position to make the exercise harder. When done properly sets of between ten and thirty reps should be *very* challenging.

Support yourself on your palms with body held perfectly straight, core engaged in the same way as during the sit-ups and most importantly the shoulders back and down with the shoulder blades flat . Keep the head in line with the spine and the eyes looking down at the floor. Every muscle in the body should be alive and engaged (fig 48)

fig 48 **CORRECT**

Do not incline the head upwards, hollow the chest and round the back, pushing the shoulders forward out of

position (fig 49)

fig 49 **INCORRECT**

Do not lock the arms and then allow the weight to “sit” in them passively winging out the scapula in the back. (fig 49a)

fig 49a **INCORRECT**

Slowly lower your perfectly straight body down towards the floor keeping the back flat . Strongly engage the muscles in the back and triceps and feel like you’re pulling the floor towards you actively instead of passively dropping into the lower position. Hold for a split second at the bottom (fig 50)

fig 50

Push back to the top position strongly contracting the triceps, the serratus muscles over the ribs and the muscles of the back as you push the floor away from you. The pectoral muscles will of course be strongly involved but don’t stress their action, as this will cause you to round the back and over extend the shoulders as in (fig 49) concentrate instead on the muscles of the back and triceps and on holding exactly the right posture. KEEP

THE SCAPULAE IN THEIR NATURAL POSITION AND AVOID BOTH LATERAL ROTATION AND WINGING.

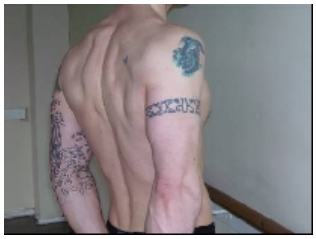
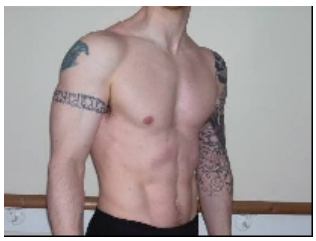
Make sure the weight is in the palms and only slightly in the toes - get as much of the body weight into the arms as possible by pushing forward slightly off the toes and as you get better at the exercise try taking your nose further forward with each rep.

To make the exercise harder still you can raise one leg and keep it raised and perfectly straight throughout the exercise.

Do the exercise at a slow and even cadence of about one and a half seconds down and one and a half seconds up, breathing out on the way down and in on the way up (as in the sit-ups the breathing pattern is counter intuitive and opposite to what many feel is normal today based on the action of exhaling as you press a heavy weight)

In the most advanced version you can lower yourself as normal then transfer 70 percent of your weight into one arm so that as you push up that arm does most of the work. Even out the weight again at the top and lower then shift most of the weight into the other arm and push up again with that arm taking most of the strain. Alternate at the same cadence for up to twenty reps or so. This is easier than a one armed press up but much more challenging than the normal version - it allows you to approach the level of tension and muscle involvement you might get from a one armed press up but you can do more and keep going for longer thus increasing the muscle's time under tension.

You have now finished all the exercises - stand up and shake out your muscles. Relax everything then run through the body alternately tensing and relaxing each body part, arms, shoulders, back, chest, legs etc...then tense the entire body and relax it a few times. Don't hold the breath while tensing and controlling the muscles - try to breath normally and don't hold these tensed positions for any protracted length of time, a few seconds for each contraction is fine.


Once you are familiar with all the exercises you should be able to do the whole routine in between fifteen and twenty minutes. When your repetitions are up to the required numbers, your strength has increased and you've memorised and understood all the instructions it should still be able to be completed in under half an hour.

Quick List Of Exercises

1. **Alternating Dumbbell Curls**
2. **Alternating Reverse Dumbbell Curls**
3. **Alternating Crucifix Dumbbell Curls**
4. **Simultaneous Crucifix Dumbbell Curls**
5. **Standing Dumbbell Pectoral Fly's**
6. **Alternating Dumbbell Presses**
7. **Alternating Dumbbell Front Raises**
8. **Simultaneous Arm Circles**
9. **Dumbbell Wrist Circles 1 (Clockwise)**
10. **Dumbbell Wrist Circles 2 (Anti-clockwise)**
11. **Dumbbell Punching Movement**
12. **Dumbbell Good Morning Deadlift**
13. **Dumbbell Shrugs**
14. **Dumbbell Crossovers**
15. **Dumbbell Side Bends**
16. **Simultaneous Dumbbell Back Extensions**
17. **Calf Raises**
18. **Toe Raises**
19. **Deep Knee Bend On Toes**
20. **One Legged Squat**
21. **Straight Legged Sit-Ups**
22. **Leg Raises**
23. **Hyperextensions**
24. **Push-Ups**

Additional Exercises:

- **Additional Exercises:**
- **Alternative Shoulder exercise 1**
- **Alternative Shoulder exercise 2**
- **Ski Jumper**
- **Goblet squat**

W hich Dumbbells To Use?

In terms of the actual weight of the dumbbells, as stated earlier in the W.A.T.C.H protocol section, initially you want to use a set of dumbbells that are just heavy enough to help you generate a strong focused muscular contraction over the suggested rep range for each exercise and no heavier.

The most important thing is that you learn to fully control all the muscles and gain the ability to consciously recruit as many muscle fibres as strongly as possible when you contract them deliberately and rhythmically. It just so happens that the best weight to help you do this is one that's just about heavy enough to allow you to feel it's weight in the working muscle and yet light enough so that you can consciously enhance that slight contraction strongly without injuring yourself by tearing muscle fibres or over stressing your tendons.

The old advice on this seems to be the best - between two and three pounds for the average woman and three to five pounds for the average man. If you do the exercises correctly five pounds should be enough for anyone for quite some time although if you are six foot five and two hundred and forty pounds and proportionately very strong to start with maybe we could extend it and say five to seven pounds for you.

Personally I started with three-pound dumbbells. I could easily have done the exercises with five-pound dumbbells right off the bat but I was doing an experiment into the possible efficacy of this weird old light dumbbell routine and I wanted to see just what could be achieved with the lightest ones possible for me. I had read all the books in the history section and strongly suspected the exercises represented an approach to body development that was based on an entirely different paradigm to modern training methods.

I'm glad I spent the first month or six weeks experimenting with the three-pound dumbbells as it taught me how to really do the exercises properly -

relying on what I was consciously “doing” with my muscles to generate the effects rather than just performing them mechanically and relying on the weight to cause a certain level of tension within the muscle. I found that by doing this you could squeeze a surprising amount of muscle stimulus from an insignificant weight.

I increased my neurological control over my muscles very noticeably relatively quickly and actually saw visible results in terms of improved definition, muscle shape and muscle density in only about three weeks. The biggest and most surprising effect was how the muscles “felt” subjectively as I went about my day - I was suddenly very conscious of my musculature but not because it felt big or cumbersome, it actually felt sort of alive and very, very responsive. Actually it felt great and even if I’d had no further results I would have continued with the exercises just for these initial benefits.

After a month to six weeks I had got the hang of all the exercises and was doing one hundred reps in some of them (exercise 1) around sixty in others (exercise 2 & 6) and thirty or forty in others (exercise 7). By this time I noticed a measurable increase in size in the muscles of my arms and shoulders and pronounced improvement in the definition of my back.

I then switched to five-pound dumbbells and noticed a very surprising thing - this tiny incremental increase in weight made a massive difference. I could now reach the same feeling of “ache” and momentary failure much earlier in each exercise (say at 60 reps in exercise 1, 30 reps in exercise 2 and 6 and only twenty or so in exercise 7) This was because I was trying to perform the movements with the same level of strong conscious muscular involvement on each rep that I had learned with the three pound weights. I was putting the same amount of internal effort in against a slightly increased stimulus.

I strongly believe that if I’d started with the five-pound weights I’d have shot for the recommended rep range and achieved them easily but at the expense of fully

engaging my muscles. I would have *thought* I was fully engaging them but I wouldn't have been.

Let me put it another way - the numbers are just a rough suggestion. If you get caught up in being able to do a hundred of these or a fifty of those you will probably miss out on a lot of the benefits - of course you will be able to do a hundred, the dumbbells only weigh a few pounds! - instead think of it as trying to repeat a movement perfectly as many times as possible while completely involving (contracting and then relaxing) the working muscles. This complete involvement of the muscle in the action is all that matters.

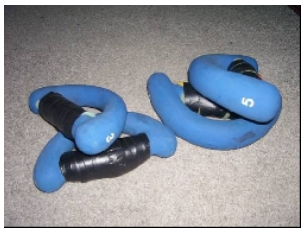
When I did this with three pounds I found I eventually reached the point where I couldn't do any more of the first exercise at about a hundred (ish) reps so that was a good weight for me to start with. Had I started with the fives and used proper total muscular contractions on each rep I *should* have reached the same point at only fifty or sixty reps *but I didn't really know how to do that yet* - I would probably have only contracted the muscles enough for me to grind out a hundred reps (because that was the number Attila recommended) and then assumed that was the right amount of muscular involvement to adopt for the rest of the routine, never suspecting that I could have been recruiting more muscle fibres with every rep.

In short, don't be afraid to start with three pounds or even two pounds if you're smaller in stature until you really get the hang of the exercises and move up to four or five pounds as you go. The biggest mistake you could make would be to think - "there's not much difference between three pounds and five pounds - I might as well go for the fives" or even "I'm pretty strong already I'll just do it with these ten pound ones".

In terms of the *type* of dumbbells you should use it doesn't really matter. Absolutely any type of cheap easily available dumbbell will do - don't go mad buying equipment. You could even use a couple of bricks or any other suitably weighted, evenly balanced objects if you don't have dumbbells and want to try out the exercises

for a bit before you shell out for some, it really doesn't matter. The effects will come from YOU not the weights. The dumbbells are just a tool to help you.

That said it helps if the dumbbells have thick handles - this facilitates a better grip and helps you to contract the muscles properly. I started with these:



I used these purely because we had them lying around the house (the three pound ones were my girlfriend's and the five's were mine. I had bought them some years previously to do punching exercises with and had never considered actually doing anything as insane as using them for curls, presses and raises). These aren't even shaped like traditional dumbbells and the handles were too thin and hard to squeeze properly so as you can see I wrapped them in sponge and tape to give me something to grip.

This adaptation helped a lot and if you only have dumbbells with thin hard handles I highly recommend it. If you're buying your dumbbells specially for these exercises it's worth noting that a lot of the lighter ones designed mainly for "toning" purposes and aimed at women are now covered in sponge. These are great because they allow exactly the right kind of "squeeze" in the grip.

This brings us on to the Sandow "spring grip Dumbbells". If you read Sandow's second book it's very clear that these were designed as a remedial device to help people get the hang of doing the exercises properly. Often writers (who've obviously never picked up a set) talk about how they were for training a powerful grip "while pumping up the biceps slightly" nothing could be further from the truth.

Reading through the books, I strongly suspected that these sprung dumbbells were merely a device to help

engage the muscles correctly and that the springs would not be particularly powerful. I searched out a pair (I eventually found two sets) and it turned out I was right. With just the basic two springs in they are easy to close and keep closed and really help focus the mind on which muscles are working in each movement. Once you have this sense of the muscles action you can add more springs incrementally and thus increase the intensity of that involvement. With all the springs in (especially in the seven spring set) it's really quite challenging and it does feel like you're manipulating much heavier weights.

Some of my Sandow dumbbells, one hundred years old and still going strong:

So do you need a set of spring grip dumbbells to do these exercises? NO absolutely not. Although they are a nice idea there are several downsides. They only weigh three pounds and although you can increase the number of springs I've found that after a while the forearms and the grip are benefiting more from the increase in resistance that the target muscles. I trained with mine for about a year going from two springs up to seven but after a while I went back to the five-pound ordinary dumbbells because I preferred the feel that gave me.

If you happen to find a set of antique Sandow dumbbells and you want to try them for the exercises by all means do so but don't feel you NEED them. Remember they were only originally for people who couldn't get the hang of the exercises relying on their own mind and body.

