

SCS MTI #2

MTI-1

FOUR-HUNDRED HOURS

1

By Arthur Jones

Using a barbell, a squat rack, a chinning bar, a set of parallel bars, a pair of dumbbells, a sturdy bench, and a simple, home-made pulley device (all of which equipment can be obtained for a total of less than a hundred dollars), almost any possible degree of muscular size and strength can be developed--in less than four-hundred hours of training.

Two years of steady training, three weekly workouts of less than one hour and twenty minutes each, a total of less than four-hundred hours of training, will take anybody as close to the limits of his momentarily-existing ~~muscular size and strength~~ potential of size and strength as he can go; yet it is very common for bodybuilders to devote a total of more than six-thousand hours to their training--while still not producing best-possible results.

Many currently-active bodybuilders devote a minimum of four hours a day to their workouts, six days a week, a total of twenty-four hours of weekly training--and it still takes them at least five years to reach the top, if they ever do, and most of them don't; but just try to convince someone who has fallen into such training habits that far better results would have been produced by less than 10% of the same type of training.

The same "type" of training--barbell training--but with a difference, or, rather, with two differences; (1) far LESS training, (2) but MUCH HARDER training.

MTI-1

If three sets of any one exercise during each of three weekly workouts (a total of nine weekly sets) fail to produce good results--then it is almost certain that you are training TOO MUCH; yet many current bodybuilders are performing from twenty to sixty sets of each exercise, during each of six weekly workouts.

Most of our trainees perform only two sets of each exercise, and NEVER MORE THAN THREE SETS--and in many cases, only one set of each exercise--during each of three weekly workouts; an entire workout for the thighs requires less than four minutes; one set of each of three exercises--a complete workout for the arms (biceps, triceps and forearms) takes exactly seven minutes and twenty seconds. Longer, more-complex workouts would NOT produce better results--on the contrary almost any possible addition to the above-mentioned routines would reduce the production of results.

During his workout tonight, one of our trainees performed 34 reps in the leg-press with 600 pounds (on a Universal machine), immediately followed by 22 reps with 225 pounds in the thigh-extension, instantly followed by 11 reps with 450 pounds in the full squat with a barbell.

As a "pre-exhaustion" warm-up for his arm work, this same trainee performed 7 absolutely strict reps with 200 pounds in the standing barbell curl--no cheating, no body-swing, strict and slow.



The remainder of his arm workout involved two sets on a curling machine, two sets on a triceps machine, four sets of wrist-curls, one set of chinning-grip pulldowns, and one set of parallel dips; the entire arm workout (including the one set of barbell curls) took less than eight minutes--three such ~~workouts~~ workouts total exactly twenty-two minutes of weekly training for the arms.

And as I wrote the above paragraph, I was fully aware that many people--perhaps most people--simply will not believe what I have stated; having fallen into a habit of training their arms a total of six or eight hours a week, such people will find it very difficult to believe that far better results could have been produced by a tiny fraction of the amount of training they are accustomed to. Yet, when these same people see this trainee's arms, they find it difficult to believe their eyes; measured perfectly accurately, "cold", with the elbow straight and locked, at right-angles to the bone, on the first flex, this trainee's forearm is MORE THAN TWICE THE SIZE OF HIS WRIST. Pumped, his straight forearm is a full inch more than twice the size of his wrist--and he has rather large wrists.

So far as I know, only one man in history ever even claimed a forearm to wrist ratio of two-to-one; but this boy has it--and then some.

His upper arms? Big--almost unbelievably big; but due to the fact that so many lies have been quoted regarding arm measurements during the last few years, he doesn't quote his measurements.



An exceptional case? Certainly--most people could never get that big, no matter how they trained, regardless of how long they trained; this boy has far better than average potential--but his "potential" didn't produce his present muscular size and strength, HARD WORK DID.

Not long workouts, not frequent workouts--HARD WORKOUTS; workouts that would literally kill most people who attempted them without careful break-in training.

A few weeks ago, this boy took one workout at Hector Morales' gym in Tampa, Florida--and since then, quite a number of the people who watched him train have tried to duplicate his workout; with somewhat unhappy results at first. Hector called me a few days ago and said that practically everybody in his gym had been sick--literally sick--simply from attempting to follow a workout similar to the one they watched; finally, ~~he~~ he told them, "...look, I'm tired of cleaning up vomit, and besides, the place is starting to smell bad; when you can do one part of that workout without vomiting, then you can try two parts of it--but in the meantime, you people can start cleaning-up after yourselves."

