

# ARMED BUT NOT DANGEROUS

**Chest press, overhead triceps, bicep curls, push ups . . .** all are easy enough exercises to perform, and are great for strengthening and toning the arms if done correctly. Do any of these exercises for long enough with poor technique, extreme levels of resistance and postural weakness, and you'll end up with much more than just great guns . . . and that's an injury!

By Katie Mackenzie, Physiotherapist and Master Pilates Instructor at Studio Pilates International®

**P**hysiotherapists are often at the tail end of a gym injury. Your average Mum or Dad hits the gym to 'tone up'; imitates the guy with the best looking arms, has a good guess with regards to weight, reps, sets and then goes for gold. Two weeks later they are at the physio, spending the money they saved on not getting a trainer at the gym trying to save their shoulder.

The ironic thing about this scenario is that the client usually then spends about 4 – 6 weeks out of the gym, doing home exercises with a rubber band and getting Physio treatment.

Once they've strengthened the scapulae muscles, the rotator cuff and the core to a level that is adequate to allow good technique without any resistance, they can then build up the resistance gradually in the gym (with the right recommendations and supervision to check their technique of course).

This is the very thing they should have been doing from the beginning! It's just much more expensive and frustrating doing it backwards.

Prevention is obviously better than the cure, so let's spend a moment considering some common mistakes the average gym-goer can make.

## BICEP CURLS

Let's start with an analysis of the muscle groups involved in a simple arm exercise - the bicep curl:

- In a person with no history of back pain (and bear in mind low back pain affects 80% of the population at some point), the Transversus Abdominis muscle will engage to protect the spine prior to movement. Studies have demonstrated that this does not occur, or is delayed in anyone who has had an episode of back pain, EVER.
- On commencing the movement, the bicep muscles will contract to lift the weight. In the background, the scapulae will be drawn down-and-back through the lower traps and rhomboids and the shoulders will be held back by the rear deltoids and rotator cuff.
- The abdominals remain contracted also, stabilising the torso and keeping the spine in a neutral position.
- The weight is then lowered back to the start position, using eccentric biceps control, maintaining the stability of the shoulders and torso through the postural muscles; and we then repeat the movement.

The same exercise with poor technique, **too much resistance or poor postural strength** would look more like this:

- The deep abdominals fail to engage before the movement (they may kick in after the movement has started or not at all).
- The biceps contract to lift the weight. The forearm muscles also contract, due to too tight a grip, or too heavy a weight.
- To raise the bar above 90 degrees, the accessory muscles such as upper traps and levator scap raise the shoulders. The pecs cause the shoulders to roll inwards, as the lower traps and rotator cuff are not strong enough to maintain the scapulae and shoulder joint position under such load.
- To get to the end of the 'up' phase of the exercise the client may even swing the bar, using the lower back muscles to arch the back, letting the abdominals go completely.
- On the down phase, the accessory muscles remain overactive, and the forearms tighten even more.
- The abdominals may not kick in before the next bicep curl or again, they may become progressively more delayed as fatigue sets in.

## BAD TECHNIQUE

Consider all the above during an even more vulnerable exercise like overhead triceps, and you can understand why technique can be the difference between creating a masterpiece or developing an eventual disaster.

To break the bad technique habits we need to strengthen the weaker muscle groups under low resistance, and stretch the tight and overactive ones. So this means functional ab exercises such as planks, shoulder stability and rotator cuff strengthening and a few stretches - ideally before the arm workout even begins.

## BUILDING STABILITY

Inserting the following stability exercises at the start of your sessions with clients will help address the underlying weaknesses and assist clients perform to their full potential, even without injury.

Perhaps start the session with some abdominal work, rather than leaving it till the end. Encourage the maintenance of good posture throughout all arm exercises, ensuring the abs are drawn in, shoulder blades down-and-back, chin tucked in and shoulders away from the ears and so on.

If you're a trainer, be very pedantic about what the shoulders, shoulder blades, upper traps and arms are doing when it comes to your clients' technique. Use the mirrors in the gym to help monitor form and to educate your clients on what poor technique exactly looks like, so that when they're working out alone they will be able to monitor themselves.

The more functional practise a client does such as correcting themselves every time they allow the shoulders to hunch, the more improvement you will notice and the quicker they will be able to advance the exercise. So correcting them every exercise, every time, is worth it!

