



EPTI Level 4 Certificate in Posture and Corrective Exercise

Course Manual



— EUROPEAN —
PERSONAL TRAINING
— INSTITUTE —

Certificate Structure

The certificate is made up of five units:

Unit 1: An Introduction to Posture

Unit 2: Anatomy and Physiology of Posture

Unit 3: Understanding Common Postural Faults and Muscular Imbalances

Unit 4: Postural Assessment & Analysis

Unit 5: Planning and Programming Corrective Exercise

Qualification Aim: To enable fitness professionals to recognise common postural abnormalities, and integrate appropriate corrective exercise into clients' training sessions.

Course Resources

You have two main resources of information for this qualification; this manual, and a series of elearning content to guide you through and explain the content in more detail.

Qualification Assessment

There are three assessments that must be successfully completed to achieve certification in this qualification. Unit 1 is non-assessed, units 2 and 3 are assessed via two multiple choice theory assessments, and unit 4 and 5 are assessed via a postural case study which includes three components; postural assessment, programme design, and a practical delivery video. Further details of the requirements for each assessment will be outlined at the end of the manual.

Layered Syndrome

It is possible for individuals to present with both upper and lower crossed syndrome, this is known as layered syndrome. Its characteristics and causes are a combination of some or all of those found in upper crossed and lower crossed syndromes.

Pronation Distortion Syndrome

Pronation distortion syndrome (Figure 1.4) is characterised by excessive foot pronation (flat feet), foot abduction (feet turned out), and knocked knees (adducted and internally rotated). It can also be linked to, either as the cause of or as a result of, an anterior pelvic tilt. It can occur on one or both sides of the body.

Pronation distortion syndrome can be caused by sitting for prolonged periods on a regular basis, living a sedentary lifestyle, poor gait technique, poor ankle and big toe mobility, and/or imbalanced resistance training.



FIGURE 1.4:

Pronation Distortion Syndrome: Foot over-pronation, foot abduction, & knocked knees

What is Corrective Exercise?

Corrective exercise is structured, programmed exercise designed and implemented with the aim of fixing or correcting one or more specific dysfunctions. Successful delivery of corrective exercise requires a systematic approach to identify movement dysfunction (including postural faults), develop a plan to improve the dysfunction, and implement & execute the programme with clients to achieve the desired outcome through sound exercise technique and performance.

The Role of the Fitness Professional

The role in which you, as a fitness professional, play in the correction of clients posture will vary from client to client dependent upon; the type of postural patterns presented, the severity, other health professionals involved, and your clients goals.

An educational and integrative approach is one that we shall be recommending throughout this course. Educating your clients on how to help themselves to improve their posture will be one of the most powerful approaches as consistent, habitual changes will have the biggest impact for improved posture over time. The integrative approach suggests that, in most cases, the fitness professional integrates corrective exercise strategies into the clients programming rather than taking a solely corrective exercise approach. If we look at the most common reasons for clients attending personal training sessions, it is likely that it is related to weight or fat loss, looking and feeling better, and increasing muscle mass. The client is unlikely to approach a personal trainer and say their main goal is to improve their posture. However, the fitness professional may recognise the need for postural correction. As being more active in general can benefit posture, the clients adherence to an exercise programme



