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Time... as a Factor in Exercise

Time is a factor in almost everything… a very important factor in exercise, for a number of reasons. And many of the problems in exercise are directly related to time.

About thirty years ago, somebody said… "Instead of trying to find out just how much exercise you can stand, we should be trying to determine how little exercise we really need."

Yet, thirty years later, we still find most people training far too much… and make no slightest mistake on this point, the most common mistake in exercise today is gross overtraining, far too much exercise.

Which simply proves that one of the time factors in exercise is widely misunderstood… but so are the others. Misunderstood and thus incorrectly applied; the result being that most of the time devoted to exercise is wasted, and a large part of the time is actually counterproductive.

Properly applied, any and all time devoted to exercise should be productive… and it can be, but seldom is. In very simple terms, that means that every minute devoted to exercise should produce a certain result, a measurable result; if not, then the time is wasted... or worse, may actually produce a loss in functional ability rather than an increase.

Proper exercise is capable of producing steady and rapid increases in functional ability… greater strength, increased flexibility, improved cardiovascular condition, faster speed of movement, and other very worthwhile benefits. And, contrary to popular opinion, it does not take years to produce such benefits… or it should not, it need not; but in practice it usually does… it usually does because most people have no clear understanding of the really very simple cause and effect relationship involved in exercise.

Opinions? Oh, yes… they certainly have opinions, and strong beliefs; but facts and opinions seldom have much if anything in common. As a result, we see thousands of people putting their opinions into practice… then spending years in an attempt to produce a result that could have been produced in a matter of weeks.

Exercise is performed for only one of two possible reasons… one, for the purpose of stimulating a physical change… or, two, for the purpose of preventing a physical change.

On the one hand, exercise is performed in an attempt to stimulate an increase of some kind, increased strength, increased flexibility, increased cardiovascular condition or increased speed of movement.

Or, on the other hand, exercise is performed in an attempt to prevent a loss in one of these same areas of functional ability. So exercise is thus intended either to stimulate change or to prevent change.

But please note that exercise does not produce a change of any kind… no worthwhile change at least; any actual change that is produced by exercise will almost certainly be an injury of some sort. Changes that result from exercise are actually produced by the body itself… all that exercise can do is stimulate the body to change.

So, the real purpose of exercise is stimulation… and properly applied exercise will provide growth stimulation of one kind or another. And, once stimulated, the healthy body will change in a worthwhile manner.

Many hundreds of examples of rapid growth clearly prove that the body is certainly capable of producing rapid and large-scale increases in muscular size, strength, flexibility, and cardiovascular condition… and remember, it is the body that produces such changes, not exercise.

All that exercise does is stimulate change, it does not produce change.

So, if the body is capable of producing a rapid rate of change, which it is, but if the actual changes occur very slowly… then obviously something is wrong. Something is wrong with the stimulation, something is wrong with the exercise.

And, it should be clearly understood… if the stimulation is proper, then very little stimulation is required. Whereas if the stimulation is correct, then no amount of improper stimulation will produce a worthwhile result.

You might compare exercise and growth to a stick of dynamite and a hammer. If you hit a stick of dynamite lightly with a hammer, nothing will happen, and it makes no difference how many times you hit it, as long as the blows are light… because a light blow will not stimulate an explosion, and several light blows are not equal to one heavy blow.

But, if you hit it hard, then only one blow is required. Below a certain level of force, no stimulation is produced… but above a certain level of force, then the required stimulation is provided and an explosion will result.

Much the same sort of situation exists in exercise… light exercise will not provide the stimulation required for change; so heavy exercise is an absolute requirement for the stimulation of physical improvement… but large amounts of such stimulation are neither necessary nor desirable. In effect, it takes only one hard blow with the hammer to set off the explosion.

It takes only one properly placed shot to kill a rabbit, or an elephant… additional shots will serve no purpose except unnecessary destruction of the meat. And the same thing is true in exercise; having properly stimulated growth, then you must leave the body alone and permit it to respond to the stimulation… and that takes time. The stimulation of growth can occur almost instantly, but the growth that occurs as a result of such stimulation can not occur instantly… instead, it takes time, a minimum of two days, and sometimes longer.

So exercise should not be repeated too frequently… and in practice this means that you should not perform more than three workouts within a period of a week. Daily training is neither necessary nor desirable… additional workouts will not produce better results. On the contrary, four weekly workouts will produce less results than three weekly workouts… five weekly workouts will produce very little in the way of worthwhile results… and six or seven weekly workouts may well produce an actual loss in functional ability. So, in the case of exercise at least, more is certainly not better.