If however you do find you have difficulty doing this - if you have such poor control over your muscles that you simply cannot make them contract unless they are fighting against a great resistance - you might want to

construct your own remedial device along the same lines as Sandow:


This is something I made in about ten minutes - tape pieces of wire coat hanger to one handle of a cheap plastic grip device then attach a 1-kilo weight disc to each end and fold the ends over to keep the disc on. There you have a rough and ready Sandow dumbbell. You need to use the weakest grip exercisers you can find (which kind of proves that the Sandow dumbbells were not intended primarily as grippers) as if the resistance is too strong your grip will tire before the target muscles do.

If you really can't get the hang of the type of muscle involvement I'm talking about it might be worth knocking something like this together - or even going through the movements with just a pair of light plastic grippers in your hands instead of dumbbells - just until you get the hang of tensing the working muscles fully in each movement, and then go back to normal dumbbells.

Actually the modern "soft" foam covered dumbbells are just as good as a set of Sandow Grip dumbbells - the only difference being it's still up to you to generate the appropriate level of tension whereas with his remedial device one just made sure it was squeezed shut and the right amount of tension was calibrated for you.

So in short just get an ordinary set of 2-3 pound dumbbells or 3-5 pound dumbbells. If they've got thick handles or squeezable foam handles this will help. If you struggle initially to get the right feel you can experiment with a pair of light, easy to close plastic grippers in the exercises then go back to ordinary dumbbells as soon as you "get it".

W hat Sort Of Results Can I Expect?

All the old-school Physical Culturists that recommended this type of training promised that it would “develop every muscle in the body” or else “bring the musculature to perfect development” or they claimed - “the biceps are enlarged and the muscles of the arms, chest, neck back and legs are strengthened and made serviceable” and swore “these exercises make muscle and their practice will maintain that muscular standard”.

They talked about a balanced muscular development and a body that had all the muscles brought to a “high degree of condition”. All these terms are radically different to the ones we use today to describe somebody with what we might think of as a good body.

Now people are “ripped”, “in good shape” “Jacked” or God forbid “buff”. I even saw a clip from a reality show recently were a girl said she like her boyfriends to look “juiced”. God help us all.

The fact is that today there is a certain type of physique that has become the “standard” look. You might see a lightly developed version of this physique on an actor or fitness model, a more heavily muscled version on an athlete, a hugely muscled version on a natural body builder and a grotesquely exaggerated version of it on a professional bodybuilder dosed up with steroids and growth hormone.

This standard physique itself is seen, to some degree, in all these cases in terms of the proportions of certain muscles in relation to others. Muscular bodies today tend to exhibit V shaped torsos thanks to development of the latissimus dorsi, large pectoral muscles from exercises such as the flat, incline and decline bench press and large biceps and triceps.

Certain muscles are considered to be more difficult to develop than others and so often we see people who have obviously spent a lot of time doing curls for their biceps

and lots of heavy benching exhibiting big arms and pendulous pectorals but not much in the way of deltoids (supposedly one of the more difficult muscles to really bring out).

You have to realise that far from it being the case that you just throw any old exercise at a human body and it comes out “fully developed” in exactly the same way every time - as if there’s some default condition of full human muscular development that the modern look epitomises - *how* the body actually develops depends entirely on what you do to it.

The modern look has resulted from a universally accepted paradigm that sees people exercise with progressive heavy resistance in certain popular modern exercises such as the heavy barbell squat, bench press, barbell and dumbbell rowing exercises and dumbbell fly’s.

Sandow V Schwarzenegger (obviously chemical assistance comes into the equation here too)

If you look at the strongmen of old pictured earlier in this book, although they are all impressively built, they simply don’t look the same in terms of the type of physiques they developed, as modern trainers. Their bodies all have several features in common though, and they share these features with much of the statuary and imagery of muscular bodies from the ancient world.

The features these men and the classic statues seem to share are - a very defined and sinewy look with a decent but not excessive amount of size, they tend to have

defined but “flat” chests by modern standards, athletic but not massive legs and well developed arms that have size and definition but are still in proportion. They all have unusually large round deltoids, a very well developed back and abdominal muscles that include solidly developed external obliques at the sides.

These old-time strongmen are all back, shoulders and arms with athletic, defined torsos while today’s muscular aesthetic seems to turn out people who are all chest and arms with tiny waists and big thighs and glutes. This is entirely down to the type of exercises adopted. The bench press and heavy squat especially where not popular exercises then and there was much more emphasis on single handed lifting which calls into play the deltoid as a powerful stabiliser. People who notice it usually give this as the reason for the difference in development but I think there may be another additional reason.

Training in the classic light dumbbell routine popularised by Attila and used in a similar form earlier by Triat (influenced by the training of the Ancient Greeks) seems to develop *exactly* this classic type of physique.

As you might realise from looking at the sequence of exercises, you are at first strongly contracting the arm muscles but the deltoids are secondarily involved in some of these exercises, then you move on to the shoulders where the deltoids are involved primarily when they are already pre-tired and then onto the back where again the deltoids are involved secondarily as are the triceps.

Because you are constantly gripping the dumbbells, the arms and particularly the deltoids get a lot of work and it is a particular type of work that facilitates a greater and greater conscious neurological recruitment of muscle fibres as you get better at it. The back muscles get a tremendous amount of stimulation once you get the hang of the movements as do the core and the low back and external obliques but the chest and legs get much less attention than they do in a modern routine and end up hard and defined rather than massive. I think this light

dumbbell routine and the W.A.T.C.H protocol way of training leads to a physique that resembles that typical old fashioned look.

It also seems to me that the muscles that develop most from any exercise are the ones we have the best neuromuscular control over - the ones in which we can recruit the most muscle fibres either consciously or unconsciously. Try to tense "on and off" certain muscles without relying on a mechanical movement to do it - in other words we can all tense our bicep by adopting the typical "look at these guns" type pose but try to strongly contract your muscles without adopting any special position at all; just sitting there reading this, try to tense the bicep, the triceps or the deltoid. Try it with your chest muscles, thigh muscles or buttocks.

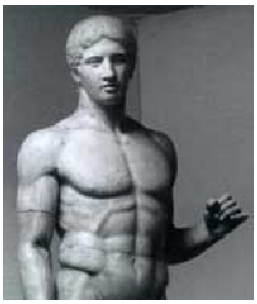
Try to harden these muscles or twitch them quickly on and off WITHOUT INVOLVING THE OTHER MUSCLES NEARBY. I'm willing to bet that most of you find it do-able with some muscles and nearly impossible with others. I'm suggesting that the muscles you can do it with have better neurological communication networks established through ordinary day to day use and that without bringing your other muscles up to or even past that level, if you just take up some mechanical exercise those muscles that you have better natural control over would respond much better than the ones you can't control at all.

I'll go you one further and bet that most of you can twitch the Gluteus (buttock) muscles, the pectoral muscles in the chest and then the bicep to some degree but that you can't separate the tensing of the bicep and triceps. I bet you find it much more difficult if not impossible to twitch the muscles of the deltoid without involving the rest of the arm or the chest, or to tense the muscles in the lower back over the kidneys at all.

The muscles that respond best to bodybuilding style exercises in most people are those very ones that most people have decent neurological control over and the ones that are notoriously difficult to develop are the very ones most of us have poor neurological communication

with - the deltoids, lower back, the calves in some people etc...

What the light dumbbell exercises do is to bring your neurological communication with ALL your muscles up to a high degree and then they particularly concentrate on the deltoids, arms and back, bringing a type of muscular development most similar in size and proportion to the classical ideal seen in statues like this:

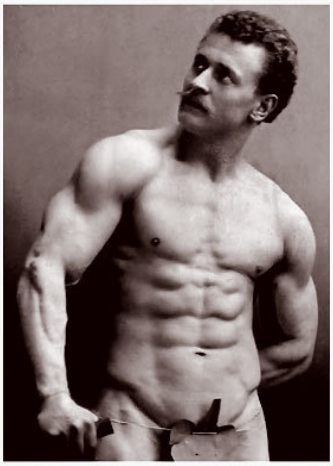


Doryphoros The Spear Carrier

Or this:

I know...he would have definitely benefited from a flattering fig leaf

Compare this type of development to these pictures of Sandow in his muscular prime:



In the bottom picture you can even see that Sandow is holding an object in his right hand that he's squeezing like one of his spring grip dumbbells to give him a focus for tensing his muscles and this is something else that warrants a mention. Nowadays people expect muscles gained from hard work in the gym to "be there all the time" as it were.

Despite the fact that most photographs showing fitness models on the covers of Men's Health etc...are taken after the model has dieted and dehydrated for a day or two, "pumped up" with a set of press ups and are then digitally enhanced (photo shopped to death in many cases - sometimes resulting in arrangements of abdominal muscles never seen on humans before), people tend to expect to develop muscles and then walk about with them permanently in evidence. This has led to people with permanent ridges of muscle poking out

from beneath their clothes and the classic “I’m carrying an invisible roll of carpet under each arm” look.

In Sandow’s day much was made of a strong man’s ability to look perfectly normal in his clothes. When his muscles were on show but relaxed or “in repose” they were supposed to look smooth and toned but a normal size. When he flexed them they were then expected to “pop out” and transform into a rock hard representation of the classic ideal. A performer’s ability to affect this astonishing transformation was kind of the whole point.

Their complete control of their musculature from soft to hard and rippling, via all stages in between, and their resemblance to the perfectly proportioned and balanced physiques of old was what people wanted to see.

Consequently when people see old photographs of these men they tend to assume they’re just standing there rather than “actively displaying” certain muscles and that they would look like that the whole time. In the photo’s above for instance Sandow is purposely relaxed in the chest, abs and legs in the first one while he’s deliberately displaying the deltoids and in the second photo he is strongly contracting all the muscles of his torso simultaneously.

So if you are after a heavy thigh and hip development and you want your pectoral muscles to be so permanently big and round that you might well need a bra - these exercises are probably not for you.

If on the other hand you like the look of the kind of muscular development and the proportions that the old Physical culturists and their pupils embodied, then that *type* of physique can be developed in between three and six months working with the light dumbbells. You would have made visible improvements in four or six weeks and measurable progress towards that goal in about three months.

Nowadays people are concerned with the size of their muscles first and foremost. Measurements are boasted about and routinely promised by various approaches that

far outstrip the measurements of the men from the 19th and early 20th Century we have been hearing about.

Obviously size was a factor in the impressiveness of their physiques but they really weren't massive and the people who emulated them didn't want to be massive either - they wanted a perfectly developed, balanced and impressive physique not a huge one.

Your muscles *will* increase in size training like this but if it's enormous arms and pendulous chests your after forget it. Lets face it though, serious bodybuilders aren't going to be reading this book and if they do they will not be interested in what the W.A.T.C.H protocol with light dumbbells can give them.

What I think this style of training *can* do is develop exactly the right amount of muscular size and mass for your particular frame and give you a defined and strong look. That said the amount of muscle growth the light dumbbells can deliver - particularly in the arms and shoulders - may surprise you.

Reading numerous fitness forums to research this ebook I came across posts from people training in modern bodybuilding methods who said they just wanted a body like Brad Pitt in "Fight club" or Daniel Craig as Bond or some other similarly built actor and not a truly "big" bodybuilding type of physique at all, yet they were often following taxing, heavy weight training routines to try to realise this goal.

I firmly believe that for people with these types of aspirations the W.A.T.C.H Protocol with the light dumbbell routine popularised by Professor Attila would deliver exactly what they were after and do it in return for twenty to thirty minutes a day in their own homes - no gym membership necessary, no supplements, no need for complicated exercise routines.

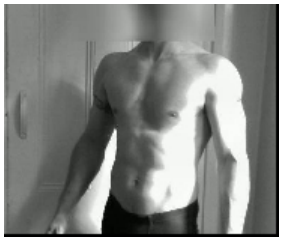
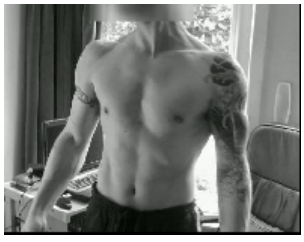
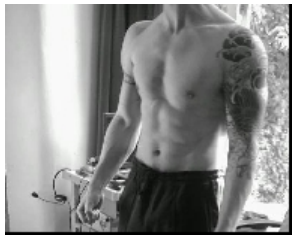
For women interested in the kind of lean defined "fit" look recently displayed by Cameron Diaz and some of the actresses who spent five seasons running around Hawaii in vest tops in "Lost" - again this routine would meet their needs admirably.