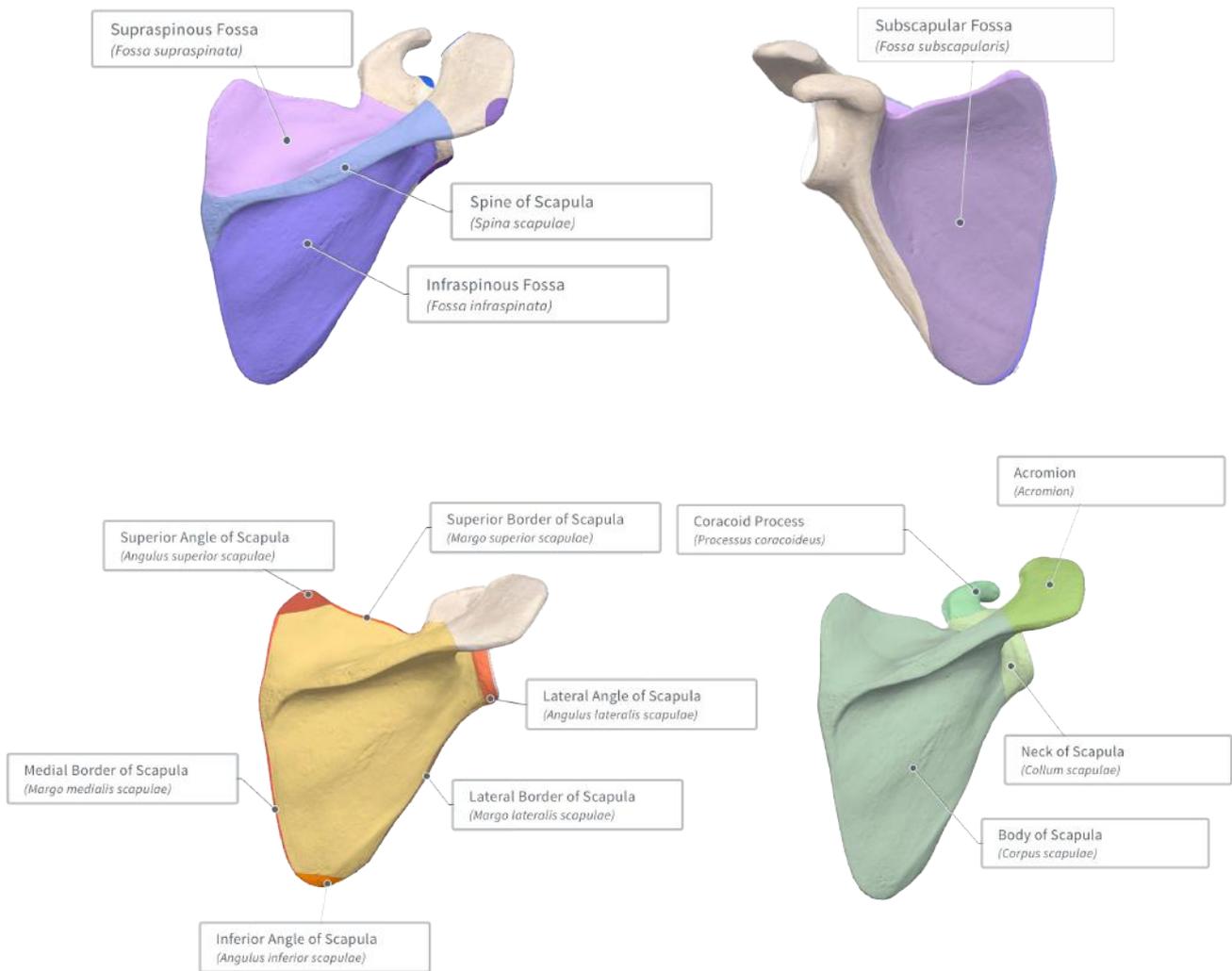


FIGURE 2.8:

Surfaces, borders, and bony landmarks of the scapulae

Table 2.2: Scapula actions and the muscles that produce the actions

Scapula Actions/Movements	Muscles
Scapula Elevation (Scapula moves upwards)	Levator Scapulae Upper Trapezius
Scapula Depression (Scapula moves downwards)	Lower Trapezius
Scapula Protraction (Scapula moves forwards/apart)	Serratus Anterior Pectoralis Minor
Scapula Retraction (Scapula moves backwards/together)	Middle Trapezius Rhomboids
Scapula Lateral Rotation (Inferior angle moves away from midline of the body)	Upper Trapezius Lower Trapezius Serratus Anterior
Scapula Medial Rotation (Inferior angle moves toward midline of the body)	Rhomboids Levator Scapulae Pectoralis Minor

The two pelvic bones also articulate with each other at a cartilaginous joint between the left and right pubis. This joint is known as the ‘pubic symphysis’, or sometimes the ‘symphysis pubis’ (figure 2.11). The pelvic girdle also articulates with the lower limb, specifically the femur, forming the hip joint (figure 2.13). Just as the shoulder girdle forms the ‘socket’ in the ball and socket joint of the shoulder, the pelvis forms the ‘socket’ of the ball and socket joint of the hip. The socket of the hip joint is known as the acetabulum of the pelvis (figure 2.12).

The pelvis acts as the origin for a number of muscles of the trunk/abdomen, as well for muscles of the lower limb. Having a large amount of musculature, and providing attachment sites for both trunk muscles and lower limb muscles, means the pelvic girdle is an important skeletal structure when it comes to muscle imbalances and posture.

