

# My First Half-Century in the Iron Game

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A recent publication stated, in an article about exercise machines . . . “providing all the advantages of free weights with the safety and comfort of a machine.”

Really? Just what are the “advantages” of free weights? If you are not involved in competitive weightlifting, the only advantage of free weights is cost. But if you are involved in competitive weightlifting, then you must use free weights in order to develop the skills required for that activity.

The current controversy on the subject of the relative merits of free weights versus exercise machines started about twenty-five years ago shortly after I introduced the first Nautilus machines, and this argument has been ongoing ever since.

Productive exercise that is performed for the purpose of increasing muscular size and strength requires the use of relatively heavy resistance that can be progressively increased as you become stronger, and the barbell provided the first practical form of such resistance. Before the introduction of the adjustable barbell, the only productive exercises that were available were a few gymnastic-type exercises like chinning and dipping movements performed on parallel bars. Nothing else worked to a meaningful degree, and most of the exercises that preceded the introduction of the barbell were simply worthless. Were, at least, worthless for the purpose of increasing muscular size and strength.

So the adjustable barbell provided the first truly “productive:” tool for that purpose. But, in a very real sense, the barbell was literally too productive for its own good: for the first time in history, at least a few men appeared on the scene who were so muscular that they appeared to most people to be freaks. Rather than being admired, such men were usually ridiculed, looked upon with scorn. A widespread attitude that was directly responsible for many of the myths and superstitions that we are still stuck with: they were “muscle-bound,” were “slow” and “clumsy,” had ruined their hearts and ruptured themselves, could not punch their way out of a wet paper bag, could not compete with “true athletes,” and so on. All of which beliefs, of course, are pure bullshit.

So, make no mistake about it, a barbell can be a very productive tool; but it does not follow that a barbell is a perfect tool. Designed by me, the first Nautilus machines were intended to be nothing more nor less than improved barbells. But, as things turned out, the following success of Nautilus machines was primarily a result of their “practicality.” In a health club or a gym that catered to large numbers of people, a barbell was not a very practical tool, but Nautilus machines were. The explosive growth of health clubs that occurred in this country during the 1970s and 1980s probably could not have happened without Nautilus machines. But I will not argue about just which was cause and which was effect: that is, did the availability of Nautilus machines produce the explosive growth of health clubs, or did that growth of health clubs make Nautilus a success?

Since most “hard core” bodybuilders spend most of their lives almost desperately looking for some “secret to instantaneous success,” it rather naturally followed that many bodybuilders were initially attracted to Nautilus machines; but, unfortunately, that was usually not an attraction that stood the test of time, and eventually most of these people went back to training with barbells. Why? Because most of these people were looking for some sort of miracle, were seeking results that were simply impossible to produce with any tool; impossible, at least, for themselves, impossible for them because they did not have the genetic potential for such results. But having seen at least a few examples of such results that had been produced by other people, they were convinced that they too could produce similar results if they could somehow manage to discover the “secret.”

Very damned few, if literally any, of these people had sense enough to actually understand the very real differences between exercise machines and barbells; and, twenty-five years later, you can still count the number of such truly knowledgeable people without exceeding double digits; which is to say, probably less than a hundred people living today actually understand these differences. If so, they must be hiding out in a cave somewhere because they have not come to my attention.

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Which, of course, means that the controversy on the subject of barbells versus exercise machines still continues and is, if anything, increasing. Which also serves as clear proof of widespread stupidity, because it does not require a rocket scientist to understand the actually simple factors that are involved in this controversy.

I believe that I am aware of all the arguments that have been brought forth in attempts to show some sort of an advantage for a barbell over an exercise machine, and, quite frankly, all of them are utterly stupid. For example: it has been frequently stated that a barbell provides a “natural” form of resistance for exercise, whereas an exercise-machine movement is somehow “un-natural.” A machine supposedly limits the path of the resistance in such a fashion that only part of a muscle is involved in the exercise; whereas, supposedly, a barbell provides a more productive exercise because the path of the resistance is not limited in such a fashion.

Bullshit: in fact, a barbell limits the path of the resistance to a much greater degree than a machine does. While performing a bench press, for example, the use of a barbell requires you to follow a very narrow path while lifting the weight; if you deviate from this narrow path you will lose control of the weight and drop it. Whereas, with a machine, you are provided with the capability of following any one of a great number of possible paths while lifting the weight, without the risk of dropping the weight.

But, some idiots will try to tell you, the requirement to balance a barbell so exactly during a bench press is supposedly some sort of an advantage because it serves to develop the muscles that are required to perform this balancing act. Bullshit again: in fact, the most likely result is an injury to the so-called “balancing muscles.”

If you intend to become involved in power lifting competition, where the skill required to perform a bench press is required as well as strength, then you must practice with a barbell; but if developing the muscles that are involved in a bench press is your only goal, then you are much better off with a machine. A properly designed bench-press machine will provide you with a much greater range of movement than you can produce with a barbell, more stretching in the low position and more contraction in the high position.

Under the totally mistaken impression that they are thus providing more stretching for their chest muscles, many bodybuilders perform barbell bench presses with a very wide grip; but, in fact, such a wide grip literally prevents stretching of the chest muscles, while also making it impossible to get anywhere close to a fully contracted position of the chest muscles. The result being a very limited-range exercise of no real value. A much narrower grip with a barbell will greatly improve the exercise, but even better results can be provided by an exercise machine.

