

ASK PAUL

WHAT ARE THE KEYS TO GREAT EXERCISES?

Dear Paul, I was hoping you could give me some tips on the best exercises to increase my size and strength. I have been training for about 12 months and have noticed that my gains are slowing down. Any advice would be appreciated. **Adam, WA**


YOUR QUESTION IS A COMMON ONE

as many people find that their size and strength gains begin to slow down after the initial training period. In fact we often joke in our seminars that the majority of people can 'look into the gym and get stronger', and while this is slightly tongue in cheek it is indeed possible to get increased strength by simply watching other people exercise, almost like mental rehearsal and visualisation; however, continuing to make good gains after the first 12 months of training is a more challenging matter.

It appears that you are in need of some program progressions to spruce up your training. One of the most common areas of concern is that of exercise selection, which refers to the actual exercises that you are including in your training program. In the following text I will outline some of the keys to selecting the most effective exercises to increase size and strength.

THE EXERCISE MUST BE FUNDAMENTALLY SOUND FROM A SAFETY AND INJURY PREVENTION PERSPECTIVE

In a previous Ask Paul article I addressed the controversy regarding exercises that are considered to be potentially dangerous (email



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editor@fitnessfirst.com.au for a copy of this article). And this concept of safe exercise selection is never more important than when you are attempting to increase your training intensity and volume.

All exercises must follow the safety fundamentals, such as not placing the joints at extreme and unstable ranges of motion, ensuring the load is primarily distributed through the long axis of the bones and not at 90 degrees to it, reproducing a normal and functional movement used in everyday life and finally, making use of the body's support systems to maximise muscle recruitment.

CHOOSE EXERCISES THAT ARE PRIMARILY GROUND-BASED AND REPLICATE REAL LIFE MOVEMENTS.

There is no doubt that the most effective exercises for increasing size and strength are based on the primal lifting patterns of squatting, bent-over rowing and deadlifting. These lifts activate more muscle groups than any other exercise and produce a full body response that actively promotes positive natural hormonal changes that assist in increasing size and strength. These 'primal' exercises are simple replications of everyday activities where the feet are placed on the ground and the body moves around this stable base of support. There is a well-supported school of thought that if you were only allowed to do one exercise in your training program it should be the humble squat.

Note: I was once preparing a lecture on 'The Top 20 Exercises' and in my research I interviewed one of Australia's most respected strength and conditioning coaches, Ashley Jones (now the strength and conditioning coach for the New Zealand All Blacks), and his response when asked for his top 20 exercises was 'Are there 20 types of squats?'

CHOOSE EXERCISES THAT MOVE 'ORIGIN TO INSERTION' NOT 'INSERTION TO ORIGIN'

To make sense of this one, I need to let you in on some basic definitions from the world of anatomy and physiology:

Origin This is defined as the starting point of a muscle or where it attaches to the skeleton at the start of its path across a joint. However, it can also be said to be the 'fixed end' (i.e., the stable or non-moving bone from where the muscle starts). A simple example of origin would be the scapula (shoulder blade) as the origin of the biceps of the upper arm. If you do a simple bicep curl then the



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KEY TRAINING TIPS

1. Choose exercises that are fundamentally sound in relation to injury prevention and safety.
2. Choose ground based exercises that replicate real life movement patterns.
3. Look for exercises where the 'body is in motion' and move the origin to insertion not the insertion to origin.
4. Choose compound exercises as the bulk of your program design.

scapula (the origin of the biceps) is the fixed end (i.e., it is stable and not moving).

Insertion This is defined as the end point of a muscle or where it attaches to the skeleton at the end of its path across a joint. The insertion can also be described as the 'moving end' (i.e., the bone that is in motion when the muscle contracts. In the bicep example, the insertion of this muscle is the radius (the lateral forearm bone), which you can see when you perform a bicep curl, as the radius is the moving end.

Now that you have a basic understanding of the definitions, let me confuse you with some practical realities. The best exercises are actually the ones that move origin to insertion, rather than insertion to origin. Let me explain.

In the bicep curl example, the forearm moves towards the shoulder, so the bicep muscle is essentially drawing the insertion (the radius / the moving end) to the origin (the scapula / the fixed end). However, what if we decided to change the exercise from a bicep curl to an underhand chin up? In the chin up we are now essentially moving the scapula (the origin) to the radius (the insertion), as the forearm is now not moving.

This concept helps explain why the best exercises are the ones where the body is actually in motion during the performance of the lift (e.g., squats, deadlifts, chins, dips and push ups), compared to less effective exercises where the limbs are the primary body part in motion (e.g., bicep curls, leg extensions, lateral raises, tricep kickbacks).

CHOOSE COMPOUND EXERCISES

A compound exercise is simply an exercise that has a large number of muscles working across more than one joint (e.g., squats and deadlifts). Or, a more simple definition is that compound exercises (as opposed to isolation exercises such as leg extensions and leg curls) have more than one joint in motion during the lift. Compound exercises should make up the bulk of your training as they increase the amount of actual work done by the muscles. The amount of weight you can lift with compound exercises is much greater than with isolation exercises, and compound exercises cause more favourable hormonal responses than single joint isolation lifts.

PAUL WRIGHT, BAppSc (Physio) DipEd (PE)

Paul is the owner of Get Active Physiotherapy with clinic inside Fitness First at St Leonards (Sydney) and Kotara (Newcastle) as well as a third clinic in the CBD of St Leonards. Paul's 2.5 hour Advanced Resistance Training DVD and other presentations can be previewed and ordered at getactivephysio.com.au and follow the links to the online shop or for more information phone 02 9966 9464.