

ASK PAUL

WHAT ARE SAFE VERSUS DANGEROUS EXERCISES?

I WAS RECENTLY TOLD BY ONE OF THE TRAINERS IN MY GYM THAT THE PRESS BEHIND NECK EXERCISE WAS NOT GOOD FOR MY SHOULDERS AND COULD CAUSE INJURY. IS THIS CORRECT? ARE THERE SOME SIMPLE TIPS I CAN USE TO CHECK IF AN EXERCISE IS SAFE TO PERFORM?

THE CONCEPT OF 'SAFE or dangerous exercises' is a common topic of discussion among industry experts and, in many cases, there are plenty of grey areas. It is important to realise that an exercise that is considered safe for one participant may be potentially dangerous for another, but that said, there are a number of relatively simple indicators that can help identify movements that may be considered 'potentially dangerous' or 'ineffective' in the majority of health and fitness programs. And, of course, any personal trainer should be able to help further with this identification process.

Ask yourself: Does the exercise place the joint at an extreme (and often unstable) end of range position?

This point relates exactly to your question regarding the 'press behind neck;' however,

> The area of 'safe versus dangerous' exercises can be a rather murky space, so be sure to consult your personal trainer for details regarding these specific exercises and for a thorough assessment of whether they are right for you.

Ask yourself: How effective is the exercise in terms of transference of the movement to real-life? Ideally, undertake exercises that train the muscles you need to use in your everyday, real life.

it also relates to exercises such as the 'wide lat pulldown to the rear.' These exercises, while possibly useful for more experienced trainers (and some athletes such as rock climbers) provide a potential problem for many members because they take the shoulder joint to the extremes of its available range (i.e., full external rotation and abduction). In medical circles this position is referred to as the 'dislocating position' because the shoulder joint slides anteriorly within the glenohumeral joint, producing laxity and instability in the support structures. This position of external rotation and abduction also requires the participant to have adequate thoracic spine extension to remove some of the stress from the shoulder complex; and in the modern computer driven 'slouched' environment, more and more people are losing the ability to sit up straight and have reduced thoracic spine motion. This mid-back stiffness places even more demand on the shoulder joint when it is placed in these end of range positions.

Safer options: The 'pulldown to the front of the neck', 'close-grip chins', 'military press' (a barbell shoulder press from the front of the neck) and 'dumbbell shoulder press' as these exercises remove the extremes of abduction and external rotation, while still providing great training effects to the muscles of the shoulder complex. A simple test to check the general safety of a shoulder movement is to check if you can see your hands at all times during the exercise; if your hands go out of sight then there is a chance that the shoulder joint is at an end of range position and may be at risk.

Ask yourself: Does the exercise have the load at 90 degrees to the long axis of the bone?

The best example of this is an exercise such as the 'leg extension' where the resistance is transferred to the quadriceps by the padded bar resting against the shin. When your trainer extends the knee and pushes the pad forward and up, the load is at 90 degrees to the long axis of the tibia and this can produce shearing forces across

the knee joint, leading to instability and pain in some exercisers. As a general rule, the safest and most effective exercises produce compression in the moving joint and allow the muscles on all sides to contract together to add stability. This is a concept referred to as 'co-contraction.'

Safer options: 'Squats', 'lunges' and 'step-ups' as these exercises allow the load to be transferred through the long axis of the bones, rather than at right angles to these long bones. They also provide compression and co-contraction, which incorporate more total muscle activation and a greater overall training effect.

Ask yourself: Does the exercise place the body in a position not reproduced in everyday work or life?

You would probably have heard of 'functional' training, which refers to the transference of the movements and training strategies used in the gym to your daily activities of living and sports performance (i.e., the training program makes your life easier and more effective).

In the context of this article, it is worth being aware that any exercise that does not allow some transference to real life activity may be considered ineffective or potentially dangerous. One example of this is the 'Smith machine squat,' especially when done with the feet well forward of the torso because in this exercise the body's centre of gravity (under the torso) is so far behind the base of support (the feet) that this position is unlikely to be reproduced in any activity of daily living (unless you get a support role in the next slow motion Matrix film!).

Safer options: 'Squats' and 'deadlifts', where the centre of gravity is over the base of support, and the movement replicates one you would find in common, everyday life.

THE DANGER ZONE

Other issues that will help assess if an exercise is dangerous for you:

- + Your training age (how experienced are you with training?)
- + Your pre-exercise screening (identifies where modifications may be required)
- + Past injury (relevant even if it occurred five or ten years ago)
- + The level of supervision (more complex exercises can, generally, be undertaken when supervised).
- + Talk to your trainer for more details.

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