

My First Half-Century in the Iron Game

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If muscular strength is defined as “the force produced by muscular contraction,” which appears to be the only rational definition, then it becomes very difficult, if not quite impossible, to measure strength accurately. A direct measurement of the force produced by muscular contraction would require cutting the tendon that joins a muscle to its related bone, and the insertion of a strain gauge (force measuring device) between the ends of the cut tendon; which procedure leaves a great deal to be desired, to say the least.

Instead, we must attempt to measure the output of torque that is produced by the force of muscular contraction; which still tells us little or nothing about the level of force required to produce that measured level of torque, because there is no consistent relationship between force or muscular contraction and the resulting output of torque. As you move from one position to another you change the relationship of a muscle to the bone to which it is attached, and thus you alter the efficiency of the musculoskeletal joint. In very simple terms: in one position a force of 100 pounds from the muscle might produce an output of only 10 foot-pounds of torque, while in a different position the same force from the muscle might produce 100 foot-pounds of torque.

For example: with your arm straight at the elbow, most of the force produced by the muscles that bend your arm is wasted, because it is pulling almost entirely in the wrong direction; but after the arm has been bent 90 degrees, then the force is pulling in exactly the right direction and thus none is wasted. The result being that a constant level of muscular force in this case would produce about nine times as much torque in one position as it produced in another position in the same movement.

In such a case it would appear that the muscles were nine times as strong in one position as they were in another position, when in fact the muscular strength was the same in both positions.

Which is only one of several critical factors that must be understood and applied in order to produce meaningful measurements of strength; until and unless all of these factors are properly dealt with, you are simply wasting your time trying to meaningfully measure strength.

But, until MedX equipment first became available nine years ago, all of the thousands of people who have been trying for many years to measure strength have continued to ignore all of the actual requirements for performing accurate strength tests. And, obviously, if you cannot accurately measure the starting level of strength, how do you then later determine the results of an exercise program? If you want to determine the results of a diet, then you have to know both your starting bodyweight and your finishing bodyweight, any difference being the result of the diet insofar as your weight is concerned. And the same rule applies to changes in strength resulting from exercise. But while an accurate scale will tell us the results of a diet, tools required for measuring strength are much more complicated.

In no particular order of importance, there are several absolutely essential requirements for accurate and meaningful measurements of strength; or, at least, for measurements of the output of torque resulting from the force of muscular contraction, which is as close as we can come to measuring strength.

ONE: total isolation of the joint related to the muscle we are testing; without which isolation the resulting torque will be produced by other muscles in addition to the one you are trying to test. When attempting to test the strength of the muscles that extend the lower spine, for example, you must anchor the pelvis in such a manner that no slightest degree of pelvic movement is possible. If not, then the muscles of the buttocks and the rear of the thighs will contribute to the level of torque that is produced; whereupon it is then impossible to determine just which muscles produced just what part of the tested level of torque. In practice, it took us fourteen years of continuous research to figure out how to anchor the pelvis in the required manner; fourteen years of work and an investment of more than \$40,000,000.00. During most of that time it appeared to be impossible; but, eventually, we were successful.

And just how much unwanted pelvic movement is acceptable? ZERO, ZILCH, NADA, NICHTS, GOOSE-EGG, IZEKO (which is Zulu, for the benefit of the illiterate). That is to say: NONE. Sweet fuck all.

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Which by itself is still not enough even for total isolation of the joint because “believing” that the joint cannot move is not enough, you must be able to “prove” that no unwanted movement occurs. And, eventually, we provided that requirement as well, a requirement that I can easily demonstrate to the total satisfaction of a rabbit, if perhaps not to many of our present crop of so-called “scientists,” most of whom cannot find their own ass given twelve attempts, with a bright light on the target, with a sign pointing to it and with an Indian guide leading them by the hand. Remember, these are the same people who have been trying, with ZERO results, to measure strength with Cybex machines for the last twenty-odd years; long after anybody apart from an idiot would clearly understand that a Cybex machine is capable of measuring literally nothing.

Having read damned near everything published by all of these self-proclaimed “experts” during the last century, a total of thousands of articles and literally millions of words, I have found absolutely nothing that is even true, lots that is worthless and some that is dangerous. Yet these are the people who are supposedly leading us to the Promised Land. Sure.

Since it has taken me nearly sixty years to learn anything of value in regard to the field of exercise, I cannot claim to be very smart; but, at least, I have finally learned at least “something” while none of the scientists in this field that I am aware of have learned anything.

And why do I hate scientists? I don’t, but I clearly recognize them for just what they usually are: idiots. Arrogant idiots. Exceptions? A few, damned few, but even these few have learned nothing from their own efforts and generally refuse to look at the results of the work of other people.

If you mention something of value that is “new” to one of these people, and any damned thing of value that you can think of will be new to them, their usual response is something along the lines of ... “Oh, where did you read that? Which long-haired, dope-smoking, scrawny, jogging, PH.D. published that in which eminent, peer-reviewed, scientific journal?” Smirk, smirk.