Getting sick is NOT a requirement for producing good results; but a trainee who has not been training as hard as he should for best-possible gains WILL GET SICK AT FIRST--if he attempts actually-hard training without a careful break-in period. If a week or ten days of carefully outlined break-in training precedes the first hard workout, then most subjects will avoid any signs of sickness; but if not, then look out and don't later say that you weren't warned in advance.



Some people--actually, most people--are ~~usually~~ simply not prepared to work as hard as is really required for the production of best-possible results, and that attitude, of course, is strictly their own affair; but quite a number of such people--or people with such an attitude--have purchased one or more of our new machines under the badly-mistaken impression that they were buying an "easy road to success"--whereas, in fact, they were buying the HARDEST-POSSIBLE method of training. Or, at least, tools that make such harder training possible.

Free-hand exercises will produce little or nothing in the way of muscular size or strength--regardless of the amount of such exercise employed; primarily because such weightless exercises involve only a tiny fraction of the total number of fibers contained in the muscles being exercised--in effect, such exercise isn't "hard enough."

Barbell exercises can and will produce literally enormous degrees of both muscular size and strength--eventually; and the ONLY reason that barbell exercises are more productive than free-hand exercises is because they are HARDER--a much higher percentage of muscle fibers is involved in such work.

But if that is true--and it should be self-evident truth to anybody but a cretin--then just how much sense does it make to use a barbell in the "easiest-possible manner?" The entire value of a barbell exists in its ability to make harder work possible; but if you can't understand that simple fact, or if you are unwilling to use a barbell as it must be used for the production of best-possible results--then don't bother to read

the rest of this article. My writing is directed towards readers who are interested in producing the maximum degree of results--and who are willing to get those results in the only way possible, outright hard work.

The first point that must be clearly understood is that the "amount" of training has absolutely nothing to do with the production of worthwhile results; if exercises are performed properly, then any additional amount of exercise will reduce the production of results--IN ALL CASES.

Insofar as building muscular size and strength, exercise is capable of only two results--one good result, one bad result; and, ~~as a result of the exercise, the bad result is much easier to obtain than the good one~~ as in almost all other situations in this life, it is far easier to produce the bad result than the good one.

The bad result is produced in direct proportion to the "amount" of exercise--the good result is produced in proportion (but not in direct proportion) to how hard the exercise is; below a certain percentage of the momentarily-existing level of ability, exercise will produce nothing in the way of increases in either muscular size or strength--but exercise ALWAYS exhausts part of the recovery ability, in direct proportion to the amount of exercise involved, and regardless of how hard or how easy such training may be.

Two sets of an exercise involving the same number of repetitions and the same resistance exhaust your recovery ability exactly twice as much as

one ~~set~~ set--but even a thousand such sets will do nothing to stimulate growth if the required intensity-of-effort is below a certain percentage of your momentarily-existing ability.

And if only one set is capable of inducing a maximum amount of growth stimulation, then additional amounts of exercise are not only not required but are very pointedly not desirable; because any such additional exercise will merely exhaust your recovery ability without compensation-- will do nothing to ^{stimulate} ~~stimulate~~ growth while making it harder for you to grow

Once a nail has been driven ~~in~~ ⁱⁿ until the head is flush with the surface of the wood, then no additional amount of pounding will improve the situation--but it may weaken the wood so much that the nail then falls out; the situation is very similar when it comes to exercise-- you are trying to stimulate growth, and having done so, then you must do everything possible to assure such growth, and working to the point where growth becomes impossible is certainly not the way to go about it.

The frequency of workouts, the length of your workouts, the number of exercises involved, and the number of sets performed (in effect, the "amount" of exercise) must be limited to a point where growth remains possible--and if all of your recovery ability is required merely to replace the energy burned up, and ~~repair~~ repair the damage done by your workouts, then growth becomes IMPOSSIBLE.

Exercise CANNOT PRODUCE GROWTH if the the AMOUNT IS TOO GREAT--and

~~Exercise CANNOT PRODUCE GROWTH if the the AMOUNT IS TOO GREAT--and~~



NO AMOUNT OF EXERCISE WILL PRODUCE GROWTH if the INTENSITY-OF-EFFORT IS TOO LOW.

And just how can you tell when an exercise is hard enough--when the intensity-of-effort is great enough to induce maximum growth stimulation? And how can you tell what the correct amount of exercise should be in any particular case?

