

# My First Half-Century in the Iron Game

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I have noticed that some writers, including whoever wrote the Bill Pearl series, are still making a big point about telling people not to continue an exercise to a point of failure; and, of course, they have every right to express their opinions. But I strongly suspect that many of these statements are being made for no better reason than a desire to disagree with my stated opinions. If not, if they really believe their own advice, then I am forced to ask myself why they make such statements. What are they suggesting that you avoid? What danger lurks in wait for anybody dumb enough to follow my advice? If they have any such reason I would sure like to hear it.

It does not, after all, take a rocket scientist to figure out the utterly simple cause and effect relationship that causes an injury: an injury is produced only when an encountered force exceeds the structural integrity of some part of your anatomy, and if you have been reading my articles you should by now have noted that I have repeatedly stated that you should avoid all activities that produce high levels of force, things like power cleans, jump squats and other insanities.

Without resistance, an exercise has no benefits; without force there is no resistance; so force is an unavoidable requirement for meaningful, productive exercise. And, as you become stronger in response to the growth stimulation provided by exercise, you must increase the force of resistance; if not, if you continue to train with the initial level of resistance, then the exercise is not progressive and the stimulation required for additional growth is no longer being provided. Such required progression in exercise can be provided in either, or both, of two ways: by increasing the number of repetitions, or by increasing the level of resistance, and in practice you should use both ways.

However, increasing the number of repetitions in order to make the exercise progressive works only up to a certain point, after which point it becomes either useless or counterproductive. In practice, for most people, the resistance should be light enough that you can perform at least seven repetitions of the exercise, and if not then the weight is too heavy; but, as you become stronger in response to the exercise, you will be able to perform more repetitions; then, when you can perform ten repetitions in good form, lifting the weight smoothly at a reasonably slow speed, it is time to increase the weight by about 5 percent. Having increased the weight to that extent, you will probably find that you can then perform only about eight repetitions in good form; if so, then stay with that higher level of weight until you can again perform ten repetitions, and so on.

Sometimes, having for the first time been able to perform ten repetitions in good form, and then having increased the weight by 5 percent, you may then find that you can perform ten repetitions with this heavier weight during your next workout; if so, then increase the weight by another 5 percent. But do not stop the exercise simply because you can perform ten repetitions; instead, continue for as many repetitions as possible in good form, and if the number is ten or more then increase the weight for your next workout.

Having done no training of any kind for several years, I once started an exercise with 160 pounds and was able to get ten repetitions, but could not perform an eleventh repetition; so I increased the weight to 165 pounds for the next workout, and again got ten repetitions, and so on. Workout by workout I added 5 pounds each time, and always got ten repetitions until I reached a level of 230 pounds; whereupon I was able to get only nine repetitions the first time I used that weight.

After being “stuck” at that level for a couple of workouts, I was able to get ten repetitions with the 230 pounds, so then I increased the weight to 235. After which point my continued progress was neither as fast or as steady as it had been previously, although I did continue to get stronger from workout to workout with almost nothing in the way of “sticking points.”

I must, however, point out that I was replacing size and strength levels that I had built previously and then lost when I stopped training for a period of years; building those size and strength levels the first time took somewhat longer, although I always was a fast gainer.

## The Arthur Jones Collection

I spoke with Dan Riley, who has been the strength coach for the Washington Redskins Professional Football Team for the past 14 years, on the phone last week, and he reminded me of something that happened twenty-plus years ago while we were conducting research at the United States Military Academy, West Point, where he was then on the school staff in the Department of Physical Education.

Dan and I were about the same height, weighed almost the same, but he was younger than my youngest child, and while he had been training for several years I had done no training at all for about two years; his arms, at the time, were one and one-half inches larger than mine. So I bet him that I could build my arms to a size larger than his within a period of less than a month; he accepted the bet and immediately started a literally frantic training program for his arms. The agreed-upon time passed and we remeasured our arms, “cold” and accurately; and I won the bet. I won that bet by a greater margin than I expected to because Dan actually lost some arm size during that period as a result of overtraining. Until he reminded me of this occurrence last week, I had forgotten it.

In some respects I have always been patient, but in other ways was very impatient; I never could, for example, force myself to continue something when no progress was being produced, and this was particularly true in regards to exercise. I would continue training as long as I was making steady progress, increasing my size and strength; but when I stopped gaining for a couple of weeks I would immediately stop training altogether. And I would stop training even though I knew that if I did so I would then start losing some of the size and strength gained earlier.

My lifestyle being what it was for a period of about thirty years, with a great deal of travel, I was sometimes forced to stop training even when I was still gaining. But, regardless of just why I stopped, I would always start training again after circumstances made it possible to do so; providing only that my having stopped in the first place was not a result of a period of training that produced no results. Over a period of years I was thus “up” and “down” somewhat like a yo yo ; up in size and strength after even a few weeks of steady training and down after I had stopped training for several months, or in some cases several years.