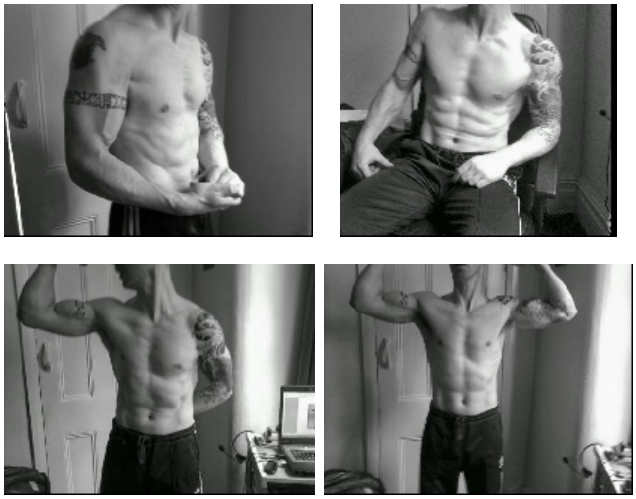
When I was putting this book together I initially intended to only include photographs of old time strongmen to illustrate it and I was thinking of using some of the old photographs from the books already mentioned to illustrate the exercises.

I had no desire to have photographs of my own physique in it or to put those photographs on the Internet where they would be open to all sorts of criticism and ridicule (show me someone who's spent ten minutes reading Youtube comments who hasn't subsequently lost all faith in the future of humanity. *Anything* posted on the Internet is immediately subjected to criticism and ridicule).

Then I thought, hang on - if I was *reading* this book and the author was making all these claims about how effective this old fashioned approach is at developing muscles and giving you an improved physique I'd probably want to see some more evidence than hundred and fifty year old photos of people he claims trained with it. If he were saying he'd had some success training in this way himself I'd want to see photos of *him* rather than just take his word for it.

It was for this reason that I decided (reluctantly) to pose for the photographs illustrating the exercises and for these:



Rather than try to produce impressive looking, professionally lit Men's Health style pictures (for which I have no resources) I thought I'd go for the type of shots on **page 31** that were included in "The Construction and Reconstruction of the Human Body" - which look like clinical photographs from a medical dictionary, are in black and white and crucially, don't include the face of the subject!

Now, I am not claiming to have developed a body that is anything particularly special and I'm fully aware that my measurements are not impressive to anyone concerned with measurements - but these are the results I've had training with the light dumbbell exercises with 3 pound and five pound dumbbells over the last three years or so and I am happy with them. If these results look unimpressive to you and wouldn't satisfy your own goals in terms of what you want to achieve then fair enough.

I am NOT a body builder or a serious weight trainer and have no desire to become one. I am just someone who would prefer to look "in shape" than out of shape and who is prepared to spend only about half an hour a day exercising at home to achieve that. I've got everything out of the light dumbbell exercises that the originators promised they would deliver.

I am 44 years old and started using this training protocol three years ago at 41 just to see what would happen. I don't follow any particular muscle building diet (although I eat healthily) and don't take any supplements whatsoever. The results I've had, while nothing

astonishing in terms of what I could have achieved in the same period if I'd taken up heavy weight training or bodybuilding, are **MUCH BETTER THAN I HAD ANTICIPATED AND SEEM OUT OF ALL PROPORTION TO THE AMOUNT OF TIME AND EFFORT I HAVE HAD TO PUT IN**

The photographs illustrating the exercises were taken on a five-mega pixel digital camera in natural light with no attempts whatsoever made to make them more flattering or enhance anything. The above shots and the one on the cover of this book were taken on my girlfriend's old 3 mega-pixel camera phone! I have no tan, several tattoos (one of which is half finished), I hate having my photograph taken and my girlfriend is not a talented photographer to say the least. They are only included here to honestly show the results I have had from using these exercises.

I'm well aware that by including these photographs in the book at all I'm leaving myself open to inevitable criticism. In fact it is a dead cert that these pictures of my results with this method will probably elicit the following responses:

1. <u>From the massively muscled bodybuilding crowd</u> - "Ha Ha! That skinny guy is tiny and looks like he has never trained a day in his life. You can tell he only lifts five-pound weights; my sister has bigger muscles LOL! - He needs to start squatting heavy and get on a cycle of (insert favourite androgen here)…etc etc"
2. <u>The slightly more measured</u> - "Well he has had *some* results but he would have had much better results if he'd trained with decent weights and eaten more etc…"
3. <u>The reasonable</u> - "He makes a good case for this approach to training and his results are pretty good for such a minimal amount of exercise with light weights. Maybe there's something to it?

4. The negative - “There’s no way he got those results with five-pound weights!”
5. All the way to the ludicrous - “There’s no way you can look like that at 44 without chemical help!”

Yes, the exact same photographs will no doubt elicit all those separate and contradictory responses simultaneously and there’s absolutely nothing I can do about that. To the people who think like number 1. - this book isn’t for you, please move along. The people who think like number 2. - this is probably true but I am not interested in doing that, I just wanted a quick way to work out with no hassle in my own home and I have no particular desire to be any bigger.

For the people who think like number 3. - this book *is* for you, try the exercises yourself and see what happens. Maybe you can outstrip my results using the method?

For the people who think like 4&5 - yes I did and yes you can. I’ve just given you detailed instructions about how to go about doing the same thing but if you refuse to accept that’s even possible I can’t help you.

Even though I’m not interested in getting “big” per se and am more concerned with having a balanced looking musculature, the measurements I have achieved - although small by a modern bodybuilder’s reckoning - are not bad when you look at them from another perspective.

In an article written in 1938 by George Russell Weaver for the Superman Magazine (You can find this on the sandow. plus website) the subject of Sandow’s physique and measurements was discussed. The author used the measurements that where included in Sandow’s first book that were taken in front of witnesses by the eminent Physician Dr Dudley Sergeant in 1893 when Sandow was 26 years old - about the time of the above two photos of him.

According to the good Doctor, Sandow was five feet nine inches tall and weighed 180 pounds at the time. His measurements are given as:

Wrist - 7.3 inches (the average of both wrists)
Forearms - 13.2 inches (again the average of both)
Biceps - 16.5 inches (the average of both)
Neck - 16.5 inches
Shoulders - 20.3 inches (measured with callipers)
Chest - 44.1 inches (normal)
Chest - 46.9 inches (expanded)
Waist - 32.7 inches
Hips - 38 inches
Thighs - 23 inches (average of both)
Calves - 15.5 inches (average of both)

Hmm. Not so big. Even Sandow's measurements would get him laughed off most modern weight training/ bodybuilding and fitness forums where every other poster claims arms at least 17 inches around and often 19 or 20 inches. In his later books he claimed *much* bigger measurements than these and it's those bigger ones that are usually quoted for him when he's discussed on these sites. It is certainly possible that he did continue to make progress and that he was a lot bigger in his thirties than in his mid twenties but this is the period of his great fame on the stage and it was only shortly before those brilliant photos of him that appeared in his first book were taken.

The author goes on to talk about a man's skeletal structure and how this bony scaffolding and his particular arrangement of muscle attachments will limit the muscular development he can ultimately attain, no matter how much training he does, (this is what is now referred to in bodybuilding discussions as one's genetics as in "I'll never get 19 inch arms with my genetics") and he points out that while not everyone has the potential to equal Sandow's actual measurements, we can all shoot for his exact *proportions* instead.

He then provides a chart by which we can all convert our wrist measurement (a good indicator of overall skeletal structure) into what overall measurements would give us a development with the same *proportions* as Sandow for

our own particular frame. Here is the chart so you can do the maths for yourself if you like - it's quite an eye opener. All you have to do is measure your wrist below that knobbly bone on the outside, on the hand side.

Your wrist x 1.000 = wrist measurement
Your wrist x 1.833 = Forearm measurement
Your wrist x 2.292 = Biceps measurement
Your wrist x 2.292 = Neck measurement
Your wrist x 2.819 = Shoulders (with callipers)
Your wrist x 6.125 = Chest measurement
Your wrist x 4.542 = Waist measurement
Your wrist x 5.278 = Hips measurement
Your wrist x 3.194 = thigh measurement
Your wrist x 2.153 = Calf measurement

I'm the same height as Sandow was but I'm 18 pounds lighter and have a smaller skeletal frame with the average measurement of my two wrists coming out at only 6.86 inches around. Lets round that up to 6.9 which would make my Sandowesque measurements:

Sandow's 1893 proportions adjusted for my 6.9-inch wrist:

Forearm = 12.7 inches
Bicep = 15.8 inches
Neck = 15.8 inches
Shoulders = 19.45 inches
Chest = 42.3 inches
Waist = 31.3 inches
Hips = 36.4 inches
Thigh = 22.0 inches
Calf = 14.8 inches

My actual measurements (cold) are:

Forearm = 13 inches
Bicep = 15.3 inches
Neck = 15.5 inches
Shoulders = 18.9 inches
Chest = 42.2 inches
Waist = 31 inches
Hips = 36.7 inches

Thigh = 22.3 inches
Calf = 14.5 inches

So after exercising with a routine that Sandow sold as one that would give pupils a physique *like* his and which Professor Attila claimed was entirely responsible for Sandow's own physique, my measurements are very similar to Sandow's *proportions* at that time (adjusted for my own lighter skeletal structure). If my upper arm and neck were half an inch bigger and my calf had another quarter of an inch on it I'd match it exactly.

More recently Casey Butt PhD in his ebook "Your Maximum Muscular potential" and in "The Weight Trainer" has written extensively on the same subject as Weaver, spending 6 years studying drug free bodybuilders, the champions of the past pre-steroid eras and the correlation between skeletal structure, height and muscular potential. He has created an extensive series of equations capable of accurately estimating one's maximum possible (drug free) muscular development based on certain measurements including height, skeletal structure at wrists and ankles and body fat percentage.

Casey Butt's equations predict my **absolute maximum** muscular potential (training as a natural pro bodybuilder, for size, with a muscular growth supporting diet etc) - at around 10 percent body fat for my particular skeletal structure at approximately:

Bodyweight = 186.7 pounds
Forearms = 13.4 inches
Biceps = 16.8 inches
Neck = 16.4 inches
Chest = 45.3 inches
Thighs = 23.4 inches
Calves = 15.7 inches

Mr Butt points out that these are still, at the end of the day, only estimates and that one's muscular potential is also affected by one's individual hormone profile (which varies significantly between individuals and is supposed to begin to diminish significantly after 40). In addition to this the location of the muscle attachments and whether

you have long full or short narrow muscle bellies will also influence your own personal muscular potential.

Because of all these factors Butt points out that only a small minority of men with the ideal hormonal profile, long muscle bellies and an ideal muscle supporting diet will be able to achieve the *full* maximum muscular potential for their skeletal structure. These are the individuals who go on to be successful champion bodybuilders.

Interestingly his equations predict absolute maximum measurements for a man of approximately Sandow's size and bone structure of:

Chest = 1.6817 x 7.0 + 1.3759 x 8.7 + 0.3314 x 69 = 46.6 inches
Biceps = 1.2033 x 7.0 + 0.1236 x 69 = 17.0 inches
Forearms = 0.9626 x 7.0 + 0.0989 x 69 = 13.6 inches
Neck = 1.1424 x 7.0 + 0.1236 x 69 = 16.5 inches
Thighs = 1.3868 x 8.7 + 0.1805 x 69 = 24.5 inches
Calves = 0.9298 x 8.7 + 0.1210 x 69 = 16.4 inches

These measurements are quite close to the actual measurements taken by Dr Sargent in 1893, which puts Sandow on a par with elite level drug free bodybuilders of today and the classic pre steroid era of the 1930's, 40's and 50's.

Everyone else, he argues - the rest of what he calls us "genetically typical trainees" - could never achieve these ideal measurements. To put it into perspective, he feels that achieving as much as 95% of them would be a good lifetimes goal while at 90% of these potential measurements he says a man would look like a "fitness model".