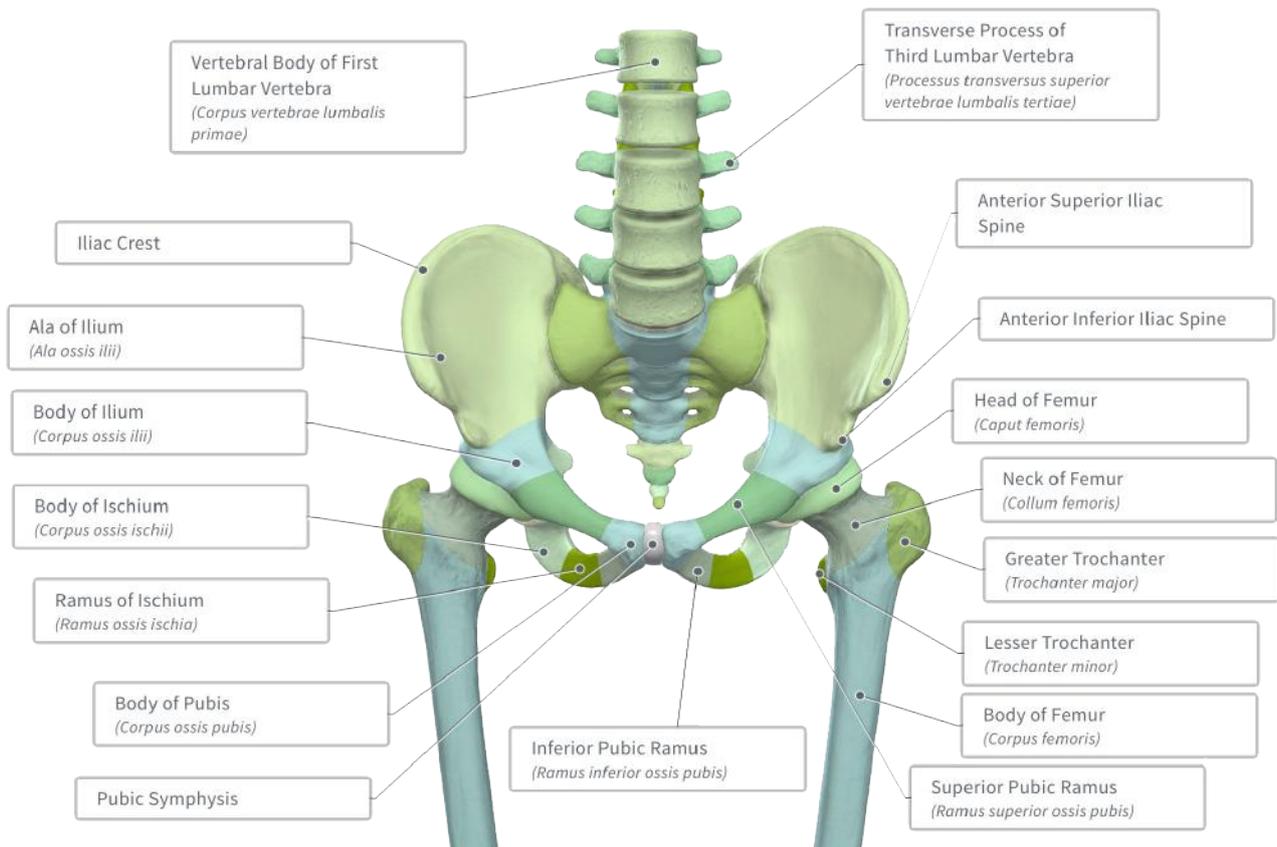


FIGURE 2.11:

Surfaces and bony landmarks of the lumbo-pelvic-hip region

Anatomy of the Hip Joint

The hip (acetabulofemoral) joint is a synovial ball and socket joint formed by the articulation between the head of the femur and the acetabulum of the pelvis. Although considerable mobility of the lower limb is required for human movement, the hip is a weight-bearing joint, therefore the stability of the joint is a vital functional characteristic. Stability is achieved by the deep socket of the acetabulum (figure 2.12) that almost fully encompasses the head of the femur, a fibrocartilaginous ring around the acetabulum called the *acetabular labrum* (figure 2.13), a substantial joint capsule, strong anterior ligaments, and posterior ligaments along with several lateral rotator muscles pulling the femoral head into the acetabulum.