Proper frequency of workouts thus becomes the first rule involving the time factor in exercise… train often enough, but not too often; in practice this means at least two weekly workouts, but not more than three.

Why a minimum of two weekly workouts… and why a maximum of three weekly workouts?

Because, if you train less than twice a week, the resulting period between workouts will be too long… and if you train more than three times a week, then the resting period between workouts will be too short. A certain period of rest is required between hard workouts, but this rest period should be neither too short nor too long; in general, you should permit at least forty-eight hours of rest between hard workouts, but not more than ninety-six hours.

Less than forty-eight hours between hard workouts will not allow enough time for full recovery… more than ninety-six hours is too long.

On a three workout per week schedule, Monday, Wednesday, Friday for example, you are permitted forty-eight hours of rest between the Monday and Wednesday workouts, and between the Wednesday and Friday workouts… and seventy-two hours of rest between the Friday and Monday workouts. In most cases, this is the best schedule.

But please note that I said hard workouts… which is not meant to imply that no activity of any kind should occur during the rest period between hard workouts. Normal or even medium level activity will have no adverse effect… but do avoid any really high-intensity activity between workouts. In effect, train for strength three times weekly, and train very hard but very briefly… then work on your skill during the off-days between workouts (Editor: this article was originally intended for athletes).

Regardless of your condition, you cannot fully recover from a hard workout in less than forty-eight hours, but light or medium activity during the rest period will not prevent or delay your recovery.

At the start of training you will have little or no desire to train hard more than three times weekly… but later, as your strength and condition improve, there will be a strong temptation to train more often; but do not, since training too often is one of the worst mistakes you can make. If your progress is less than you hoped for, then the chances are that you are training too much rather than too little... training more is almost never the answer. Believe it or not, training too little is far better than training too much; and if you are devoting more than two hours to weekly strength training, then you are training too much.

That is right, two hours a week are too much… yet, in practice, we see thousands of people training three or four hours a day. But it should be clearly understood that such people are not training that much and also training hard… they are training a lot, but they are not training very hard. Three hours of actually hard training during one workout would put a well-conditioned gorilla into the hospital… and a week of such daily workouts would put him into the grave. The idea is to stimulate growth, not to kill yourself… and it takes very little hard training to produce maximum growth stimulation. Remember, training merely stimulates growth, it does not produce growth.

Which brings us to the next time-related factor in exercise, the length of time that should be devoted to each workout. Which point is subject to misunderstanding… and which point is largely determined by the purpose of the training.

If the training is performed only for the purpose of increasing strength, then any reasonable length of time can be devoted to the workout without ill effects upon the production of results… although, even in that case, the workouts should not require more than an hour. However, if the training is performed for the two purposes of increasing strength and improving cardiovascular condition, as it should be, then the training time should be much shorter.

Exactly how much shorter? Well, this is where the misunderstanding may enter the picture; the workout should be as brief as possible without compromising the strength-building aspects… which qualification I will now attempt to explain.

Strength increases are stimulated by high intensity of work… a muscle must be worked to, or very near, a point of momentary failure. In practice it appears that approximately eight to twelve repetitions should be used for upper-body exercises and about twenty repetitions for lower-body exercises… but regardless of the actual number of repetitions performed, the exercise must be continued to a point where it is momentarily impossible to perform another repetition in good form.

In effect, if you could have done twelve repetitions but you stopped after only ten, then that exercise was probably wasted… little or no growth stimulation will be produced.

Do not continue an exercise to the point where it becomes necessary to change the style of performance in order to continue… doing so will result in throwing the weight instead of lifting it, and this is neither necessary nor desirable, and is dangerous.

But do continue for as many repetitions as you can possible manage in good form… do not terminate the exercise simply because the movements became very hard, or because the muscles start to ache; strength building exercise literally must be hard, and if it is properly performed it will make the muscles ache.

In a set of twelve repetitions leading to the point of failure after the twelfth repetition, the first ten repetitions are largely preparation… most, perhaps all, of the actual growth stimulation is produced by the final two very hard repetitions. So if you stop one or two repetitions short of a point of actual momentary muscular failure, then a very large part, perhaps all, of the benefit will be missed.

Every single exercise in the entire workout must be performed in this same manner… each exercise must be carried as far as possible in good form. Do not terminate any exercise if it is possible to squeeze out one more repetition in good form.