The first question is impossible to answer accurately--but it can be answered in a practical sense; it is at least PROBABLE that something a bit less than a ~~maximum-possible-effort~~ maximum-possible-effort will produce maximum degree of growth stimulation, but since it is impossible to determine exactly what the required percentage of momentarily-existing ability is, and since it is equally impossible to measure this "percentage of possible-performance" ~~factor~~ factor, the only practical solution is to work to the point of absolute failure during each set of every exercise--if a particular set is terminated anywhere short of outright failure, then you can never be sure that anything in the way of growth stimulation has been induced.

The second question ^{is} even harder to answer--but, again, it can be answered in a practical sense; if steady progress is not being produced, then you are probably training too much (assuming that the exercises are hard enough). Levels of both ability and energy should constantly increase; if they remain unchanged, then you are training a bit too much--and if they decrease, then you are training far too much.

SECRET

There is obvious individual variation in recovery ability, and almost anybody can markedly improve their recovery ability, and it is also possible to develop a tolerance for a literally enormous amount of exercise--but, regardless of any such variations, best results will ALWAYS be produced when the recovery ability is disturbed as little as possible.

The above-outlined facts are undeniable truth--in very plain words, a man who attempts to dispute them is a fool; ALL of the evidence is in support of these facts--and there is NO EVIDENCE TO THE CONTRARY. Yet literally hundreds-of-thousands of ~~people~~ ^{people} train ~~as if~~ as if they believe exactly the opposite; very few of their sets are performed in a manner that will produce much in the way of growth stimulation--and the amount of exercise is so great that growth would be impossible (or vary, very slow at best) even if any amount of growth-stimulation is being produced.

If you are training for "condition," for improvements in cardiovascular efficiency, or simply in an effort to reduce existing fatty-deposits, then other factors are involved--but we are concerned here with an attempt to produce increases in muscular size and strength. We are interested in producing the GREATEST-POSSIBLE DEGREE OF STRENGTH and MAXIMUM-POSSIBLE MUSCULAR SIZE, in a MINIMUM TIME PERIOD.

Thirty years ago, when I first started attempts in the direction of improving the then-best-existing tool (the barbell), it was obvious that the only possible hope of success depended directly, and entirely,

upon my ability to design tools that would make HARDER exercises possible. We did not waste time looking for ways to make exercises easier--because we clearly knew in advance that the value of an exercise depends entirely upon how hard it is.

Most of the other people who have been working in attempts to improve exercise tools have devoted their attention in exactly the wrong direction--their efforts have led them away from the truth, instead of towards it; almost all modern (conventional) exercise machines are FAR LESS PRODUCTIVE than a barbell--for several reasons, but primarily because they are "easier" to use than a barbell. If a man can perform ten repetitions with 200 pounds in the bench-press with a barbell, then he can easily handle far more weight for an equal number of repetitions in the bench-press performed on a Universal Machine; but take a man who has trained exclusively on such a machine and give him a barbell with the same amount of weight--and then stand well clear, so you won't be involved in the accident that may quickly follow.

There are certain, very clear, very definite DISADVANTAGES to train with exercise machines--even with our machines; and if a machine provides no advantages which more than compensate for the unavoidable disadvantages, then it should be obvious that better results would be produced by barbell training.

There are ~~some~~ some barbell exercises that are FULLY EQUAL to exercises performed on a machine incorporating all of the Nautilus exercise principles--and at least a few barbell exercises that

actually BETTER than similar exercises performed on any-possible type of machine; and for that very reason, I have repeatedly refused to supply machines for the purpose of ^{providing} exercises that are no more effective than (or less effective than) barbell exercises.

Exercise machines of any kind are justified only when they make it possible to do something that is impossible with a barbell--and then only if the improvements are in proportion to the increase in expense involved; most exercise machines are more "convenient" than a barbell, for several reasons--they are more comfortable to use, less dangerous, and more attractive. But you pay a price for that convenience--results will not be as good as they would have been if you had used a barbell instead.

In designing our machines, we have been concerned with the production of best-possible results--and we have been perfectly willing to let the resulting "convenience" be what it may; if the price of good results is unavoidable discomfort (and in some cases it is), then we are willing to pay that price.

Most bodybuilders spend at least two hours "pumping" their arms a half-inch; some of our machines will pump a muscular arm as much as a full two inches--in less than eight minutes. But if it is your impression that producing such a result is "easy," then guess again; with a barbell it isn't even possible--^{AND} it certainly isn't easy no matter how you do it.