But, when I did train, one thing was always constant: I always trained to failure, never stopped an exercise so long as it was possible to perform another repetition. Nobody ever told me to train that way, I just did it because it seemed to make sense, and it certainly worked for me. I assumed for a long time that everybody trained that way, and was later somewhat surprised to learn that a lot of people did not train in that manner.

Having been up and then back down from such sporadic training, or lack of training, several times, I eventually knew exactly what to expect from either training or a prolonged layoff: after several months with no training, my bodyweight would drop to 160 pounds stripped and my arm size would drop to 14 inches, and then I would afterwards maintain that size and weight with no training of any kind; but within a very few weeks after I started training again my weight would go up to 172 and my arm size to 15 3/8 inches cold, and then I would become stuck at that size and weight. During that period I used four sets of each of twelve exercises and carried every set to failure.

Later, when I finally had sense enough to reduce my amount of training by fifty percent, then using only two sets of each exercise instead of four, I immediately broke out of my previous sticking point and quickly gained weight, size and strength that had previously been impossible for me to gain.

Then, even later, I cut back my training some more, performed two sets of only eight exercises and gained even faster, quickly reaching a stripped weight of 205 pounds and an arm, size of 17 1/8 inches. And my strength went up in proportion.

The lessons learned from these experiences came across loud and clear, at least to me: when I started training after a prolonged layoff, when still performing four sets of each exercise, I gained rapidly for a while but then stopped gaining; because, having then become much stronger, I was then overtraining to such an extent that additional gains were impossible. Later, after I cut my training from 48 sets per workout to only 16 sets, a reduction of 66 2/3 percent, I was no longer overtraining and thus additional growth became possible for the first time.

## The Arthur Jones Collection

I always trained three times each week, but I now believe that I would have gained even faster if I had trained only twice each week, and if I had used only one set instead of two sets; such an additional reduction in the amount of training might not have produced any better final results, but would have, I believe, reduced the time required to reach that same level.

NOW BACK TO MY INITIAL POINT: the supposed “danger” from training to failure. Keeping it clearly in mind that injuries come from a situation where applied force exceeds structural integrity. If you can perform only one repetition with 100 pounds, if that is your 1RM (one-repetition maximum), then you probably could have performed ten repetitions with 83 pounds; and while that relationship between maximum strength and muscular endurance varies greatly from one person to another, or even from one muscle to another, it happens to be the relationship that applies to most of my muscles so I will use it in the following example.

Thus, given a maximum strength of 100 pounds, if we train with 83 pounds of resistance, the force applied to the body is not maximal, and as we continue the exercise the imposed level of force remains constant throughout the exercise, is exactly the same during each repetition. Yes, it will “feel heavier” as we continue, and by the last repetition will feel very heavy, but that occurs as a result of fatigue from the exercise and is not a result of an increasing level of resistance. Thus the last repetition is no more dangerous than the first one was, regardless of what it feels like at the time.

Then, assuming that you fail after ten repetitions, find that it is momentarily impossible to perform an eleventh repetition, you fail because your remaining level of strength has dropped below the level of resistance, not because the weight is then dangerously high. Given the figures above, your strength when you fail would probably be about 80 pounds, but 80 pounds of force from your muscles will not lift 83 pounds of weight, so you are forced to stop.

Having done that, you have done everything possible to stimulate increases in size and strength in the worked muscles; repeating the exercise for multiple sets adds nothing in the way of growth stimulation but does reduce your recovery ability and thereby makes growth more difficult. Stopping one or two repetitions short of failure may stimulate growth, but not to the degree that going to failure will, and stopping short of failure does not reduce the danger of the exercise, regardless of what any of today’s self-appointed “experts” may tell you to the contrary.

Training to failure is certainly “harder” and somewhat more painful than stopping short of failure, but these minor disadvantages are more than compensated for by much better results; providing, that is, that you do not repeat my earlier mistake of overtraining.

You have a simple choice if you want good results from exercises: you can train hard, or you can train a lot, but you cannot do both while producing good results.

I trained off and on for nearly fifty years, and always trained as hard as possible, and produced very good results after I finally became smart enough to stop overtraining, yet I never hurt myself in any way from training; avoided training injuries in spite of many serious injuries from other things, starting with a broken arm when I was born and continuing through a lion mauling that broke both my neck and my shoulder and two crushed knees from a jeep wreck as well as six bullet holes. Some of these old injuries are now giving me problems, but did not bother me at all until I was well past sixty years old. But I have no current problems resulting from my previous training.