90% of the estimated maximum muscular potential measurements for me would be:

Forearm = 12.6
Bicep = 15.12
Neck = 15.12
Chest = 40.77
Thigh = 21.6
Calf = 14.13

My *actual* measurements slightly exceed all these and actually amount to:

Forearm = 97.0 % of maximum possible
Bicep = 91.0 % of maximum possible
Neck = 94.5 % of maximum possible
Chest = 93.15% of maximum possible
Thigh = 95.3 % of maximum possible
Calf = 92.35% of maximum possible

If you accept Casey Butt's figures this is astonishing. It means that at 44 years of age, after exercising for about three years with only very light 3 and five pound dumbbells for between twenty and thirty minutes a day, with no special muscle building diet (beyond normal good healthy nutrition) no supplements of any kind *and without consciously trying to even get bigger at all* I have achieved a decent looking physique that I am happy with and that averages out at ***90 odd % of my personal absolute maximum drug free muscular potential*** - pretty close to as muscular (size-wise) as I could reasonably hope to get whatever I did.

I haven't even measured myself during this whole time - I only got the tape measure out to write this chapter and was pleasantly surprised to see how what I'd thought of as my modest measurements stack up in terms of both the proportions Sandow sported and the maximum potential muscularity my genetics would actually allow.

I have even used measurements that were taken "cold" first thing in the morning - i.e. without doing any exercise or pumping up first and when I am at my absolute lightest. **I took the pictures this way too** . I did this because I didn't want to make any false claims about my results or about the likely effects of adopting this kind of training. If I measure myself immediately after I have done my W.A.T.C.H Protocol workout in the evening, when my muscles are worked and filled with blood the measurements come out as:

(My measurements when "pumped" after exercise)

Forearm = 13.5 inches - 100.75%!!!
Bicep = 15.6 inches - 92.85%
Neck = 15.5 inches - 94.5%
Chest = 42.5 inches - 93.8%
Waist = 31.0 inches
Thigh = 23.0 inches - 98.2%
Calf = 14.9 inches - 94.9%

While this is fun to mess about with - the fact that the pumped forearm measurement comes out at MORE than 100% of what is actually possible pretty much proves that pumped measurements are nonsense. If I did the kind of concerted "pumping up" that bodybuilders do before a show I'm sure I could even eek out another couple of notches here and there on the tape but tempting as this would be (I'm sure people do and have always done this when stating their "true" measurements) there is really no need.

As I said earlier it was never about sheer muscular size for me but **an even development and a physique that looked good, balanced and "fit" and that I could get and maintain with the least possible outlay in terms of time and money** . I feel the light dumbbell routine has delivered on all counts and as Hippolyte Triat said earlier:

"The aim of these exercises is not to create a heavily muscled Hercules but to turn out men who are harmonious in appearance, healthy of body and strong of spirit"

I feel the old-time light dumbbell approach has done exactly that for me even though I have horrible genetics by bodybuilding standards - I'm approaching my mid forties, have a very light bone structure, short muscle bellies and long tendon attachments, have the whitest skin you've ever seen and have always had skinny legs and non existent calves. Despite all this, with only stupidly light weights, in twenty to thirty minutes a day, I developed and continue to maintain a body I'm very happy with.

By all modern accepted standards this should not be possible yet that's what happened when I followed the

instructions of men Like Attila, Sandow, Treloar and Strongfort as carefully as I could.

These are the sorts of results you can expect from the light dumbbell routine and the W.A.T.C.H Protocol if you master the exercises and perform them properly and consistently.

I can only go by my own personal experience but it seems to me that the old time Physical Culturists who promoted this deceptively simple training protocol where genuinely attempting to give people the key to laying the foundations for a great body.

I have no reason to believe that my hormone profile is anything other than average for a man my age so imagine what someone in their teens, twenties or even early thirties with optimum natural hormone levels and naturally long muscle bellies could do - add in a specific muscle building diet and protein supplements and I am sure many people could surpass my results or equal them much more quickly.

W ho Can Benefit From These Exercises?

I feel anyone can benefit from training the light dumbbell exercises with the W.A.T.C.H Protocol if they perform the movements correctly and consistently .

If your goals are to achieve a pleasantly developed, shapely, defined and strong appearance in minimum time and with minimum equipment then you can't go wrong - this approach would suit teenagers coming to working out for the first time, women looking for shape tone and a "hard body", men looking to get "in shape" again after letting it go, people who don't have space in their lives for "the gym" but would still like a decent body and those mentioned earlier who are chasing their favourite Hollywood celebrity physique - be it Brad Pitt's torso in Fight club or Madonna's arms but don't really regard themselves as fitness enthusiasts.

It has to be said though that the type of trainee who would benefit the most and have the quickest visible results would be someone who was of roughly average proportions and body mass index but who wanted to add some muscular mass, tone and definition to their frame. A typical "skinny fat" type physique would actually show the muscular definition and shaping effect of this approach in a relatively short time.

Likewise the man or woman who has been in good shape in the past - from sports or past forays into weight training at the gym - but has had a couple of kids, climbed further up the career ladder and not really had any time for exercise for a while could benefit massively from this approach. While it's easy to intend to "get back to the gym one day" and then never actually get round to it, these exercises can be done at home in a short time with very little fuss.

Someone who has been in decent shape in the past will already have some latent muscle and some degree of neurological control over it and waking that muscular system up again with this protocol would probably give

results they'd find surprising compared to past experiences with working out.

If however your problem is that you are significantly overweight or even obese then choosing the light dumbbell routine as your main exercise protocol may be problematic. Back in the 1880's and early nineteen hundreds the main problem for most people was a lack of food not a surplus of the wrong sort! The universal problem for the average follower of physical culture then was how to build up his weedy frame (this continued on right up to the fifties and sixties - think of the famous Charles Atlas pupil with the sand kicked in his face, the 90 pound weakling etc)

There were mentions of tackling "corpulence" and "reducing" and getting rid of a "corporation" (a beer-gut or belly in today's parlance) in some of the early books but the type of overweight bodies Sandow and Attila were faced with on rich but out of shape city executives and portly captains of industry would hardly qualify as fat by today's standards.

While building some level of muscle mass is always helpful in losing weight - actually maintaining extra muscle on the body burns significant calories so a muscular person is using up more calories just *existing* than a person with negligible muscle mass - it's no good carving out a hard, defined and perfectly proportioned musculature if nobody can see it under layers and layers of adipose tissue.

There's no getting away from the fact that if you are significantly overweight you need to seriously address your dietary intake and you need to burn some serious calories in whatever exercise programme you take up. While the W.A.T.C.H Protocol would be a brilliant *addition* to the training and exercising arsenal of someone trying to lose a significant amount of weight and sculpt themselves a good body, it shouldn't be your main focus. Sorry.

If you are interested in more than just cosmetic appearance and want to enhance your health and fitness and improve your physical performance I believe this

approach has an immense amount to offer - particularly in improving the neurological communication between your mind and your body.

In the next chapter I'll talk a bit more about this but for now it's enough to say that the W.A.T.C.H protocol with the light dumbbells would be ideal training for any activity requiring enhanced muscular co-ordination, physical dexterity, speed elasticity and strength.

A re the Results “Real” or Just Cosmetic?

If at this point in the book you are prepared to suspend your disbelief and accept that regular twenty to thirty minute work outs with ridiculously light weights could actually build an impressive *looking* muscular physique in a few months, contrary to everything you previously thought- if you say “OK I’m willing to believe that somehow this strange approach actually works and builds muscle” - you might start to wonder if the muscles it produces are “real” or not.

In other words, does this routine only *seem* to work in terms of building actual muscle and strength? Is the reason it produces results in contravention of all the stuff about progressive resistance and gradually breaking down and rebuilding muscle fibres because it just pumps the tissues with blood and somehow produces “counterfeit” muscles?

This is a very reasonable question and one I asked myself when I first started noticing the very definite results. This idea of light “pumping” or cramping type exercise producing muscles that are just for show and not “really strong” is something that has been levelled at these types of movements before.

The classic weight lifting writer Harry Paschall writing as the character “Bosco” in the 1950’s spoke of this type of training, calling it “muscle spinning”. He was an advocate of heavy weight training but recognised that this protocol was the big secret behind the amazing physiques of men like Sandow. He believed that these exercises and the degree of muscle control they delivered were responsible for these men’s *looks* but that alone they would only produce what he called “impressive looking lumps” - heavy training was absolutely necessary as well, according to Bosco.

However he was speaking of the “muscle spinning” he’d seen being used in the 1940’s by the professional bodybuilders of the day which seems to have been done

seated, in multiple sets per body part, for he says “hours at a time” to just pump and pump for sheer size.

Quite rightly he identifies this as unlikely to produce a truly fit or strong body but he says that even when done in this extreme manner, just the addition of some strenuous and aerobically taxing bodyweight exercises would have added strength and condition to the equation for the trainees that were using it.

We are not training in that fashion and the routine in this book *does* include some strenuous bodyweight exercises. Furthermore, when he speaks of true masters of muscle control like Sandow or later men like Sig Klein (who actually married Professor Attila’s daughter) he admits they were both strong *and* impressively built and that this muscle control practice was intimately related to that. Paschall just thought that raw weightlifting strength should be built *first* and these type of exercises and muscle control movements should be taken up later as a useful adjunct - the exact opposite line of thinking than that followed by men who actually *did it* - who believed the light work should come first and was foundational to great strength and condition.

So even in the 1940’s and 50’s when the heavy weightlifting protocol including heavy squatting and heavy bench pressing had completely taken over from “Physical Culture” it was still tacitly recognised that this protocol WORKED - however, now it was felt that the muscles it created were somehow “fake” and not as good as the “real” ones generated by heavy progressive resistance (totally different from the accepted view that had prevailed up to fifty years earlier - that they worked *and* made you strong and totally different from the view that prevails today - which has forgotten these exercises altogether and would argue they simply can’t work at all)

For those of us interested in resurrecting the light dumbbell exercises from the turn of the last century as a way to sculpt an impressive physique, there are two ways to come at this question of the “usefulness” of the muscles it creates.

The first approach is simply to say - “Who cares?” and for many this will be perfectly satisfactory - after all, if you are not a bodybuilder or serious strength trainer and you just want a good looking physique or an attractive figure; if you just want to look a certain way and be happier with yourself than you were before, what would you care *really* if you weren’t as strong a you now looked?

What would you say to the charge “hey - you’re body only *looks* like Brad Pitt in Fight club…I bet you’re not as strong as he was”?

How would you feel about being told, “you might *resemble* a fitness model on the front of Men’s Health but you’re not really that fit …”

You’d probably quite reasonably respond by just shrugging your impressive shoulders and going about your day looking much better than the person who’d just criticised you and not caring one single jot.

If on the other hand you want to look good *and* be healthy, strong and fit - there’s another way to look at it.

There are (very) basically two types of muscle hypertrophy or muscle growth. One is called Myofibrillar hypertrophy and is mostly concerned with an increase in the thickness of muscle fibres in a muscle cell and tends to result from adaptations the body makes to brief intense maximal effort and then there’s Sarcoplasmic Hypertrophy which is mostly concerned with an increase in fluid inside a muscle cell and which tends to happen when the body adapts to more prolonged sub-maximal work .

It’s generally supposed that the dense functional muscles of say a lightweight Olympic weightlifter - used to single heavy lifts - are an example of Myofibrillar hypertrophy while a pumped up bodybuilder, who does numerous sets and reps with weights that are heavy but significantly lighter than the maximum he can lift, exemplifies sarcoplasmic hypertrophy.

Actually it’s much more complicated than this as *all* muscle growth is a combination of both types of

hypertrophy but you get the idea.

So what is being suggested by accusing the light exercises done with focused contractions of only producing showy "fake" muscles is really that they only induce a degree of sarcoplasmic hypertrophy - an increase in fluid within the muscle cell - and don't deliver any growth in individual muscle fibres.

A muscle that has undergone only sarcoplasmic hypertrophy would be bigger but less dense than it was to start with and would not have significantly increased it's strength output, while a muscle that had undergone only myofibrillar hypertrophy would be much harder and denser than it was to start with, although not necessarily much bigger, and would have got demonstrably stronger.

Having read the first chapter of this book this seems like a reasonable assumption to make about the W.A.T.C.H Protocol - after all it doesn't use enough weight to break down any muscle fibres so if it does somehow work it *must* only produce sarcoplasmic growth surely?