FIGURE 2.12:

The Acetabulum: the ‘socket’ of the hip joint

Hip joint actions and the muscles that produce those movements can be seen in table 2.4.

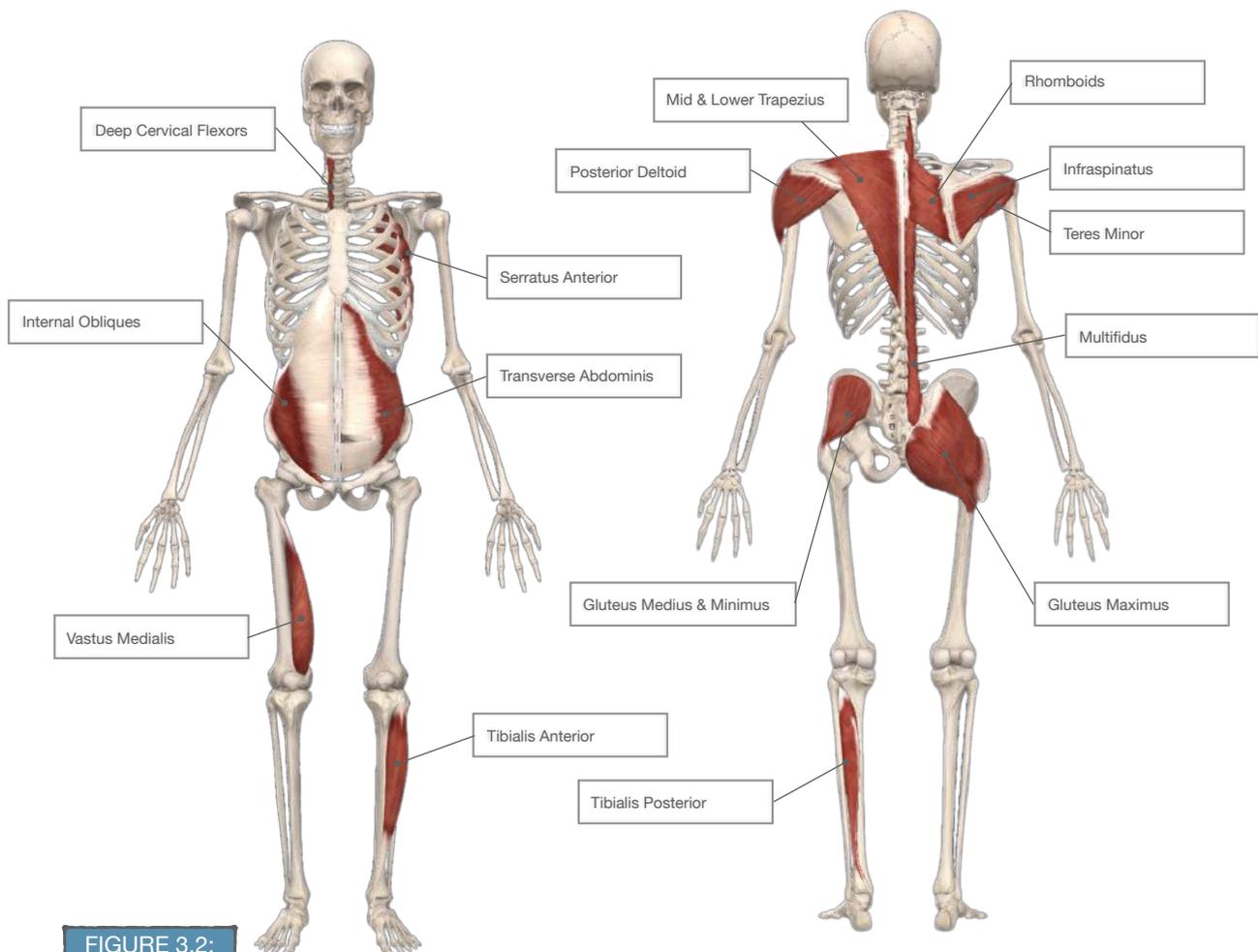


FIGURE 3.2:
Anterior and posterior views of common underactive/weak muscles

Upper Crossed Syndrome

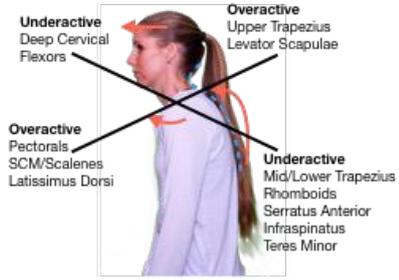
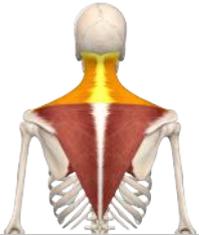
Upper crossed syndrome is characterised by three main postural faults; protracted scapula, internally rotated shoulders, and forward head posture. It can also be closely linked to hyperkyphosis, the excessive curvature of the thoracic vertebrae.

