

STAND AND DELIVER!

The Lost Art and Science of Weight Training



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Four score and seven years ago, the gyms with platforms outnumbered the gyms without 1000 to one. Today, the gyms without platforms outnumber the gyms with platforms 1000 to one. Indeed, four score and seven years ago, there were only 1001 gyms, give or take a score! The one thousand and first gym was probably a Vic Tanny's salon, then just beginning. The opening of that cute li'l chrome health club, I suspect, marked the beginning of a paradigm shift in the art and science of weight training as it is popularly practiced in this country and around the world.

Our forefathers brought forth to this nation a method of weight training that was dedicated to the proposition that all methods are NOT created equal. Four score and seven years of scientific scrutiny and practical experience has taught us that their methods were - are - vastly superior to any developed thereafter. The underlying philosophy of their methods was elegantly simple in its fundamental thesis. To maximize your strength and fitness, you must lift heavy weights. Since there were practically no gizmos to make this easier to do back then, one was obliged to lift the weights while standing. Usually on a platform.

The world of Irondom will little note nor long remember what I have to say here. I acknowledge that lamentable fact. Olympic lifting has lost a lot of its former popularity to powerlifting and bodybuilding, especially in the USA. Couple this with the fact that the fabric of the bodybuilding gym industry has become inextricably interwoven with that of the equipment industry. You can't make a lot of money selling pig iron and platforms, so you devise expensive equipment and sell new models every year, like new model cars. To maintain their competitive edge, gyms are obliged to buy the new equipment because it has been marketed so expertly. These extant market forces mitigate so strongly against Irondom noting or remembering what is said in this article that that it is doomed to the same pile of trivial nonsense that is the end fate of all such pleas for a return to sanity. Still, I must protest, albeit into a raging wind of vile objections or (worse) utter obscurity.

What's With The "Platform" Thing?

See, back in the days of platforms, the weights were made of iron, and dropping them on the floor was considered pretty "bush." You were instructed to lower the bar to the floor under control back then, an act which had some pretty worthwhile benefits in and of itself, besides being allowed to remain in the gym. Of course, it was appropriately believed that the successful raising of the weight was the primary

intent of standing there in the first place. So, the platform was there for two major reasons: To protect the floor if you inadvertently missed a lift, and to mark the safe zone for exercising. No one walked onto or in front of a platform back then as a matter of both safety and courtesy. In case you haven't noticed, by the way, weights are STILL made of iron, although some are rubber coated for damage control.

But let's explore the benefits of the now-all-but-extinct platform a bit more. On the platform you could do cleans, snatches, presses with one arm or two, bent rows, jerks after a clean or off the racks, and a host of other truly great but long-forgotten exercises. Even ...err...squats and deadlifts! [Author's note: A great place for pics from the likes of the early Prof. Anthony Barker's poster courses? Or others?] And there was always chalk near the platform. The single most important safety feature in the gym is now also all-but-extinct. Gym owners are simply too lazy to clean the floor (you can't expect the lifters to chalk up without making a mess).

What's With The "Standing" Thing?

The most important benefit of doing your exercises on a platform is that you are **STANDING!** You are not sitting, lying, leaning or supporting yourself in any manner. Your synergistic muscles, grip muscles, stabilizer muscles, and prime movers are all synchronously endeavoring to move the greatest resistance possible, each contributing uniquely in the effort to force an adaptive response. Over weeks and months of training under the watchful eyes of fellow lifters and old gym rat aficionados, it began to happen efficiently, and manifold benefits accrued far beyond what can be accomplished with most of the modern-day gizmos.

This does not happen efficiently in the modern gym. In fact, it rarely happens at all. Not that it couldn't. It's just that in today's gyms, little of scientific weight training methodology is known or practiced. As proof of this startling pronouncement, witness the unending torrent of shoulder and low back injuries (two of the most common injuries among a host of nagging others). Witness the unacceptably high dropout rate among newcomers to Irondom. In case you haven't been reading Club Industry reports, the dropout rate exceeds 80 percent! Why? Failure, injury or both **DRIVES** them out!

Problems With Lifting Weights While Sitting, Lying Or Leaning

A greater chance for injury and failure are two major problems. Dr. Pat O'Shea, author of the first college text ever written on weight training (*Scientific Principles and Methods of Strength Fitness*, Addison-Wesley Publishing Company, 1976), elaborated on the benefits of free weight training versus machine training. Said he of the ten perils of machine training:

1. No machine can provide full range multiple joint movements as closely as free weights.
2. Motor skill engrams aren't established with machines as well as free weights.
3. The carry-over value of free weight training is superior to that provided by machine training.
4. Machine training won't help you develop a high level of fluid, dynamic full-range athletic strength.
5. The body is a homogeneous unit that engages in ballistic movements, particularly those generated by strong hip thrust.
6. Machine training doesn't provide for training variety and variability.
7. Machines don't permit the mind and body to develop in synchronization
8. Machine training does not stress the psycho-endocrine systems.
9. Machine training does not provide for positive training experience.
10. Machine training does not provide for continuous long-term motivation.