We can't know this for certain without training a group of test subjects in only this exercise modality and taking invasive muscle biopsies both before and after training but we *can* look at the purely subjective evidence; the muscles this protocol develops don't seem to be bigger and *less dense* at all.

In fact the opposite seems to be true - at first you notice a huge increase in hardness and denseness in the muscles in the first few weeks, even a sense that the muscles are getting maybe smaller and tighter than they were to start with, and then later there is a steady incremental growth that sees that initial hardness and denseness remain.

I certainly felt stronger as I progressed with the exercises. Also as I mentioned earlier I noticed a huge increase in my muscle's responsiveness to the directions from my mind - an improvement in the neurological communication between my brain and musculature - that felt like an increase in whole body unification and dexterity.

Even if it did turn out to be the case that the muscles gained by doing the W.A.T.C.H Protocol training were *predominantly* sarcoplasmic in their cellular structure this does not automatically mean they are useless.

My girlfriend is a Sports Rehabilitator who works with a professional Rugby team. With athletes like Rugby players who need a degree of size and muscular bulk (for impact) and also explosive, plyometric and endurance strength components to their physical development, it is current best practice to train for an initial sarcoplasmic growth phase - sub-maximal weights in the 10-12 rep range just like bodybuilders - and then once a degree of muscularity has been attained to train that new muscle mass for raw strength and power.

If you think about it - **IF** the light dumbbell protocol is somehow a forgotten shortcut to quick sarcoplasmic growth then this was exactly how Attila was training his pupils - light dumbbells to bring all the muscles up to a "full development before teaching them to perform great feats (of strength)"

This would mean that if you only care what you look like and not what you can actually do with your body or how "fit" you might be, you could just stop at the light dumbbell routine and it would provide all you ever needed. If you were concerned more with strength and fitness you could add other things - kettlebells, bodyweight exercises, a regular sport etc... to your routine and start to put those muscles to use and develop real strength in them - the squats, sit ups and push ups at the end of the routine presented in this book, depending on how hard you push them, would go some way to doing this already.

This *could* explain the rationale behind the light dumbbell routines of old, **however - I think it's more complicated than that and that there is much more going on than just sarcoplasmic hypertrophy** .

Remember that the other type of muscle growth - myofibrillar hypertrophy - depends on a growth of the muscle fibres and tends to increase density and

definition? Well this happens because of an increase in the contractile capacity of the muscle. Sarcoplasmic growth doesn't appreciably increase strength in the muscle because it doesn't involve an increase the contractile capacity.

All we are doing in the W.A.T.C.H Protocol is contracting - we are increasing (consciously) our capacity to contract our muscles. Whether or not you agree that you can do this as well or even effectively with focused contractions and light weight as compared to lifting heavy weights is unimportant - muscle contraction and an increased capacity for contraction is paramount and therefore I think any hypertrophy produced by this method cannot be only sarcoplasmic and *must* include some myofibrillar adaptation as well.

In the next chapter I'll briefly cover some research that suggests this may well be the case but for now I would like to mention another reason why I firmly believe the muscular growth and improvement you get from the light dumbbell protocol is far from useless.

I practice and teach a Chinese Internal Martial Art similar in some ways to taichi. In addition to my martial arts, the actual regular practice of which keeps me supple, aerobically fit and functionally strong enough to perform it, I liked in the past to also include some extra "conditioning" exercises. These weren't, if I'm honest, all specifically to enhance my martial arts. Some of them were purely for appearance sake and for the effect they would have on my physique.

The thing is there are only so many hours in the day and any time spent working out just for fitness and appearance is time not spent practicing and getting better at the performance of the martial art. In addition to this, the attitude towards weight training and muscle mass within the internal martial arts is similar to the attitude boxers had towards weight training in the past.

Although many boxers today train with weights, from the 1800s up until as late as the 1980's it was considered an absolute no-no in boxing. Boxers and boxing trainers believed that weight lifting (with heavy weights) would

be detrimental to their fighters, slowing them down and making them less powerful and less agile. Traditional Chinese martial arts teachers had (and still have) the same ideas.

These ideas are laughed at by sports scientists in boxing today who point out that this assumption is ridiculous - an overall increase in strength can only make you faster and more powerful they point out - and so they look upon the old trainers as merely ignorant and ill informed.

The thing is they weren't ill informed and they weren't stupid - they knew exactly what they were talking about. It's just that modern readers have misunderstood them. They weren't saying that extra muscle gained through lifting heavy weights would be bulky and slow down their fighters that way - they were saying that the kind of neurological adaptations one's body makes when training to lift heavy weights tends to be incompatible with boxing.

They felt a boxer needed a strong but finely controlled musculature - perfect neurological communication between mind and muscle - so that he could whip out a punch into a fleeting gap in a defence or move his body in any direction in an instant. They felt that heavy weight lifting developed a different kind of neurological adaptation and that it was best left alone. Strength on the other hand they KNEW was vital.

Modern Chinese internal martial arts have kept this bias against weight training so for my supplemental fitness training I religiously avoided heavy weights and a body building type approach. I mainly worked out for fitness with bodyweight movements, rope climbs and suchlike. A few years ago I injured my right elbow badly enough to mean I couldn't train properly for about six or eight months and while I could still do lots of elements of my internal martial arts training I had to stop completely any supplemental fitness stuff.

When the elbow had healed I'd got used to spending all the free time I had practicing and didn't want to give up a significant chunk of that to supplemental fitness

exercises but neither did I want to just make do with how I looked as a result of my practice (I may have been functionally and aerobically “fit” but I felt I “looked” out of shape and I didn’t like it).

Around this time I read all the books on the old-time strongmen and started to suspect that the light dumbbell protocol that kept cropping up in these books was more than it seemed - and might offer me a solution. Because it would be a way to ease my elbow back into exercise and it would only take me fifteen or twenty minutes in the evening I thought I would try it out just to see what would happen. The results I got were way better than I had hoped and so I’m still doing it and this is the ONLY extra conditioning I do outside of regular internal martial arts practice.

Quite quickly though, people within the arts I practice started mentioning my increasingly visible results, assuming that I was training in a bodybuilding fashion with heavy weights. They warned me that this extra bulk and the “wrong way” in which I would inevitably be learning to use my body would wreck my performance and preclude me from developing real skill. They thought I would be “muscling” all the applications instead of using relatively relaxed and unified, intelligent, whole body force.

No matter how much I told these people that I was most definitely NOT training with heavy weights and that in fact I felt the exercises were facilitating a GREATER ability to control (and therefore appropriately relax) and use my muscles, they wouldn’t believe me.

Then I discovered that this debate had happened before and that these very exercises had been used in the past by famous boxers - those exact ones that warned *against* heavy weight training. Like Sandow before them they had known the value of the light dumbbell protocol, had known it was NOT weight training as such, and known it provided a kind of strength and neurological adaptation that was extremely useful to them.

When Sandow was extensively measured and tested in America by Dr Sargent, one of the men present was the

famous middleweight champion boxer Mike Donovan. Donovan competed with Sandow on several tests with equipment that measured the speed of the arm movement when delivering a blow. The reason for this test is very clear - Donovan was particularly famed for his speed and the tests were to see not "if" but just how much Sandow's comparatively huge muscles slowed him down.

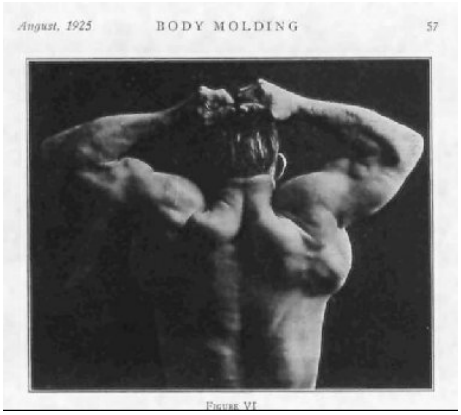
Everyone present was astonished to note that Sandow's punch was more or less equal to Donovan's - the boxer only beating him by the narrowest of margins. Much was made of the fact that Sandow had "**a tremendous supply of nervous energy which he was able to use only when necessary** " - he was "**able to use only those muscles necessary for performing any action, those not in use were in a state of complete relaxation** ."

It is precisely this type of neurological adaptation that is necessary in boxing and that boxers (and some traditional martial artists) felt heavy weight training would ruin. Basically, pushing the kind of weight that makes you unthinkingly tense ALL the muscles in the arms, back and chest at once in order to wrestle the weight up or outwards builds a neurological pattern where all the muscles learn to "fire" at the same time. This would effectively be like trying to drive a car forward with the handbrake on and would slow you down and cause you to use more energy than necessary with every punch.

Clearly the type of development Sandow had built did *not* have this effect on his movement. This supposed side effect of weight lifting was to do with the concept of someone being "muscle-bound". Today we think of this phrase to mean just somebody with lots of muscular development whose size somehow gets in his way when he moves about but that is not how the term was used at this time.

The term very specifically referred to a state of affairs where the action of one muscle was unconsciously "bound up" with the action of another muscle - someone

who cannot contract the bicep and at the same time completely relax the triceps is by this definition “muscle bound”. Maybe you’ve seen those odd old- time physique poses where the muscle man stands with his back to the camera with both hands stretched above his head and the fingers interlaced and pulls apart so that his shoulder blades wing right out to the sides and almost dislocate? There’s some youtube footage shot by Thomas Edison of Sandow performing this exact feat.



Famous muscle control expert Otto Arco performing the back display

This was done to demonstrate something very specific - when the demonstrator pulls on this fingers strongly he contracts the muscles that pull the scapulae together at the top and at the same time purposely turns off the muscles in the mid back that pull them together there - allowing the full opening of the scapulae out to the sides.

If you adopt this pose and pull the hands apart strongly and ALL THE MUSCLES OF YOUR BACK FIRE SIMULTANEOUSLY - so that the scapulae stay where they are - then you are muscle bound by the original definition. This pose was to demonstrate that the person doing it most definitely wasn’t. Ironically many people who have never touched a weight in their lives are muscle bound by this original definition.

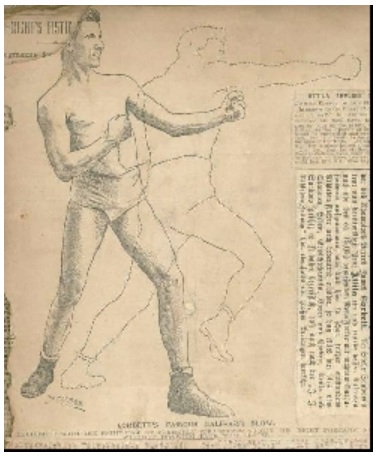
If you habitually contract all your muscles at once in a strength feat - say the bench press - because it takes everything you have to get the weight up there, then unconsciously you are training your muscles to all go on at once and it is this neurological factor that the old

boxers were referring to when they said weight training would make their fighters “muscle bound”.

The light dumbbell protocol as taught to Sandow by Attila, however, specifically avoids this - it starts by teaching separate and maximal control of all the muscles with weights light enough to allow one to choose which ones are involved and to exactly what degree. It makes one “strong” in a very particular way - it gives precise control over each muscle and teaches you to consciously contract it very hard or turn it off altogether, thus fine tuning the very important neurological component of strength.

You might remember earlier in the chapter on Professor Attila that it was mentioned that several very famous sportsmen and athletes of the day were pupils at his famous studio. One of these men was the Heavyweight Champion of the World at the time - the famous “Gentleman” Jim Corbett.

Before Corbett’s fight with the Englishman Charlie Mitchell in Florida in 1894, Attila famously trained the Heavyweight Champion in his five pound dumbbell exercises - tailoring the particular moves to concentrate on improving his muscle mass and working on the muscles involved in throwing his famed left hook (which he is credited with inventing incidentally) and his “right hand half hit”.

