Back to basics

2500 years ago a legendary man named Milo of Croton was a famous wrestling champion. Each day his training comprised of carrying a new born calf, from the day it was born until fully grown. By the time the calf had grown to a massive beast, so too had Milo. Didn’t prevent him being torn to pieces by wolves, though…

Anyway, this is the classic example of progressive overload training. It worked then and still does.

Size and strength doesn’t increase by performing tasks that are already easy –just ask Milo. For muscles to grow they need stimulation. Below a certain intensity of effort, growth is limited. All too often people simply ‘go through the motions’ which is ultimately fruitless. For maximum stimulation, an intensity of effort which reaches your limit is required.

Muscles contract along their length. They become shorter. Interlace your fingers and draw your hands together. This is a muscle contracting. Your fingers are two different types of fibres called actin and myosin which slide together and apart. This is the ‘sliding filament theory’ in action.

Only the precise number of muscle fibres required to perform a task are recruited. It’s the “all or nothing” principle. They are either working as hard as possible, or not at all. Lifting something light, like a pencil, will recruit far fewer muscle fibres than a heavy object. Yet it seems the entire muscle is contacting. It’s not. Those fibres not needed are just along for the ride and contribute nothing.

Lifting heavy weights is essential, providing stimulus to as many muscle fibres as possible. They don’t increase in number, but they do get bigger.

Of equal importance is recovery. Training only provides the stimulus for muscles to grow, but rest is required for this to occur. Overtraining kills recovery. Best results are produced by the minimum amount of training that imposes the maximum amount of growth stimulation. Anything extra is a waste of time and effort. Brief, intense and infrequent training allows for greater recovery.

Long and frequent workouts will not promote greater results but inhibit them. If you’re reading this after a two hour gym session, I’m sorry to say you’ve just spunked away an hour and eaten into your recovery ability.

Exercises that targets large muscle groups should be favoured over smaller ones. Compound movements involve more than one joint. The deadlift is a great example. Using these kinds of exercises recruits masses of muscle fibres and surges of natural anabolic hormones. This creates a ripple effect which washes over other smaller muscle groups. Not just the muscles you’re actively working, but all of them.

You will not achieve this from smaller isolation movements, which involve the movement of only one joint.

The key is using correct form for the exercise you’re performing. Lifting a weight that’s too heavy will compromise form. This is counterproductive as stimulation will be decreased while the risk of injury increased.

The final repetition performed in a work set will be where you fail to complete a full repetition. A set that stops prior to the point of failure will not involve all of the available fibres, so never end a set simply because you have completed a certain number of reps. A work set is properly finished only when a final complete rep is not possible. This is momentary muscle failure.

The ideal rep range for muscle growth is between 8 – 12 reps. If you can’t manage 8 strict reps the weight is too heavy. When you can perform 12 (or more) it’s time to up the resistance at your next session. Move more weight!

Few sets of any one exercise are required for maximum muscle growth. Any additional sets will reduce the production of favourable hormones, require greater recovery and limit results. You don’t even need many different exercises either. Smaller muscles, such as the biceps, need even less. They receive indirect stimulation when performing heavier compound movements anyway.

Larger volume is simply not necessary or time efficient. Get in, get it done and get out. Less is best. This tips a nod to Occam’s razor, “It is pointless to do with more what is done with less”.

There are two distinct types of muscle contractions to consider. Firstly there are *concentric* contractions. This is when the muscle is shortening under tension. For example, curling a weight, using the bicep, from straight to the bent arm position.

The other is an *eccentric* contraction. Using the same bicep example, lowering of the weight from a bent arm to straight again. The muscle is lengthening under tension.

Everyone is stronger in the eccentric phase than the concentric. You may be unable to lift up a heavy item but you’ll find you’re able to lower it in a controlled fashion. We can exploit this to our advantage.

When lifting a weight, and thus contracting the muscle, do it quickly. Pause briefly at the point of full contraction and then lower the weight slower than you lifted it. Your form should be perfect and the weight lowered in a controlled fashion. This increases the muscles ‘time under tension’ which is demonstrated to optimise results. Because you’ll always be stronger in the lengthening phase of a muscle contraction, take more time here. Really make that muscle work!

Of course it’s important to mix up exercises and training routines to prevent plateaus. Training to failure is important, but probably not every time.

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