I elaborated on these ten points in *Power: A Scientific Approach* over twenty years ago (Contemporary Books, 1989). They explain, in large part, why so many people fail to get themselves in peak condition if all they do is train with machines. They also explain, in large part, why people get injured so much. Moving through prescribed patterns and ranges of motion just aren't the way Mother Nature intended for you to move!

But both O'Shea and I only hinted at the one important point that needs to be addressed. It comes closer to explaining the injuries and drop-out rates. The simple fact is that, with the use of machines, you're almost always sitting, lying or leaning. That is the underlying reason for all ten of the stated perils.

There is a startling bit of information that was not brought to light until recently. The chances of injury, both during and as a result of training on machines, is far greater than while lifting free weights while standing on your own two feet. Now I must admit that, at first, this seemed odd to me. Most of us in IronDome simply assumed that machines offered the user a bit more safety than free weights! You know, limited range of movement, carefully hidden moving parts, total lack of ballistic stress, and so forth. Not so according to these relatively recent research findings:

- Weightlifters [Olympic style] have less than half the injury rate per 100 hours of training than do those engaged in other forms of weight training; 17 Vs 35. (Hamill, B. Relative Safety of Weightlifting and Weight Training. Journal of Strength and Conditioning Research, 8(1):53-57. 1994)
- Retired Olympic weight lifters had lower lifetime incidence and prevalence of low back pain than a control group of normal active men of similar age; 23% Vs. 31%. (Granhed, H. et al. Low back pain among retired wrestlers and heavyweight lifters. The American Journal of Sports Medicine, 16(5):530-533. 1988)
- Mike Stone, et. al. provided an excellent review of the research literature on this topic. The inescapable conclusion was that weightlifting is indeed the safest method of weight training. (Stone, M. H., A. C. Fry, M. Ritchie, L. Stoessel-Ross, and J. L. Marsit. Injury potential and safety aspects of weightlifting movements. Strength and Conditioning. June: 15-21. 1994)

It is clear now, that Dr. O'Shea knew what he was taking about. The very forms of stress that machines force you to avoid are the ones your body not only craves because they simulate all movement on planet Earth, but absolutely requires for both safety reasons as well as performance reasons!

Benefits of Lifting Weights While Standing

Arthur Drechsler, author of the single most important book ever written on Olympic weightlifting (The Weightlifting Encyclopedia, A is A Communications, New York, 1997), hit the nail on the head. Speaking about the unique value of the Olympic lifts for athletes, Drechsler listed eight benefits unavailable to those using machines:

1. The mere practice of the (Olympic) lifts [the snatch and the clean & jerk as well as related lifting techniques] teaches an athlete how to explode.
2. The practice of proper technique in the Olympic lifts teaches an athlete to apply force with his or her muscle groups in the proper sequences.
3. In mastering the Olympic lifts, the athlete learns how to accelerate objects under varying degrees of resistance.
4. The athlete learns to receive force from another moving body effectively and becomes conditioned to accept such forces.
5. The athlete learns to move effectively from an eccentric contraction to a concentric one.
6. The actual movements performed while executing the Olympic lifts are among the most common and fundamental in sports.
7. Practicing the Olympic lifts trains an athlete's explosive capabilities, and the lifts themselves measure the effectiveness of the athlete in generating explosive power to a greater degree than most other exercises they can practice.
8. The Olympic lifts are simply fun to do.

There is a lot of sophisticated science wrapped up in explaining these eight benefits. I cannot delve into it

in this article enough to do it the justice it deserves. However, I can add a few insights to the list Drechsler provided.

The fundamental reason why what both O'Shea and Drechsler say is true is that the lifts are done while standing! In my mind, this places a premium on such lifts and detracts from the value of machines.

And, it's not only machines that are suspect. Free weight exercises that requires the use of benches or other contraptions of various sorts are implicated as well. Lying or sitting on a bench effectively limits the support and stabilizer requirements that are part-and-parcel to lifting while standing. Removing your need for synergy and stability, and therefore your ability to apply adaptive stress to the muscles and other tissues which provide them, is the reason that you are able to effectively injury-proof yourself more easily with lifts performed while standing than any other method of weight training.

To illustrate, let's talk about bench pressing (a free weight movement if I ever saw one). Lying on your back with 300-400 or more pounds in your hands presses your scapulae into the flat bench beneath. You lower the bar to your chest. But the scapulae are pinned to the bench and cannot slide inwards as you lower the bar. And neither can they slide outward as you raise the bar off your chest. This is not good! It causes undue stress on the tendons of the long heads of your biceps. The results?

- nagging long-lasting pain from biceps tendinitis,
- you can't lift as much,
- far less strength is developed, and
- you are saddled with poor performance in sports and daily activities.

On top of that, all benches are made to be about 16 inches off the ground because the rules of powerlifting dictated it back in the mid-sixties. This is downright dangerous for shorter athletes, who have to go into spinal hyperextension in order to keep their feet flat on the ground for better stability. The results?

- low back trauma
- less stability during training and therefore greater exposure to injury and less weight being lifted
- poor sports performance, or (worse)
- ruined sports career or quitting the gym from unnecessary injury.