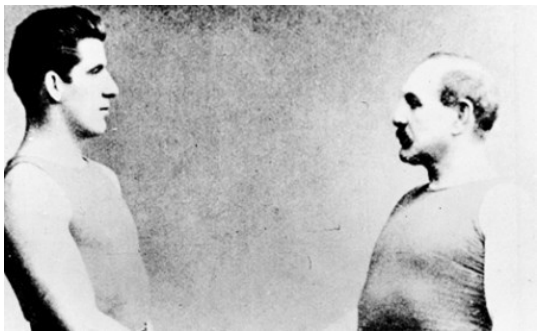

Corbett’s right half hit

(Picture courtesy of Jan and Terry Todd, H.J. Lutcher Stark Center for Physical Culture and Sports)

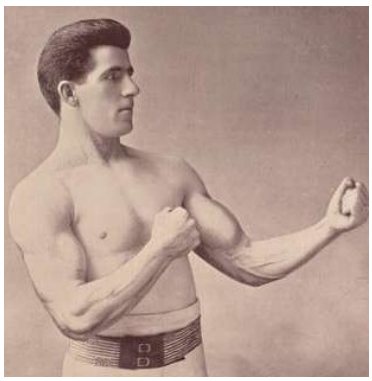
This last blow, as we can see from an illustration included in an article in the scrapbook, is identical to the traditional martial arts “lunge punch” and also is essentially the same as exercise 11 but with a full step through. Mitchell was smaller and lighter than Corbett but had given the much Larger John L Sullivan a difficult fight and was noted for his speed so it was essential that any training Corbett undertook did not affect *his* speed and dexterity.

Corbett had the worst of the first round then dropped Mitchell in the second and then again three times in the third to win by a fairly fast KO. Until this point Corbett was not a noted puncher.

In the Attila scrapbook there is a clipping that records the fact that at the bijou theatre in Brooklyn Corbett presented Professor Attila with a gold locket to officially and publicly thank him for the training he had received before the fight in Florida.



The new champion Corbett meets veteran Jem Mace



A noticeably more muscular James J. Corbett in 1894 after the dumbbell training

“**The face of the pendant is graced with a picture of Corbett in fighting costume while the reverse bears the forearm and paraphernalia of Attila’s five pound system** ”

Elsewhere in the scrapbook Attila also includes an actual letter of thanks from Corbett:

“**This is the first opportunity since the fight to drop you a line - although we saw each other for a moment at Madison Square Garden - I wish to express to you my great satisfaction with your five pound dumbbell system which you were kind enough to teach me at Asbury Park last fall and which I have practised ever since - carrying also in my daily excursions one of your 8 pound walking canes which you presented to me on the day I left New York.**

Well, old boy, it did me a great deal of good. I must say it is a wonderful method and might have had not a little to do with my recent success.

I should like to present you on a benefit occasion on my return to town with a public testimonial. Accept for the present my most sincere thanks - good luck in America, I remain your friend. Signed JAS J Corbett ”.

(**All references and quotes from Attila’s scrapbook are included Courtesy of Jan and Terry Todd, H.J. Lutcher Stark Center for Physical Culture and Sports**)

In Patrick Myler’s biography “Gentleman Jim Corbett” whenever the Champion’s fight preparation and conditioning is mentioned after the Mitchell fight it always includes work with light dumbbells. Although this is the only *official* mention of the light dumbbell work ever being linked to boxing, Corbett certainly wasn’t the only boxer to recognise its value.

On July 4th in 1910 one of the most celebrated and contentious fights in the entire history of boxing took place in Reno Nevada. The first black heavyweight

champion - the prodigiously talented Jack Johnson - was challenged by former champion Jim Jeffries the original "Great white hope". Such was the interest in this colossal match up - and so much was there at stake - that the media followed both men's training camps closely for months.

Jeffries had to lose a tremendous amount of weight as he was coming out of a long retirement to try to claim back the championship for the "white race". Gentleman Jim Corbett - retired now - was in his corner and helped train him into shape and he definitely passed on his practice of the light dumbbell exercises. His opponent also used the protocol. No one has ever mentioned this in print before to my knowledge but I know it to be fact because I recently discovered the following picture of some newspaper coverage of both men's preparations:

If you look carefully at the picture of both fighters with their backs to us you will see that in their hands they are both holding something unmistakeable - they are both training with Sandow's Patented Spring Grip Dumbbells. Jeffries is midway through a rep of exercise 4 while Johnson appears to be doing exercise 16. Furthermore they both sport the exact type of physique this protocol delivers - very defined strong backs, large round well developed deltoids, good arm development and lean athletic torsos with flat but defined pectorals.

In Mike Silver's excellent book "The Arc of Boxing - the rise and decline of the sweet science" a panel of experts on old time boxing (up to it's golden age in the 30's, 40's and 50's) decry modern training methods and give their

opinions about what was better about the old ways of training and fighting. On the subject of weight training, many of them echo the idea that HEAVY weight training slows you down but none of them are against strength or muscle per se - it's just that you need a certain *type* of strength and muscle. Edward Villella an ex welterweight champion from the 1950's who was also a dancer says:

> "**We need long use of the muscle tone - we don't want the short muscle tone, we want speed and elasticity. I don't think you have to dismiss all weight training, *you can exercise with four or five pounds - and you'll be surprised what that will do for you*** "

Like these champions of old I am convinced that the type of muscle development the light dumbbell exercises and the W.A.T.C.H Protocol delivers is very functional and the fine muscle control it results in makes it ideal training for boxing and martial arts - or indeed any sport or endeavour that requires speed, dexterity, agility and strength in equal measure. In my experience it is very far from being "counterfeit" muscle.

In Shaolin kung fu there is an ancient training routine called the Yijin jing or "The classic of muscle and tendon change" which consists of a series of standing exercises done with self directed dynamic tension. The practice is concerned with using the will to direct muscular strength in combination with controlling the breath and is intended to literally "transform the sinews" - to remodel the muscles, tendons and connective tissues making them supple and strong, enhancing the functioning and performance of the muscular and neurological systems.

This training is said to -

- Enhance physical and mental vitality.
- Enhance blood circulation and nurture the meridians.

- Bring strength and flexibility to muscles and nurture the organs.
- Improve the meridians and nurture the viscera.
- Wash the marrow and nurture the brain.

If you look at how Sandow describes his system in the introduction to “The Gospel of strength” -

> “**My system is a form of physical education by means of which every part of the body is properly exercised, developed and made healthy; the will power increased; the various organs brought to and maintained in a healthy condition and the individual made as nearly as possible physically perfect** ”.

We can see that the light dumbbell routine he was talking about has more in common with the yijin jing both in performance and intended result than with modern weight training. I genuinely believe the light dumbbell system performed with the W.A.T.C.H protocol can be thought of as a lost western counterpart to the muscle change classic and as such would be invaluable introductory or supplementary training for anyone and represents a true “science of muscular education”.

P ossible explanations for why these exercises work

For me it's enough to know - empirically - that these exercises work. However, because the protocol does not use progressive resistance training with heavy weights, many people will be tough to convince and they simply won't accept that it could possibly develop significant muscle size or strength. Such people would naturally point to what they know to be scientifically "true" about the way muscle mass is progressively developed and assert that any method that uses a different approach cannot possibly be valid.

For this reason in this final chapter I've tried to present some scientific validation of the W.A.T.C.H Protocol and to suggest some plausible mechanisms by which it might be delivering it's (very real) results. I have no definitive proof that these two suggested mechanisms are actually what's behind the light dumbbell's effectiveness but at least they show that scientific "truth" is not static - that new discoveries are being made all the time and there are at least *possible* mechanisms *recognised by science* that could explain how you can make your muscles get bigger and stronger exercising with stupidly light weights.

"Kaatsu" Training

This bizarre method of bodybuilding was invented by Japanese bodybuilding enthusiast J. Sato in the seventies and has been developed and refined over the following decades. It has only relatively recently become known to the bodybuilding world but has quite quickly become very popular (although if you think exercising with little weights like men in leopard print leotards did a hundred years ago is mental, wait till you get a load of this).

Sato noticed that when kneeling in the traditional Japanese seiza posture at a Buddhist shrine, his legs went numb (you don't say) and he felt this was quite a similar pumped feeling to that which he experienced from heavy weight training. He experimented with

purposely occluding his legs of blood and theorised that this “decreased blood flow” was somehow intimately involved with muscle hypertrophy.

Later, when recovering from a skiing accident, he claims to have healed his broken leg by applying this idea and avoided any muscle atrophy while in a cast for several weeks.

Over time Sato experimented with different ways to get exactly the correct level of pressure on the different types of tourniquets he would apply to his limbs (no really, I said *tourniquets* there) to induce hypertrophy in the muscle without causing dangerous ischemia. It’s worth noting that he was hospitalised with a pulmonary embolism during these “experiments”! He settled on a type of light blood pressure cuff that’s used to occlude the blood in the target limb.

The trainee then does exercises with very light weights while the blood is occluded for a short time - the optimum time seems to be around five minutes as too long would be dangerous to the circulatory system and much less time obviates the effects. This protocol has led to astonishing muscle hypertrophy - hence it’s sudden popularity in bodybuilding.

Kaatsu training has been extensively scientifically studied in Japan were it is being discussed as a way for older people whose joints cannot bear significant loads to maintain muscle mass, a way for astronaughts to maintain muscle mass in zero gravity situations, a method of remedial rehabilitation and as a way to quickly induce hypertrophy for athletes.

It has been found in scientific tests that even with light dumbbells, trainees were able to induce the kind of hypertrophy in their arms in three weeks that would ordinarily take twelve weeks using traditional progressive resistance training!

There have been numerous research projects focused on the effects of acute low-intensity KAATSU exercise on blood growth hormone and the chronic effect on muscle

hypertrophy and strength gains (Takarada et al.,

2000), as well as the effects of KAATSU Training on muscle size and strength in athletes (Takarada et al., 2002). The results were published in prestigious research journals, which drew enormous attention from the public.

The studies suggest that the protocol seems to stimulate endogenous hormonal responses including increased growth hormone. It's postulated (although nobody knows for sure yet) that the extended time that the blood circulation is reduced causes the blood pooling in the tissues as they're "pumped" with the light dumbbells to accumulate unusually high concentrations of human growth hormone - significantly higher than that recorded in ordinary training!

Incredibly, Kaatsu training does produce strength increases as well as muscle hypertrophy although not as much of an increase in strength as traditional training protocols - this means that although no significant contraction is going on, the increased growth nutrients in the blood still somehow produces some level of myofibrillar hypertrophy.

The protocol calls for training 6 days a week with sub-maximal weights (they recommend 20% of I rep max) and the occlusion is kept up for the entire duration of the exercise. (Sound familiar?)

Now bodybuilders who will inject themselves with vetinary steroids and synthetic growth hormones and ignore the inherent risk of shrinking their own testicles to the size of peas will try anything I suppose. Personally I would not want to mess about with tying tourniquets around my arms and doing weights. Also it is not clear how you would tie tourniquet around your torso but it doesn't matter - this interesting method of training tells us several things -

Firstly it tells us that it has been scientifically PROVEN that it *is* possible to bring on significant muscle hypertrophy in a short time with light weights.

Secondly it shows us that it is possible to induce muscle hypertrophy IN A DIFFERENT WAY TO THE UNIVERSALLY ACCEPTED METHOD.

Thirdly it strongly suggests that blood flow - or restriction of blood flow - through a working muscle seems to be involved in muscle hypertrophy and may be as important a factor as external resistance.

In the traditional light dumbbell routine popularized by Attila when using the W.A.T.C.H Protocol to perform it, one uses self-directed focused muscular contractions continued for a prolonged period to induce a similar feeling of blood occlusion. This would not be as pronounced as using a tourniquet but far more contraction and tension is involved than in the Kaatsu protocol and if you look at the routine, it starts with an arm section in which you follow one arm exercise straight after another trying to maintain the feeling of maximal pump.

Then there is a shoulder section etc… then a back section. If you do the exercises with the right level of tension and with the correct cadence it seems to me that you will keep the arms, then the shoulders, then the back, then legs etc…in a state of reduced blood flow for approximately five minutes each - the exact optimum time according to the kaatsu protocol to induce hypertrophy by exposing the tissues to elevated levels of growth hormone.

While the tissues are flooded with this nutrient rich blood you are rhythmically and strongly contracting them - trying to engage as many muscle fibers as strongly as possible repeatedly. Then eventually you shake out the arm or leg and let fresh blood flow in bringing other growth factors.