### IMPROVING CLIENTS' ARM WORKOUT

There are exercises that are worth trying in order to activate the core muscle groups and relax the overactive neck and chest muscles. These will progress your clients strength and generally improve your clients' arm workouts:

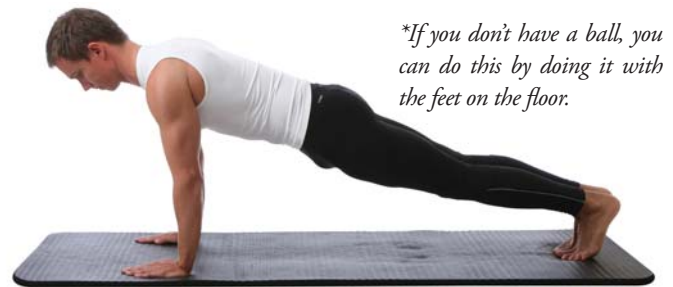


## PERHAPS START THE SESSION WITH SOME ABDOMINAL WORK, RATHER THAN LEAVING IT TILL THE END.

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### Plank on the ball: An old classic to increase your core stability and endurance

Place the ball\* under your stomach, then place the hands on the floor and slowly walk the body out so the knees, shins or feet are on the ball. The further out you go the harder it is. The hands should be shoulder width apart and definitely no dipping through the lower back. It is best to use a mirror to check your technique. Hold this plank position for as long as you can. Maintain good technique keeping your transversus Abdominis, tummy flat and no dipping through the lower back. If you feel any discomfort, don't go out so far. Ensure the shoulders are drawn down and back. Build to 1-2min



*\*If you don't have a ball, you can do this by doing it with the feet on the floor.*

### Flight – This improves your posture, works your shoulders, mid back and the helps tone the back of your arms

Lie on your front with your forehead on the floor. You need your shoulder blades squeezed down and back, and your arms stretched behind you, just off the floor. Slowly rotate your arms, turning your palms up then down. Keep your hands off the floor, reaching your fingers towards your feet. Breathing in for 5 rotations breathing out for 5 rotations. 2 sets of 30 reps.



### External Rotation with a band – This improves the rotator cuff

Tie a stretch band around a door handle or pole in the gym. Alternatively sit with a band around the feet as pictured. Sit on a bench holding the ends of the band, arms by the sides, elbows bent to 90 degrees, palms facing each other. Draw shoulder blades down-and-back and EXHALE as you externally rotate from the shoulders, rotating the hands out to the side. INHALE. Bring hands back to start position. 2 sets of 15 reps



### Abduction # 1 – Perfect for building or rebuilding deltoid strength

Sit on the floor or on a bench with the band underneath your buttocks and the arm bent at 90 degrees. Ensure the band is reasonably short and maintain the bend in the arm. EXHALE as you take the elbow up to horizontal and INHALE as you slowly return back to the side of the body. Ensure the shoulder is drawn down-and-back when the arm is raised and that it does not lift with the arm. Can also be done standing with the band under the feet to anchor it. *2 sets of 20-30 reps*



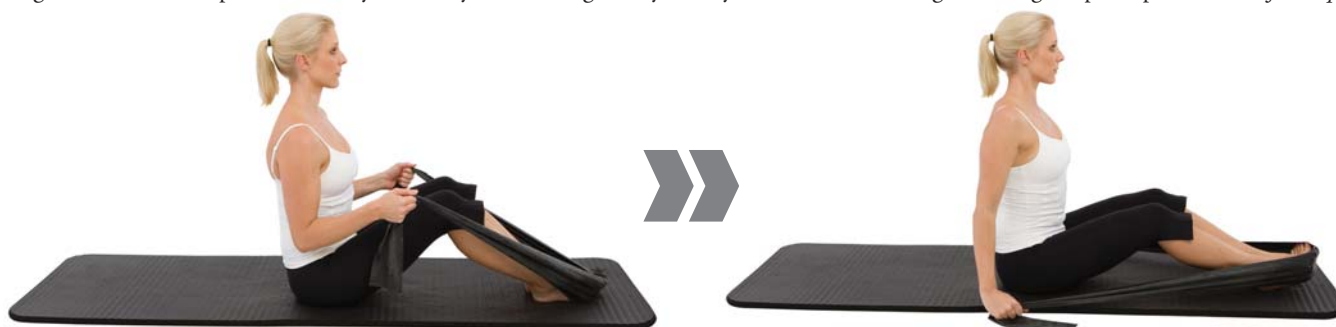
### Abduction # 2 – Again, great for the shoulder strength - just a little more challenging.