WFL-1

We have produced machines that are so effective that one or two sets is all you need for the best-possible degree of results--and three or four such sets would be MORE THAN YOU COULD STAND; but it should be clearly understood that exactly the same statement is ^{almost} equally true when it is applied to barbell training--properly performed, two sets of a barbell exercise ^{are} all you need, and three or four properly performed sets are more than you ~~could stand~~ ^{NEED.}

~~With most barbell exercises~~

With most barbell exercises, it is literally impossible--not difficult, IMPOSSIBLE--to involve more than a small part of the muscle that you are trying to exercise; all you can do is perform each set of every exercise to the point of absolute failure--in order to at least involve as much of the muscle as you can.

With most conventional exercise machines, you cannot involve even as much of the muscles as you would with a barbell; so again, all you can do is perform the sets as hard as possible.

But in either case--with barbells or with conventional exercise machines--doing more sets is not the answer; more sets merely work the same few fibers over and over again--providing little or nothing in the way of growth stimulation, but tearing down your recovery ability.

With Nautilus machines, you are working all--or NEARLY ALL--of the total number of fibers contained in the muscles being exercised; ~~off,~~ at least, you are if the sets are carried to a point of failure--the



machines (like any tool) do not guarantee good results, they merely make good results possible.

So there are certainly some similarities between exercises performed with a barbell and exercises performed with a Nautilus machine--but there are some differences, too; very important differences--no matter how many sets you perform with a barbell, you are still only involving a small part of the muscles, but with a Nautilus machine you are involving all (or almost all) of the muscles. And while you certainly can develop a "tolerance" for a large amount of barbell exercise--an equal amount of exercise on a Nautilus machine would actually produce losses in both muscular size and strength, because you would exhaust your recovery ability far beyond its limits.

A large "amount" of barbell exercise may not--absolutely CANNOT--produce good results (fast progress); but you can, at least, eventually develop a sort of resistance to it--while such marathon workouts won't produce much if anything in the way of progress, they may not actually tear you down either.

How many ways can I state it? The facts are utterly simple, perfectly clear--yet bodybuilders of the moment are so confused over the issues that almost none of them have any slightest idea of just "how much" exercise is required; and very few of them are willing to work as hard as they should in order to produce worthwhile results.

CEP/DA

Many currently-active bodybuilders sincerely believe that good training progress can be produced only by devoting yourself entirely to your workouts--and by avoiding almost any other interest or activity; such an attitude ~~(sometimes)~~ frequently leads to neglect of other important areas of development, both physical and mental--but it WILL NOT produce good results.

It should be clearly understood that "outstanding development" is no proof of good training results; before any such judgement can be rendered, many factors must be considered--the individual potential of the subject in question, how long he trained in order to produce his final degree of results, how often he trained, how much time each of his workouts required, and how much (if any) he sacrificed other aspects of living.

If you must literally become a slave to your training, if you must give-up everything else--then no degree of possible results is worth such a price; but many bodybuilders obviously believe that such total devotion to training is the required price for good results--and they are willing to pay that price. While, in fact, the truth of the matter is that they would actually have produced far better results if their training was reduced on the order of 75%, if they trained only half as often, and half as long during each workout. And it is equally true that best-possible results will almost always be produced by a subject who leads a completely normal life apart from his training.

GENOVA

Many years ago, when I was learning to fly, my instructor was disturbed about my "attitude"--he couldn't understand why I didn't become an airport-bum, why I didn't hang around the airport constantly when I wasn't flying; so I asked him if there was something wrong with my flying.

"No," he said, "your flying is good, but you obviously don't think that flying is the most-important thing in life."

So I asked him, "Is it?"

Too many years later, I still hold a valid airline captain's license, and I still enjoy flying, but it still isn't my only interest--and in the meantime, I have owned an international airline, have flown over every continent except Antarctica and almost every country in the world, have flown a helicopter through the gorge of the Victoria Falls in central Africa and a light plane down inside the cone of an active volcano in Mexico, have ~~walked~~ walked away unscratched from a crash on top of a mountain and have flown more than fifty miles to a safe landing with a large tree stuck halfway through one wing, and so many other things that I don't even remember half of them. So I've done my share of flying--but I've done a lot of other things, too; flying has been an important part--but a SMALL PART--of my life, and I never became a slave to that interest. And I am and have been a better pilot because of those separate interests--not in spite of them.

The same "attitude" towards training will help produce best-possible



results; even though such an attitude may seem as strange to most bodybuilders as my attitude towards flying did to my flight instructor.