It seems possible that Professor Attila's "special method of training" might operate on a similar principle to Kaatsu training but using the mind, neurology and self-directed tension to induce the necessary conditions for hypertrophy while utilizing light dumbbells instead of using a tourniquet and just pumping away with the light weights mindlessly.

The McMaster University Study

In 2010 a study conducted at McMaster University conclusively showed that heavy weights are not necessary for stimulating muscle hypertrophy and that similar muscular adaptation could be brought about by training with much lighter weights - the secret being prolonged effort and reaching significant muscular fatigue. Basically you lift a light weight but you keep lifting it until you can't lift it anymore.

The study contrasted one group training heavy - with 90 percent of the trainees 1 rep max - with other groups training in various protocols with weights as light as 30% of their 1 rep max.

The trainees who trained to failure with only 30% of their 1 rep max made not only gains just as significant as the other group, they actually made superior gains! The weights used are very light by weightlifting standards and prove that as the mastermind of the study senior PhD student Nicholas Burd says - "**it's really not the weight that you lift but the fact that you get muscular fatigue that's the critical point in building muscle** " the study strongly suggests that muscle hypertrophy simply relies on stimulating your muscles to make new muscle proteins, a process which over time leads to the body developing bigger muscles.

Burd has stated:

> "**We conclude that a high intensity-low volume training bout [90FAIL] is inferior to a low intensity-high volume bout [30FAIL] in stimulating an anabolic response . Quantity of work, however, is important even at low intensities. Our data support the notion that a lower intensity-higher volume resistance exercise paradigm [like 30FAIL] may ultimately be more effective in stimulating hypertrophy [increases in muscle size]** ."

And:

> "**It is important to note that the 30FAIL protocol not only induced significant effects on anabolic signalling molecules but also a direct predictor of training induced muscle mass (i.e., myofibrillar protein synthesis). Furthermore, sarcoplasmic protein synthesis (which includes mitochondrial proteins) was superior in 30FAIL, suggesting that this type of training not only improves muscle quality but also oxidative capacity, a benefit that is more commonly associated with aerobic training. As for the responsiveness, the SD's [standard deviations] were very tight, which illustrates that subjects responded very similar(ly). We have some fed-state responses using this exercise paradigm and these findings are equally impressive** ."

So basically here is a study that PROVES it's not the weight you lift that's important but the effect you induce in the muscle.

It further goes on to PROVE you can induce this effect in the muscle *more effectively* with a lighter weight!

It further PROVES that the muscle gained would have both sarcoplasmic and myofibrillar features and, incredibly, includes some benefits more associated with aerobic fitness training!

It's my contention that although in this study the requisite stimulus was successfully generated by working to momentary failure with 30% of the trainees 1 rep max, it is equally possible to pick up a three or five pound dumbbell and**, by using focused, powerful, rhythmic and exaggerated muscular contractions on each rep for the rep ranges mentioned in the instructions for the W.A.T.C.H Protocol, induce the same level of muscular fatigue for the same effect in terms of making new muscle proteins** .

In conclusion I think that the light dumbbell protocol popular at the turn of the last century worked by a combination of the factors hinted at in these two examples - it provided trainees with a convenient method to induce muscular fatigue, producing an increase in muscle proteins similar to the superior method demonstrated in the McMasters University study ***and*** **,** through focused self directed contractions, caused a high degree of blood occlusion and pump in the target muscles for a prolonged period of around five minutes per body part as in Kaatsu training, thus flooding the working muscle tissue with blood rich in muscle building factors including significantly elevated growth hormone.

There may be other things going on as well - in East Germany in the 1960's research was conducted into the "irradiation effect" of certain exercises. This is the degree to which the effects of working a certain muscle irradiate out to the body's other muscles - we all know that training the thighs and glutes with heavy squats for example is supposed to have a knock on effect and increase muscle mass in the entire body.

Apparently this German study found that exercises that targeted the erector spinae structures of the lower back had the greatest irradiation effect! Who the hell specifically targets the erector spinae? Well Professor Attila did - exercises 12, 15 and 23 all hit this area strongly and specifically and the other back exercises involve it secondarily - remember Attila said the back exercises were the most important in the whole routine.

Add to this the concept of "time under tension" or TUT - developed by strength coach Charles Poliquin which suggests the time a muscle spends under active tension in any exercise is crucial (he suggests 30-70 seconds is ideal for hypertrophy and 70-100 seconds ideal for strength endurance - ideal for the light dumbbell routine) and the fact that strongly gripping a thick handle also has a powerful irradiation effect on all the muscles and we can see there are probably multiple factors at work in this way of exercising.

The kinds of results found in the two interesting studies above - significant muscle growth stimulated with light weights in a short period with blood occlusion as a major factor (kaatsu) and prolonged repetitions to the “ache” of muscle fatigue with sub maximal weights leading to growth superior to progressive resistance with heavy weights (McMasters study) - was EXACTLY what Professor Attila, Eugen Sandow, Lionel Strongfort, Al Treloar, Alfred Moss, Edmond Desbonnet, and Hippolyte Triat before them (and possibly the ancient Greeks before *him*) had promised they would deliver.

As Professor Attila said:

> “**That is one of the great secrets of muscular education - long continued exercise with light weights ...** ”

C onclusion

In the late 1800's during a fad for strongmen acts on the popular stages of Europe, America and later the rest of the globe, there rose to prominence several giant's of "Physical Culture" - men of mighty muscle who captured the public's collective imagination.

The audiences were thrilled by the perfect classic physiques of these athletes and for the first time in a very long time the general population aspired to develop their own bodies to the peak of health and strength and into mini versions of these new examples of physical perfection.

The men concerned answered the call of the public and began to teach and to sell in print and by mail order exactly what the people wanted - the secret to developing such a body for themselves.

What they revealed was a simple but reliable method of taking a light weight and using it systematically in such a way as to induce significant growth and aesthetic improvement in the trainees muscles in a relatively short time. It developed a balanced physique with the classic proportions displayed in ancient statuary, lay the ground for developing true strength by teaching full neurological control of the growing musculature and maintained that impressively developed body with minimal daily exertion.

The method they promoted relied on inducing muscle fatigue by prolonged repetitions using light dumbbells, focused self generated contractions and a pronounced "pump" and blood occlusion effect. It was, they said, the great secret of Physical Culture.

Men and women everywhere followed their advice and grew impressively muscled and well developed bodies just as they were told they would. Famous boxers and athletes took up these training methods and improved their physiques and athletic performance.

This method of exercising became so popular as to be ubiquitous and the very word “dumbbells” came to *mean* training in this exact fashion. You could buy wooden dumbbells weighing two pounds; spring loaded ones weighing three pounds and the classic cast iron globe ones from five to seven pounds. They were literally everywhere.

Now these antique dumbbells lie rusting in attics the world over and the writings of these men gather dust in libraries and private collections - some of them can be read for historical interest in digital form on the internet but no one takes the training advice in them seriously anymore.

Nowadays we have moved on and what we collectively believe about muscle development and strength training is incompatible with what these men said. Because of this a phenomenally effective training methodology, capable of delivering excellent results in a short period with far less hassle than our modern methods, has been completely abandoned.

The thing is - it still works!

Hopefully this book has demonstrated that this method really existed - That the Physical Culture greats were not selling a useless approach to the public and training in a totally different way themselves. It only appears that way if we assume heavy resistance training and the protocols we use today are the only way to build muscles - <u>they are not.</u>

I hope it has also demonstrated that the approach actually works and has explained as clearly as possible how to put it into practice for yourself.

I have tried to offer scientific evidence at least supporting the general approach of the method if not conclusively explaining *exactly* how it gets its results.

At the end of the day, whatever the true mechanisms involved, it really is the case that by working out with a pair of very light dumbbells on a daily basis in a particular way you can develop a very good body. Please

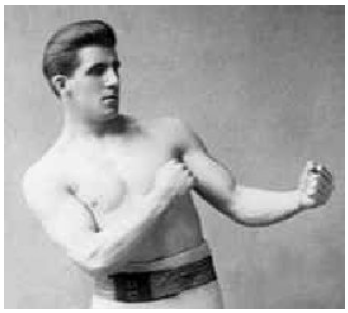
try it for yourself and maybe we can bring back this eminently effective and accessible approach to training.

Personally I don't like the kinds of bodies you see in modern bodybuilding and I have absolutely no desire to look anything like that. I've got nothing against people who do strive for that look - it's just not for me. Even the bodybuilders of the sixties and seventies are way too big and bulky for me to want a body like theirs. For me, the physiques of the men who trained with and popularised the light dumbbell protocol epitomise a balanced, strong, well-developed and sane standard to strive for.

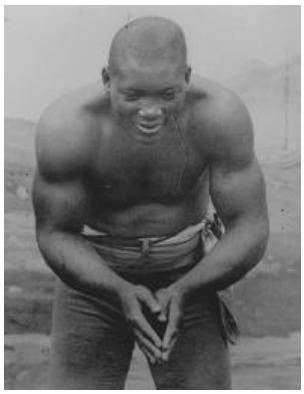
I'll leave you with a few photographs of some men (and one woman) who state in black and white that this was the way they trained - some people will instinctively doubt them. Others will go straight out and get a pair of light dumbbells. I hope you will be in the second group.

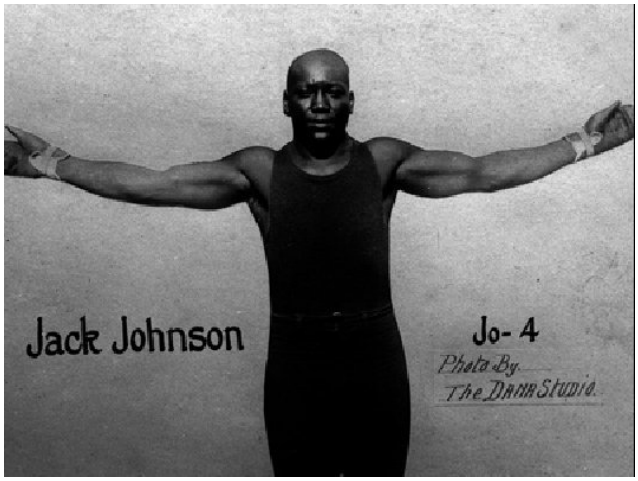
People who definitely trained in the light Dumbbells:

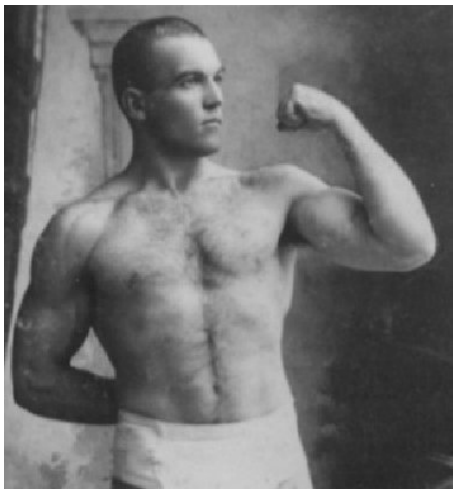
Sandow (pre moustache!)