Then… when one exercise is properly completed, move on to the next exercise as soon as possible; but not too quickly… not so quickly that your breathing or pulse rate acts as a limiting factor.

If you move on to the next exercise too quickly, then you may become light headed… or may even become nauseated. So you must permit a short breathing space between exercises… at least at the start of actually heavy training.

At first, you may require about two minutes of rest between exercises; but as time passes you should gradually reduce the rest period between exercises… and eventually, you should be able to go through a full workout with little or no rest between exercises. It may require two months of really hard training before you reach a condition where you can go through a full body workout almost nonstop, moving immediately from one exercise to the next.

But do not rush it too much… if you do, then you will be unable to work the muscles as hard as they really require for the best results. And do not permit the workouts to degenerate into a race against the clock; your total time for a workout should gradually decrease, and it will… but the important thing is to be very sure that the muscles are worked properly, and they will not be if you rush through the workout too fast.

Try to treat each exercise as a thing unto itself, as if each exercise were the complete workout; try not to think about what has happened before or what is to follow… if you hold back in anticipation of the next exercise, then you are defeating the purpose.

Which brings us to the next time related factor, the speed of movement during the exercises. Which point, at the moment, is of enormous controversy… with some people saying train as fast as possible, and others saying almost the opposite. So just what is the best speed of movement? Well, quite frankly, nobody knows… although some people would have you believe that they do know.

But I can tell you what we have learned from our (Nautilus) own experience; we have found that a fairly slow speed of movement produces far better results than a fast speed of movement… much, much better results.

I can also tell you, and I can prove, that a fast speed of movement during exercise does the following: It jerks the muscles violently during the first few degrees of movement… after which point the weight is moving so fast that the muscles literally are not involved in the rest of the movement. The result being that a dangerous yank is imposed on the muscles at the start of the movement and then absolutely nothing is accomplished during most of the movement. In such cases you are throwing the weight not lifting it… and such a style of training will produce nothing but injuries.

Yet, in practice, that is exactly how many people train… which probably explains why it takes them years to produce a degree of results that could have been produced in an equal number of weeks; and certainly explains why people who practice such a style of training eventually injure themselves seriously.

And… do not be confused by the current crop of double talk about fast-twitch and slow-twitch muscle fibers (Editor: i.e., That you must move quickly to stimulate fast-twitch fibers); which is another subject that absolutely nothing is known about at this point in time… although, again, this is a subject where some people would like to mislead you into believing that they do know quite a lot on the subject.

As recently as four years ago, we used a very fast speed of movement in exercise… but since then we have learned better, and I am certainly not ashamed to admit my past mistakes… and now we produce better results in six weeks than we used to produce in six months.

During the course of an extensive research program conducted at the United States Military Academy, West Point, in April and May of 1975, a large group of varsity football players increased their strength an average of nearly 60 percent within a period of only six weeks. As a result of only seventeen brief workouts that averaged less than thirty minutes each, a total of less than eight hours of training time.

These subjects performed only one set of each of approximately twelve exercises in every workout, and their speed of movement was fairly slow; yet several times as great as any results ever shown by anybody else in any other research program, literally several hundred percent better… a level of improvement that was previously considered impossible, and is impossible with any other type of training style.

No injuries were caused during the program and several subjects who started the program suffering from previously injured hamstring muscles finished the program with no remaining traces of injury… having totally recovered from their previous injuries and having greatly increased the strength of their hamstrings as well as all other major muscular structures in the body.

In addition to the enormous average strength increases, these subjects also improved their cardiovascular condition to the point that they reduced their average time for the two minute run by eighty-eight seconds… and they also improved their flexibility from ten to twenty times as much as a control group of other football players who were trained in a conventional fashion.

Such results are not accidental, and such results cannot be produced in any other fashion… but it should also be clearly understood that such results probably cannot be produced without supervision; most subjects either can not or will not push themselves to the point required for best results, so supervision is of great importance, and this is true regardless of the equipment being used.

A supervised group of cadets increased their neck strength an average of nearly 92 per cent in only six weeks… while an unsupervised group improved only 57 per cent; still very good, but nowhere near as good as the supervised group.

But you certainly would not consider sending your group out to practice without supervision, so why should you expect them to train properly without supervision?

Supervision does not produce results, but it should assure a proper style of performance… and remember, a proper style of performance is frequently the only difference between very good results and no results at all. And this is equally true in exercise or anything else.

Properly performed exercise is capable of producing far better results than most people even suspect…so, since you are spending the time and making the investment, why not get the best results you can?