WHEN YOU ARE IN THE GYM, then devote yourself to your training with all-possible concentration; but when your workouts are finished, get out of the gym and put the subject as far out of your mind as you can. Don't worry about what "affect" some other normal activity may have on your training progress; no reasonable amount of any normal activity will have an adverse effect on your progress--but worrying about it will!

My personal approach to ~~everything~~ ^{everything} has always been that I am "willing to do ANYTHING that is required for producing best-possible results." But I learned long ago that TOO MUCH devotion to any ~~goal~~ ^{goal} is almost as bad as too little attention.

If developing the maximum-possible degree of muscular size and strength was my goal, and if training sixteen hours a day was the required price for such results--then I would do so; but at the same time I would do everything possible to assure myself that such long training really was necessary.

When I first became interested in trying to produce better results from exercise, I had no particular method or system or "amount of training" in mind; I was literally prepared to do ANYTHING that would give me the results I was seeking--but I did not want to do anything that wasn't necessary. My attitude remains the same--more than thirty years later.

CONFIDENTIAL

During those years, I have learned that some barbell exercises are so good that it seems to be literally impossible to improve them in any way--and that some other barbell exercises are so close to being perfect that any possible degree of improvement would not justify the expense involved; but I have also discovered that most barbell exercises can be improved upon--and my primary attention in this field has been directed towards attempts to build machines that will provide this needed improvement.

And I have also discovered that exercise machines of any kind have certain disadvantages by comparison to similar barbell exercises; most of these disadvantages are related to the fact that exercise machines provide "guided resistance"--a form of resistance which cannot move in more than one direction. As a result, most exercises performed on machines do little or nothing for balance, muscular coordination or "feel;" thus, if the use of a machine is to be justified, it obviously must provide some sort of a result that more than compensates for this shortcoming--a result that is impossible without the use of the machine. If not, then you are better-off with a barbell.

Almost all conventional exercise machines merely attempt to duplicate the functions of a barbell--and many of them certainly do provide quite a bit in the way of "convenience;" but almost all of them do so only at the price of a loss in efficiency.

We have taken the opposite approach; we have tried to build machines that ACTUALLY WILL DO what you are TRYING TO DO with a barbell.



In some cases, that is simply impossible to do--and in such cases we still use a barbell; but in many cases, we have built machines that are so far superior to a barbell that there is literally no reasonable basis for comparison.

When I first tried to build an improved exercise-tool, I would have been more than satisfied with a 10% degree of improvement; but that was long before I even dreamed of the real possibilities--and now, anything less than a 400% degree of improvement is totally unacceptable to me, and many of our machines are so effective (by comparison to a barbell) that the percentage of improvement is almost literally infinite. And in some cases, it is:

You think not? Well, if you can produce a result in two days that could not be produced with a barbell in twenty years, just what degree of improvement does that represent? If a man has failed to add anything to his arm size during two years of steady barbell training, and if you then add a full half-inch to his "cold" upper-arm measurement in two days--just what sort of improvement ratio is that. If a man has NEVER been able to pump his arms more than a half-inch during ten years of steady barbell training, and if you then pump his arms nearly two inches in less than eight minutes--then what degree of improvement is that?

Why is such a degree of improvement even possible? Well, a number of factors are involved; but I think the following brief example will make the situation clear. Sometimes, when people visit the high school

18

gym in Deland, Florida (where I am training a number of athletes from all over the country), and when such visitors have difficulty understanding an explanation of the physical principles incorporated into our new types of exercise machines, or fail to realize the significance of these principles--then I perform the following simple and perfectly clear demonstration.

First, I have them place one of their feet solidly against the floor, and then I drop a 1 1/4 pound ~~plate~~ barbell-plate on their foot from a height of about four inches; no damage is done to the foot, of course, and no pain is involved--even though I drop the plate on their foot a total of twenty times.

Then, secondly, I have them place their other foot in the same position--and I reach for a twenty-five pound barbell plate; then I say, "...alright, I dropped twenty-five pounds on one of your feet (20 x 1 1/4), and now I am going to drop the same amount of weight onto your other foot; then we will compare the results." Then I drop the twenty-five pound plate.

What happens? Well, so far, everybody has had sense enough to move their foot, so I don't really know "exactly" what would happen; but the twenty-five pound plate always hits the floor so hard that it knocks a good-sized chunk out of the concrete--and it is thus obvious even to a total idiot that ^{twenty} ~~two~~ times one-and-one-quarter pounds is not always exactly equal to twenty-five pounds, even if the figures do add up to the same total.

CONFIDENTIAL