Full-range exercise for the largest muscles of the torso, the latissimus muscles, is simply impossible with a barbell. Bent-forward rowing motions, pulling the barbell up to the chest, provides a range of movement around the axis of the shoulder joints of about 100 degrees, does not provide either stretching or exercise in a position of full contraction of the muscles, and has the additional disadvantage of involving other, weaker muscles that make it impossible to work the latissimus muscles in proportion to their strength.

In contrast, a properly-designed pullover machine works the latissimus muscles throughout a full range of possible movement, provides both stretching and resistance in a position of full muscular contraction, and does not involve the use of other, weaker muscles that limit the level of resistance that can be used. With a pullover machine, the range of movement is more than twice what it is with any barbell exercise.

And, again, many bodybuilders still perform wide-grip “chinning” or “pull down” exercises under the mistaken impression that they provide more stretching for the latissimus muscles; when, in fact, a wide grip in such an exercise literally prevents any stretching or exercise in the fully-contracted position, again provides only a limited-range movement of little value. And, of course, such movements also involve the flexion muscles of the upper arms and are thus limited to a relatively low level of resistance, far less resistance than the latissimus muscles can use if worked in isolation in the fashion provided by a pullover machine.

There are, in fact, very few full-range exercises that can be performed with a barbell.

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Then, of course, we come to the need for a variable form of resistance, and while it is true that the resistance actually does vary in many barbell exercises, it must be clearly understood that such variation is utterly random and has no relationship to the actual need for variable resistance in exercise.

During a curling exercise with a barbell, for example, the total range of movement is usually about 150 degrees of rotational movement around the elbow axis, which is more or less identical to the range of movement provided by a curling machine; but in all other respects the machine curl is much better, and far more productive. If we assume a vertical (straight down) position of the arms at the start of a barbell curl, and if we also assume that the exercise is performed properly, then the actual resistance while using a 100-pound barbell is literally ZERO in the starting position, rises to 50 pounds after 30 degrees of movement, about 70 pounds after 45 degrees of movement, and becomes 100 pounds only after 90 degrees of movement; after which point in the movement the resistance falls off again, falls off to less than zero during the last few degrees of the movement if the exercise is performed in a usual fashion. Thus you have no resistance on either end of a full-range curling movement, and have only random variation of resistance throughout the rest of the movement.

A curling machine, in contrast, can provide both full-range resistance and proper variation of resistance.

Regardless of the tool that is being used, you need to be able to adjust the resistance properly in relation to your momentary level of strength; if the weight is too heavy you cannot perform as many repetitions as you should, and if it is too light then you either do not work the muscles hard enough or you end up performing far too many repetitions. With an Olympic barbell set you can adjust the resistance in increments of five foot-pounds of mechanical work in most cases; most barbell exercises involve a vertical movement of the weight of about two feet, so if you add a one and one-quarter pound plate to each end of the barbell (a total addition of two and one-half pounds) and then lift the weight two feet, you have increased the resistance by five foot-pounds of mechanical work.

Most current exercise machines do not provide the ability to “fine tune” the resistance to an equal degree, so a barbell is better in that sense; most exercise machines provide the capability of increasing the resistance only in increments of at least 20 foot-pounds, four times the minimum change provided by a barbell, far too big a change to permit the increases in resistance that are actually needed.

With our new line of MedX exercise machines, however, we have solved that problem once and for all time; with this line of machines you can adjust the resistance in increments of only two foot-pounds, which is the same thing as adding only one pound to the weight of a barbell, so you can adjust the resistance to the next level that is required by anybody from the weakest to the strongest person.

Another current stupidity that is making the rounds among the self-proclaimed “experts” is the pros and cons of so-called “open chain” versus “closed chain” exercise . . . “And just what,” you might ask, “does that mean?” And, as usual, it means nothing, is simply more bullshit; those terms are supposedly “scientific” names for isolated exercises versus compound exercises.

An isolated exercise is one that involves only one joint, things like curls or leg-extensions, while a compound exercise is something like a bench press or a leg press, where more than one joint is involved. And, according to the idiots promoting this latest outrage, you should use only compound exercises while avoiding isolated exercises like the plague.

Well, as it happens, it is simply impossible to perform full-range exercise with any compound movement, and while such exercises certainly have some benefits they just as certainly have several important limitations and shortcomings. Just which compound exercise, pray tell me, would you use to develop your neck muscles, or your lower back, or your forearm muscles, or a long list of other important muscles?

Exercise machines provide both isolated and compound exercises, while barbells provide primarily compound movements, since most truly isolated exercises cannot be performed with a barbell.

And just which compound exercise would you use to develop the important, even critical, muscles that rotate your torso? And how would you do it with a barbell?

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Proper exercise requires at least nine different factors: full-range resistance, automatically-variable resistance, balanced resistance, both positive and negative resistance, direct resistance, resistance in both the fully stretched and fully contracted positions and unlimited speed of movement. Barbells provide only three of those requirements, while a properly-designed exercise machine can provide them all; so a machine is not “as good” as a barbell, it is a hell of a lot better if it is properly designed. If you believe otherwise you are ignorant (lack knowledge) but if after carefully investigating the facts you still believe otherwise then you are stupid (beyond help).

Nothing but the facts, Ma'am!