



Training: General Information

(a) When to Train

Frequency

Bodyweight exercises are a little different to normal gym exercises. For a whole variety of reasons they are superior by far. They develop real world strength that can be demonstrated *anywhere*, not just in the gym.

They also incorporate so many muscles in each exercise that the conventional gym wisdom that each muscle group is to be trained twice per week doesn't apply. In fact, each exercise only needs to be completed *once* per week. To that end a typical program may look like this:

1. *Monday*. Upper Limb (and Chest & Lats): Push-ups and Pull-ups.
2. *Wednesday*. Core and Spine: Leg Raises, Bridges, Integration Drill and Co-Contraction.
3. *Friday*. Lower Limb: Squats.

Time of Day

Most people train at night. However there is evidence that think mornings are the best time to train.

The fact is that people who are night owls and have trouble waking in the morning have an imbalance in the circadian rhythms of their *cortisol* production. Cortisol and *melatonin* production both cycle throughout the day and night, and if you look at graphs of their production they are mirror images. The way it is meant to work is this.

1. At night melatonin rises and cortisol drops. In fact the onset of sleep has more to do with the drop in cortisol than it has to do with the rise in melatonin. The more rapid the drop in cortisol, the more rapidly will a person drop off to sleep.
2. In the morning, melatonin drops and cortisol rises. It is the rise in cortisol that wakes you up and makes you alive and ready to face the day.

Night owls have their cortisol cycling *reversed* at the start and end of the day. At night cortisol is high so they cannot sleep. In the morning when they should be waking, it is low and they cannot wake up. Grogginess in the morning is a sign of low cortisol levels generally and poor cortisol circadian rhythm specifically.

Since exercise elevates cortisol, exercising at night is the worst thing a night owl can do, even though they feel most capable at that time of the day, because it will make their sleep problems worse.

Exercising in the morning resets the circadian rhythm for cortisol. No matter how little a night owl may wish to exercise in the morning, unless there are pressing reasons for them to stay up at night and sleep in mornings, getting up earlier and exercising mornings is the best way to solve their sleep problem and reset the cortisol clock.

Having said all of the above, if sleep cycles are fine, training straight after work so cortisol has time to drop as bedtime approaches will do no harm.

(b) How to Train

There are several myths about training that need to be dispelled. They are destructive enough when it comes to either recreational training for health or serious training for athletes. They are a *disaster* when training for injury prevention or rehabilitation.

No Pain, No Gain?

For *most* training this is a myth. The one exception is in an athlete training the lactic acid energy system of the muscle to develop either anaerobic power or oxygen debt tolerance. Discussion regarding this is beyond the scope of this short paper.

Of course the nervous system and the muscle must be *worked*, but another maxim is more important than the “no pain no gain” philosophy. “*Train, don’t strain.*”

That means that you push to the point of discomfort, without entering any area of real pain. Training into pain in fact predisposes to injury and *slows* progress. It doesn’t enhance it.

Do Not Train to Failure

Training to failure is a myth that is part of bodybuilding lore, and it is counterproductive, because:

“Muscle responds to the amount of work done, not the level of fatigue.”

It is actually better to do two sets of 5 (10 reps total) than one set of 8 to failure (8 reps total).

Two groups of people who are hugely strong do not train to failure:

1. Firstly weight lifters continue to lift the bar until the bar-speed drops, and then they cease training. If they continue, the nervous system fatigues to the point of exhaustion and it takes days to a week recover, limiting training time and strength gains.
2. Secondly the strongmen who demonstrated their power from the 1890s to the 1930s did not train to failure.

You should *always* have something left when the reps are finished. The set should be stopped *at least* one or two reps short of failure. It is difficult to get this message across to people who have been caught in the gym culture, but the actual secret of strength development, which is also a crucial issue in injury prevention and rehabilitation, is this:

“Do as much as you can, as often as you can, whilst staying as fresh as you can.”

Slow but Steady Wins the Race

Trying to progress as rapidly as possible is yet another myth that is part of bodybuilding lore, and again, it is counterproductive. You cannot make up for years of lack of exercise with rapid progression. The muscle can respond quickly at first, but the tendons and ligaments take time to strengthen. Pushing too fast too early invites tendon & ligament injury. You are also teaching the nervous system to recruit muscles. That is a *skill*, which takes the nervous system *time* to learn.

Further, improvement is rarely linear. The body seems to reach a series of plateaus, and the modern approach of pushing harder won’t break through such a plateau.

What does work is persisting with training at a level that is *within* capacity, *not right on the edge* of it. Just do it, and keep doing it, and keep doing it, and keep doing it, and keep doing it. The day comes when the time and effort put in returns dividends. A well known Australian kayak coach and five times Australian Olympic representative used to call this “getting miles under the belt”. The old fashioned strongmen used to call it “putting strength in the bank”.

It is therefore important for you to stay working on your particular level of an exercise for several weeks after you have achieved the repetitions required for progression. This puts “strength in the bank”. And if there are some muscles that are lagging behind others in strength development, either because they are the ones recovering from injury, or because you have spent years doing isolation exercises in a gym, persisting on the same level for a while allows time for these muscles to catch up.