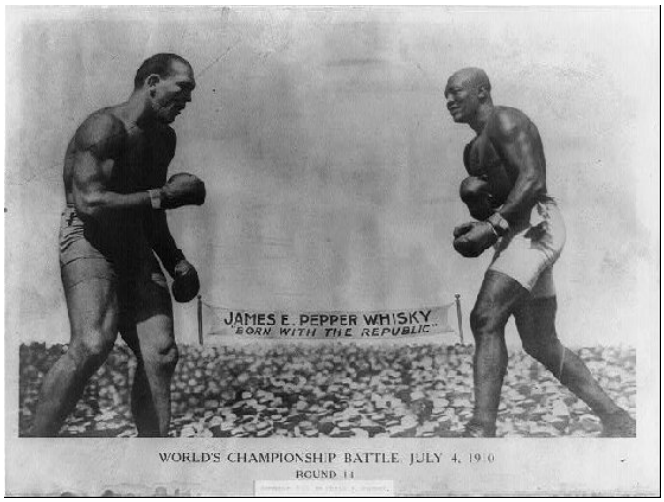
Gentleman Jim Corbett

 Jack Johnson





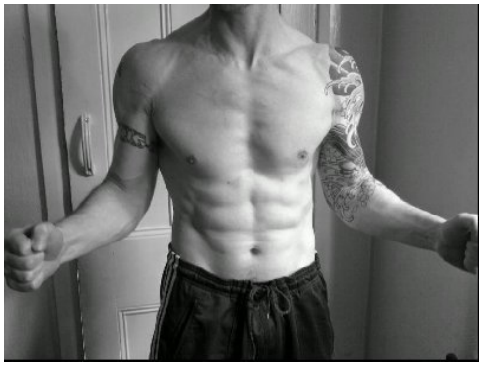
Jim Jeffries

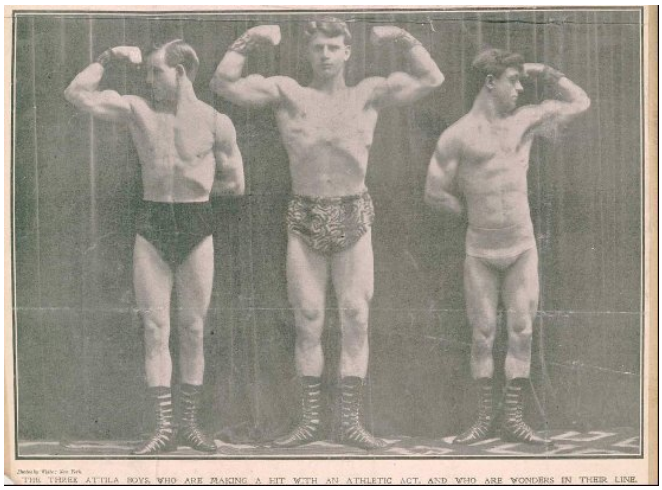


Jeffries v Johnson - both trained for this fight with Sandow's 3-pound Spring Grip Dumbbells

Treloar

The author above and below

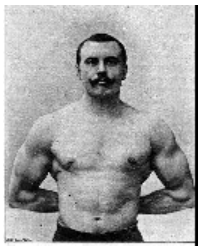




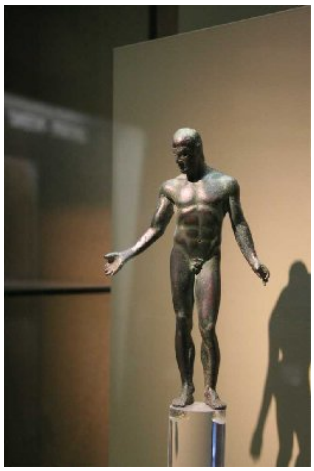
THE THREE ATTILA BOYS, WHO ARE MAKING A HIT WITH AN ATHLETIC ACT, AND WHO ARE WONDERS IN THEIR LINE.

Students of Professor Attila

Edmond Desbonnet & pupil “Vulcana”



…And one who may well have done:



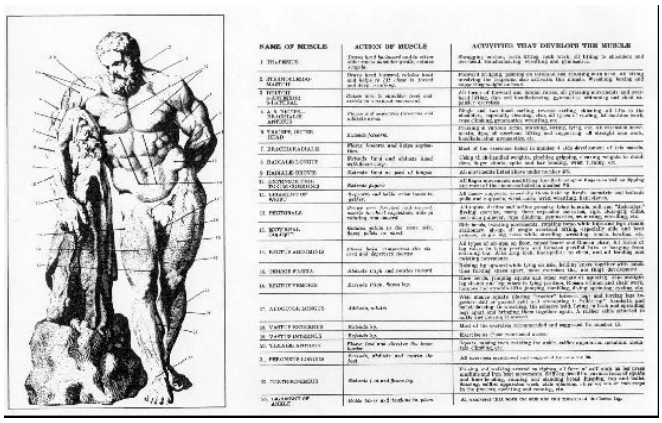
If you would like to contact me with any questions about the W.A.T.C.H. Protocol with light dumbbells or to submit testimonials and or before/ after photos of your results using this method I’d be delighted to include them in subsequent editions of the book. You can contact me at:

w.a.t.c.h.protocol@hotmail.com

A ppendix I

Chart showing the major muscles of the body.

(Zoom in to view)



NAME OF MUSCLE	ACTION OF MUSCLE	ACTIVITIES THAT DEVELOPS THE MUSCLE
1. TRAPEZIUS	Draws head backward and to either side; helps to raise shoulder girdle; rotates scapula	Swimming, rowing, pitching, golf, tennis, all lifting, to shoulder and overhead, hand-to-hand fighting, wrestling, and gymnastics.
2. STERNOCLEIDO-MASTOID	Rotates head, turning to opposite side; bends head and helps to lift chest in forced and deep breathing	Forward pitching, putting, to overhead and shoulder pressing lever, and strong breathing for exercise also activates like shoulder. Wrestling, boxing, all strong lifting and pulling.
3. DELTOID (CLAVICULAR PORTION)	Raises arm to shoulder level and carries it forward and inward	All forms of forward and lateral raising, pressing, overhead, and pressing, pull, lifting, throwing, and hand-fencing, gymnastics, swimming and about as good as anything.
4. & 5. TRAPEZIUS, DELTOID (LATERAL PORTION)	Pulls shoulder girdle backward and downward	Rowing, and two hand curling, reverse curling, chinning, all lifts to the shoulders, especially to the back, and to the sides, rowing, all exercises work, even climbing, gymnastics, wrestling, etc.
6. TRICEPS, OUTER HEAD	Extends forearm	Pressing, in various arms, pressing, pushing, lifting, etc., to overhead movements, rope, ring, all exercises lifting and supporting all straight arm work, handstands, chin (extension, etc.).
7. DELTOID (SCAPULAR PORTION)	Raises forearm and lifts sideways	Most of the exercises listed to number 4 also developing all side muscles.
8. DORSALIS COLLI	Extends head and abducts head sideways	Using all dislocated weights, pitching, pitching, throwing weights to shoulders, rope climbs, spins and bar bending, POWER LIFTING, etc.
9. DORSALIS DORSI	Extends head to part of longus	All movements listed above under number 8%.
10. LONGISSIMUS DORSI—SACROSPINALIS	Extends spine	All finger movements and lifting for the development of the wrist and fingers.
11. LEVATORES COSTARUM	Supports and holds erect trunk in action	All lower segments, especially of the back, shoulders, and buttocks.
12. SERRATUS	Draws ribs forward and upward, helps in forced breathing, holds in resting rib cage	All forms of lifting, pressing, pushing, pulling, throwing, rowing, swimming, etc., and especially, rope climbing, gymnastics, wrestling, and boxing, etc.
13. ROTATORES (Longus)	Rotates spine to the same side; bends spine to same	All forms of lifting, pressing, pushing, pulling, throwing, rowing, swimming, etc., and especially, rope climbing, gymnastics, wrestling, and boxing, etc.
14. RECTUS ABDOMINIS	Draws ribs downward and forward and depresses sternum	All forms of exercise, as those mentioned and forward bend, as forms of lifting, and pressing, and pushing, and throwing, and pulling, and rowing, and boxing, and wrestling, and swimming, and diving, and handstands, and walking, and running, and jumping, and climbing, and swinging, and hanging, and resting, and sleeping, and eating, and drinking, and working, and playing, and living, and dying.
15. RECTUS FEMORIS	Extends thigh, flexes leg	Kicking, jumping, running, and all forms of lifting, pressing, pushing, pulling, throwing, rowing, swimming, etc., and especially, rope climbing, gymnastics, wrestling, and boxing, etc.
16. SARTORIUS	Rotates thigh, flexes leg	Same as rectus femoris, but more emphasis on rotation and flexion.
17. ADDUCTOR MUSCLES	Adducts, rotates	Same as rectus femoris, but more emphasis on adduction and rotation.
18. TIBIALIS ANTERIOR	Raises foot and turns sole inward	Same as rectus femoris, but more emphasis on raising and turning.
19. TIBIALIS POSTICUS	Extends leg	Same as rectus femoris, but more emphasis on extending.
20. VASTUS EXTERNUS	Flexes foot and shortens the knee joint	Same as rectus femoris, but more emphasis on flexing and shortening.
21. PERONEUS LONGUS	Extends, abducts and rotates the foot	Same as rectus femoris, but more emphasis on extending, abducting, and rotating.
22. SOLEUS	Extends foot and flexes leg	Same as rectus femoris, but more emphasis on extending and flexing.
23. PERONEUS LONGUS	Extends, turns and abducts foot	Same as rectus femoris, but more emphasis on extending, turning, and abducting.

NAME OF MUSCLE	ACTION OF MUSCLE	ACTIVITIES THAT DEVELOPS THE MUSCLE
1. TRAPEZIUS	Draws head backward and to either side; helps to raise shoulder girdle; rotates scapula	Swimming, rowing, pitching, golf, tennis, all lifting to shoulder and overhead, hand-to-hand fighting, wrestling, and gymnastics.
2. POSTERIOR DELTOID	Raises arm sideways and backward	All rowing forms of exercise, heavy, also while handling oars, about opposite movements, etc.
3. INFRASPINATUS	Aids in rotating upper arm outward	As listed in exercises for the upper muscles, especially, as well as all rope hand lifting, climbing, swimming, rope climbing, tree for handling and all other dangerous work.
4. RHOMBOIDEUS	Pulls scapula up and inward	As listed in exercises for the upper muscles, especially, as well as all rope hand lifting, climbing, swimming, rope climbing, tree for handling and all other dangerous work.
5. TERES MINOR	Raises and adducts upper arm	Same as rectus femoris, but more emphasis on raising and adducting.
6. TERES MAJOR	Pulls arm inward and backward	Same as rectus femoris, but more emphasis on pulling and backward.
7. LATISSIMUS DORSI	Draws arm downward, backward and inward	See exercises listed in 4.
8. SPINATUS SPINAE	Supports and holds body erect in, pervis checking	Same as rectus femoris, but more emphasis on supporting and holding.
9. TRICEPS, LONG HEAD	Extends forearm and draws it back and inward	Same as rectus femoris, but more emphasis on extending and drawing.
10. TRICEPS, INNER HEAD	Works in conjunction with other and inward	Same as rectus femoris, but more emphasis on working in conjunction with other and inward.
11. FLEXOR CARPI RADIALIS	Flexes and rotates hand, and aids in flexing elbow joint	Same as rectus femoris, but more emphasis on flexing and rotating.
12. SUPINATOR LONGUS	Rotates hand outward	Same as rectus femoris, but more emphasis on rotating and outward.
13. PALMARIS LONGUS	Flexes hand	See exercises listed in 11.
14. FLEXOR CARPI ULNARIS	Flexes hand and helps to adduct it	Same as rectus femoris, but more emphasis on flexing and adducting.
15. TRICEPS, MIDDLE HEAD	Extends forearm and draws it inward	Same as rectus femoris, but more emphasis on extending and drawing.
16. FLEXORES DIGITORUM	Flexes fingers and thumb	Same as rectus femoris, but more emphasis on flexing and fingers.
17. ADDUCTOR MAGNUS	Adducts thigh and rotates it outward	All forms of exercise, as those mentioned and forward bend, as forms of lifting, and pressing, and pushing, and throwing, and pulling, and rowing, and boxing, and wrestling, and swimming, and diving, and handstands, and walking, and running, and jumping, and climbing, and swinging, and hanging, and resting, and sleeping, and eating, and drinking, and working, and playing, and living, and dying.
18. DELTOID	Abducts arm, lifting it to a level	All exercises listed in 1 to 4.
19. ANCONEUS	Extends forearm and rotates it outward	All exercises listed in 1 to 4.
20. SUPINATOR BREVIS	Rotates hand outward	All exercises listed in 1 to 4.
21. BICEPS, SHORT HEAD	Flexes forearm and rotates it outward	All exercises listed in 1 to 4.
22. BICEPS	Flexes arm and rotates it outward	All exercises listed in 1 to 4.
23. BRACHIALIS INTERNUS	Flexes forearm	All exercises listed in 1 to 4.
24. BICEPS, INNER HEAD	Aids in flexing	All exercises listed in 1 to 4.
25. PRONATOR LONGUS	Rotates forearm inward and flexes it	All exercises listed in 1 to 4.

A ppendix II

Acknowledgements

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