My usual response to this being to tighten their necktie by several inches, grab them by the crotch and the throat and offer to drag them out into the alley and “explain things” to them; that is, kick their ass. Which, of course, teaches them nothing apart from the fact that they mouthed off to the wrong guy; but it does, at least, make me feel better.

So?

So forget trying to learn anything of value on the subject of exercise from the scientific community; they can teach you less than nothing; less because anything they tell you is bullshit based upon conclusions reached following testing procedures produced using equipment that is nothing short of a sick joke, things like Cybex machines and their clones.

Nothing in this universe can be evaluated until you can measure it, accurately and specifically, and it is simply impossible to measure strength with anything except a MedX machine. MedX machines are NOT the BEST way to measure strength, they are, quite literally, the ONLY WAY.

So then why do thousands of people continue to try to measure strength with Cybex machines and similar garbage? Because they are stupid in most cases, and ignorant in all such cases. Ignorance, being a lack of knowledge, can sometimes be corrected, but stupidity goes clear to the bone, is beyond help.

Apart from MedX machines, no other tool intended to measure strength provides the total isolation of joint being tested; but that is only one of their shortcomings: in fact, such tools provide NONE of the requirements for meaningful testing.

TWO: the second requirement for meaningful strength testing is the ability to determine the exact position in which a test is conducted; this being essential because changes in position produce changes in the output of torque, as mentioned above. Even a very slight change in position sometimes produces an enormous change in the output of torque, and it is possible to believe that strength has been increased when in fact it has been reduced if tests are not performed in exactly the same position each time. And, again, Cybex machines and their clones do not provide this requirement although they claim to do so.

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THREE: the third requirement for meaningful testing of strength is the elimination of nonmuscular torque, torque that is not produced by the force of muscular contraction but that is unavoidable and will always bias test results if ignored. And such nonmuscular torque is ignored in Cybex testing procedures, is not considered.

Such nonmuscular torque is produced by three distinct, unrelated factors: Friction, gravity and stored energy. Gravity acting upon the mass of the torso, head and arms of a large man will produce as much as 150 foot-pounds of nonmuscular torque in the flexed position of the spine in a test of lower-back strength, nonmuscular torque that will reduce the output of total torque in that position and thereby grossly understate the true level of muscular strength. While, in the extended position, nonmuscular torque from gravity will overstate the true level of strength by as much as 60 foot-pounds. And, again, Cybex machines and their clones simply ignore this critical factor; while, MedX machines, and ONLY MEDX MACHINES, remove the effects of nonmuscular torque from gravity by the use of a very sophisticated counterweighing system.

Secondly, nonmuscular torque is produced by muscular friction, which will reduce the output of torque during a test of positive strength and increase the torque during a test of negative strength; the result being that it is simply impossible to conduct a meaningful test of muscular strength while using a dynamic testing procedure.

Dynamic positive test results are always too low while dynamic negative tests are always too high, but, in either case, they are meaningless. So, naturally, Cybex machines and their clones use a dynamic procedure. They are, at least, consistent: that is everything they do is wrong, utterly stupid, totally without meaning.

MedX machines avoid nonmuscular torque from muscular friction by using static testing procedures, where friction is not a factor.

Thirdly, nonmuscular torque is also produced by stored energy: movement of any joint, in any direction, away from a neutral, relaxed position produces stored energy by compression of soft tissue on one side of the joint and stretching of soft tissue on the opposite side of the joint. The unavoidable result being the production of nonmuscular torque that will attempt to move the involved joint back towards the neutral position. And such nonmuscular torque from stored energy will bias the test results to an enormous degree, making it appear that muscular strength is far too high in some positions and too low in other positions.

A very simple example of this can be provided in the following manner: first, sit down in a chair; second, lean your torso forward so that the midline angle between your torso and thighs is less than 90 degrees; third, while leaning forward in that manner then attempt to straighten your legs, which you will find impossible to do so. Because, in that position, you are stretching the hamstring muscles over two joints, the knees and the hips, and thereby producing so much nonmuscular torque from stored energy that it is then impossible to straighten your legs at the knee.

Nonmuscular torque from stored energy cannot be avoided, cannot be removed, cannot be compensated for by the use of a counterweight, but it must be dealt with in some manner; if not, then the test results are utterly meaningless. Cybex machines and their clones simply ignore this critical factor, but they must ignore it since you cannot deal with it in any manner during a dynamic testing procedure.

MedX machines deal with nonmuscular torque from stored energy in the only way possible: by measuring it and then factoring it into the test results. But, kindly note, such nonmuscular torque cannot be measured during a dynamic test such as those performed with Cybex machines.

When all of the requirements for accurate and meaningful testing of muscular strength are provided, you then have a test of NET MUSCULAR TORQUE, NMT, torque produced only by the force of muscular contraction and unbiased by any form of nonmuscular torque. Anything less is pure bullshit.

Someday, probably fifty years after I am dead, these simple facts will be clearly understood by the scientific community and no other testing procedure will then ever be used; then, perhaps, the scientific community will start to learn something of value. But, in the meantime, don't hold your breath, and don't bother to even read the current bullshit being published by the scientific community on the subject of exercise, about which they know less than nothing.