Equipment manufacturers haven't even **BEGUN** to understand this fundamental flaw in a piece of equipment as simple as a flat bench! Imagine the flaws they perpetrate with the rest of their more elaborate gizmos!

How Can I Make Platform Lifting Safer And More Effective Than Machine Training?

The answer to this innocent question is that it already IS! The recent scientific research says it quite clearly. On the other hand, I would be remiss if I didn't leave you with a few points of caution. You will not experience the benefits of platform lifting - lifting while standing - unless you know a few things that must be avoided:

- Poor technique in executing the movement (placing too much stress on connective tissues, and the smaller synergists or stabilizers by getting out of the "groove")
- Premature use of a training method (going ballistic before a solid foundation is developed)
- Improper frame of mind while lifting (lack of focus, intensity or dedication)
- Repeating a movement until fatigue forces you to fail (predisposition to focus problems as well as injury)

Should I Abandon Machines And Benches?

Absolutely not! After all, the use of machines and benches are quite effective! Just expand your horizons

a bit, and give it a try! Charles Staley, a colleague of mine in the International Sports Sciences Association, put it rather succinctly in his article on explosive lifting:

"Legions of successful competitive bodybuilders have achieved their goals without using these techniques. However, it has been my experience that many top physique stars have achieved their success in spite of their training methods and habits, not because of them. When you have a superior somatotype and a favorable hormonal system to support it, and when you have a superior ability to train hard on a consistent basis, you don't need to sweat the details. Recreational pharmacology should be factored in, also. "But let's assume that you're at least the fourth generation of your family to stand upright. Let's also assume you have a job, and limited chemistry skills. Let's further assume that your training program could benefit from a bit of variation, and even some fun. If you fit this profile, and if you employ qualified supervision (I'd recommend calling the United States Weightlifting Federation at 719-678-4508 in order to find a qualified weightlifting coach in your area), I would urge you to explore these methods. The downside? For starters, HIT Jedis will call you a fool. Also, you may abandon bodybuilding for the sport of Olympic weightlifting. You also run the risk of slow twitch fiber atrophy, as your Type II fibers hypertrophy to unprecedented size. Finally, you may suffer guilt pangs as you find yourself actually enjoying training again. On balance, I'd say it's worth the risk."

Will it ever come to pass that platforms make a comeback in the gym? Perhaps not (market forces y'know). But one thing is clear. It ain't gonna happen unless 1) you demand it, 2) muscle magazines and web sites begin talking about platform lifting, and 3) personal trainers begin getting experienced at it.

Annotated References

For years during my weightlifting career, we had these classifications for weightlifters and totals for each weight class.

Class IV	Class III	Class II	Class I	Master	Elite IV	Elite III	Elite II	Elite I
114 - 590	114 - 672	114 - 777	114 - 882	114 - 981	114 - 1064	114 - 1146	114 - 1229	114 - 1311
123 - 639	123 - 733	123 - 838	123 - 953	123 - 1064	123 - 1157	123 - 1251	123 - 1344	123 - 1438
132 - 689	132 - 788	132 - 904	132 - 1025	132 - 1146	132 - 1246	132 - 1344	132 - 1444	132 - 1543
148 - 772	148 - 887	148 - 1009	148 - 1152	148 - 1279	148 - 1394	148 - 1510	148 - 1625	148 - 1741
165 - 838	165 - 965	165 - 1102	165 - 1257	165 - 1400	165 - 1527	165 - 1653	165 - 1780	165 - 1906
181 - 904	181 - 1036	181 - 1190	181 - 1350	181 - 1505	181 - 1642	181 - 1780	181 - 1918	181 - 2055
198 - 953	198 - 1097	198 - 1257	198 - 1422	198 - 1593	198 - 1731	198 - 1868	198 - 2006	198 - 2143
220 - 1003	220 - 1157	220 - 1323	220 - 1505	220 - 1675	220 - 1824	220 - 1973	220 - 2121	220 - 2270
242 - 1047	242 - 1196	242 - 1367	242 - 1554	242 - 1736	242 - 1890	242 - 2044	242 - 2199	242 - 2353
275 - 1075	275 - 1129	275 - 1411	275 - 1598	275 - 1786	275 - 1946	275 - 2105	275 - 2265	275 - 2423
275+ - 1119	275+ - 1279	275+ - 1472	275+ - 1670	275+ - 1857	275+ - 2022	275+ - 2188	275+ - 2353	275+ - 2518

1. Hamill ,B. Relative Safety of Weightlifting and Weight Training. Journal of Strength and Conditioning Research, 8(1):53-57. 1994

Found weightlifting to have lower rates of injury per 100 hours than other forms of weight training.

2. Andrews et al. Knee Shear Forces during a Squat Exercise using a Barbell and a Weight Machine. Biomechanics, 4B: 923-927. 1983

Found knee shear forces to be 30-40% greater on the weight machine than with the barbell exercise.

3. Granhed, H. et al. Low back pain among retired wrestlers and heavyweight lifters. The American Journal of

Sports Medicine, 16(5):530-533. 1988

Retired olympic weight lifters had lower lifetime incidence and prevalence of low back pain than a control group of normal active men of similar age, (23% vs. 31%).