Sit on the floor or on a bench with the band underneath your buttocks and the arm straight and in line with the body. Ensure the band is reasonably short. Maintain a straight arm and EXHALE as you take the arm out to the side to horizontal and then INHALE as you slowly return it back to the floor. Ensure the shoulder is drawn down-and-back when the arm is raised, and that it does not lift with the arm. Can also be done standing with the band under the feet to anchor it. *2 sets of 20-30 reps*



### Triceps with the band

Sit up tall with the band around the feet or with the band wrapped around a pole in the gym. Starting with the arms bent at 90 degrees and the elbows tucked into the sides. EXHALE and slowly straighten the elbows and then INHALE and bend them again. Try to get the elbows 100% straight and add a little pause in when you do. If you have long arms you may be better off standing and using the pole option. *3 sets of 20 reps*



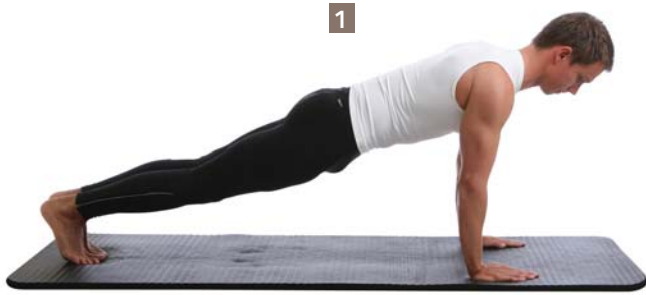
### Biceps half roll back – challenges the biceps and the abs

Sit with the band around the feet and hold onto the band with both hands. Roll the body backwards so you feel the abdominals work to stabilise (as pictured) with a round back. Ensure the toes are pointed and the band appropriately placed to secure the band and preventing any injuries. Raise the arms out in front of the body and while maintaining the height of the elbows, EXHALE and bend the arms. Taking the hands towards the head, INHALE and straighten the arms. Continue to bend and straighten. *2 x 20 reps*. This exercise can also be done by alternating the arms.



## Tricep Push Ups – Tones the back of the upper arms and shoulders whilst training the abs and shoulder stabilisers.

In the push up position (or on the knees to make is easier), hands shoulder width apart, shoulders down-and-back. INHALE and bend your elbows, lowering your body towards the ground. EXHALE and straighten the elbows pressing back up. Try to keep your elbows by your sides throughout the movement and your shoulders away from your ears. *Build up to 2 sets of 20 reps.*



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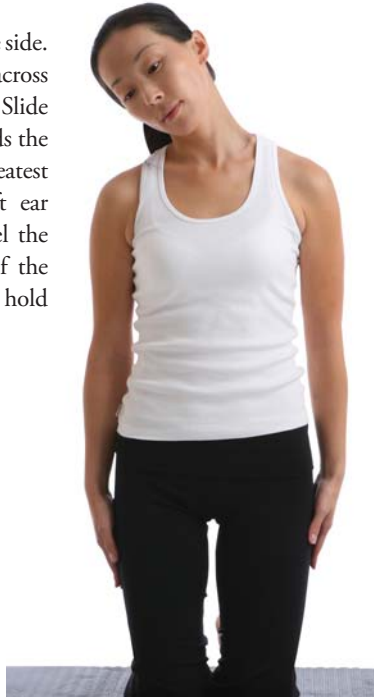
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Easier Version

## Neck stretch

Stand with the arms by the side. Gently draw the right ear across towards the right shoulder. Slide the left hand down towards the left knee, creating the greatest distance between the left ear and the left shoulder. Feel the stretch on the left side of the neck. Breathe deeply and hold for 30seconds to 1 min



## Pec stretch

Stand in a doorway or next to a pole or wall. Place the left elbow against the doorway edge/wall/pole at shoulder height with the elbow bent to 90 degrees so that the forearm sits up along the doorway edge. Step forward and rotate the body to the right to stretch the chest muscles. Breathing deeply and hold for 30 seconds – 1 min. Repeat on the other side



## KEY SUMMARY

- Check technique each time, ensuring that:
- abdominals are protecting the spine, with no arching of the back
- shoulder blades remain down-and-back
- shoulders are rotated out-and-back within the socket
- chin tucked in
- other muscle groups are relaxed (eg. forearms)

Article by Katie Mackenzie, Master Pilates Instructor at Studio Pilates International®. Katie has 10 years experience as a Physiotherapist and keeps busy with long distance running, doing Pilates