Upper crossed syndrome is common in those with computer-based jobs, those who drive vehicles for long periods of time, as well as children and adults who spend long hours on a computer, games console, tablet or phone. It could also result from repetitive movement such as working on a factory line, or as a sewing machinist whereby the upper torso is repetitively in a 'closed' position.

Poor exercise technique and imbalanced resistance training can also contribute to this postural pattern, specifically through over-protraction and a lack of retraction of the scapula, and overtraining of upper body pushing exercises with under-training of pulling exercises.

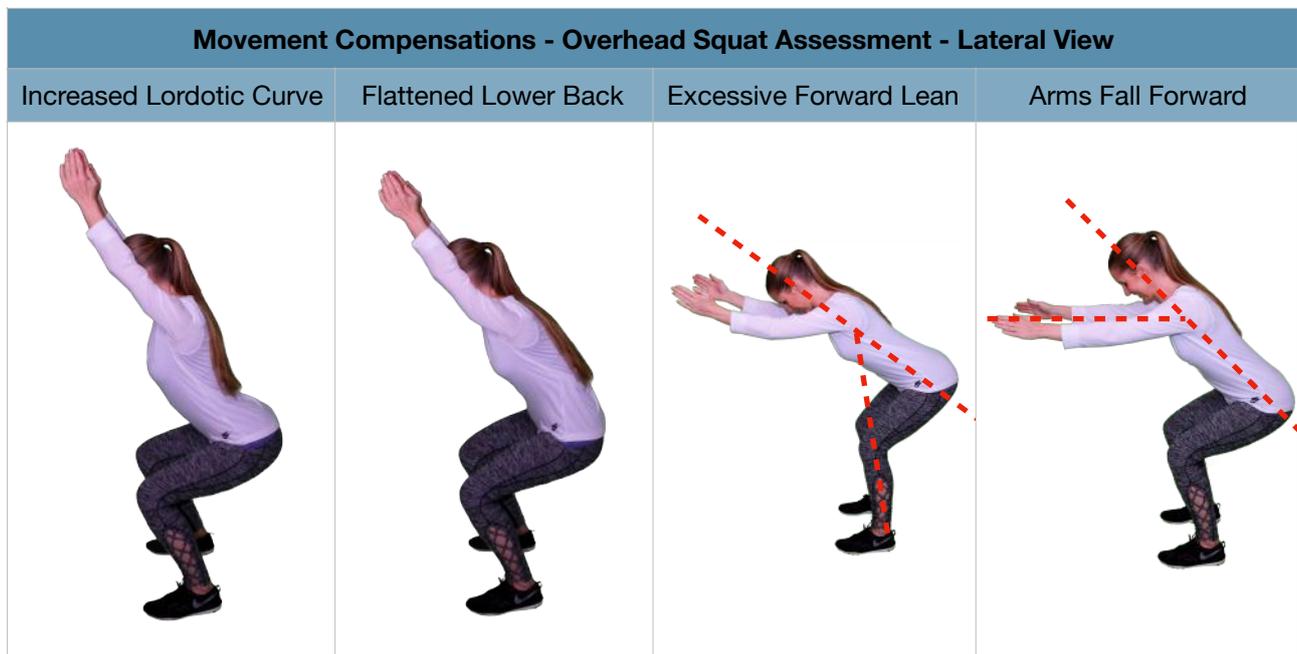
The muscle imbalances include a tightening/overactivity of the pectorals, latissimus dorsi, upper trapezius, levator scapulae, SCM and the scalenes, and a weakening/underactivity of the mid/lower trapezius, rhomboids, infraspinatus, teres minor, and deep neck flexors. If hyperkyphosis is present, it could also include a tightening/overactivity of rectus abdominis and a weakening/underactivity of the thoracic fibres of erector spinae.

Upper crossed syndrome can result in shoulder pain & injuries such as bicep tendinitis and impingement of the rotator cuff, upper back pain, neck pain, and headaches.

Upper Crossed Syndrome Summary		
Posture	Causes	Common pain & injuries
 <ul style="list-style-type: none"> • Protracted & elevated scapulae • Internally rotated shoulders • Forward head posture • Hyperkyphosis 	<ul style="list-style-type: none"> • Prolonged desk/computer work • Prolonged use of handheld devices • Prolonged driving • Repetitive activities/movements with a closed chest, e.g. working a factory line, sewing, craftwork • Physical inactivity • Imbalanced resistance training • Low self-esteem • Sporting activities such as cycling 	<ul style="list-style-type: none"> • Bicep tendinitis • Rotator Cuff impingement • Upper back pain • Neck pain • Headaches
Overactive/Tight Muscles		
Upper Trapezius	Levator Scapulae	Sternocleidomastoid
		
Pectoralis Major	Pectoralis Minor	Latissimus Dorsi & Teres Major
		
Underactive/Weak Muscles		
Deep Cervical Flexors	Middle Trapezius	Lower Trapezius
		
Rhomboids	Serratus Anterior	Infraspinatus & Teres Minor
		

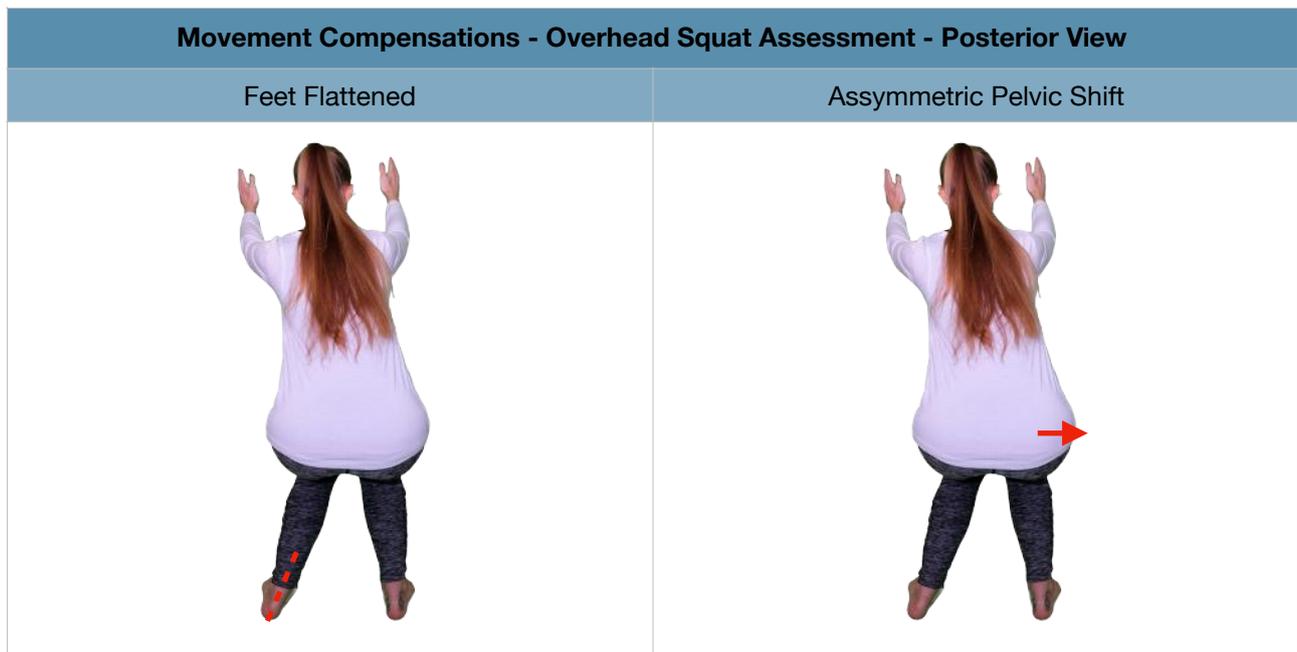
Lateral View Compensations

- Does the lordotic curve in the lower back increase?
- Does the lower back flatten or round?
- Does the torso lean forward excessively (not parallel with lower leg)?
- Do the arms fall forward (losing alignment with the torso)?



Posterior View Compensations

- Do one or both feet flatten (over-pronate)?
- Does the pelvis shift to one side (left or right)?



Cobra - Stability Ball

Purpose: Activate mid/lower trapezius & rhomboids

Recommended repetitions: 8-12

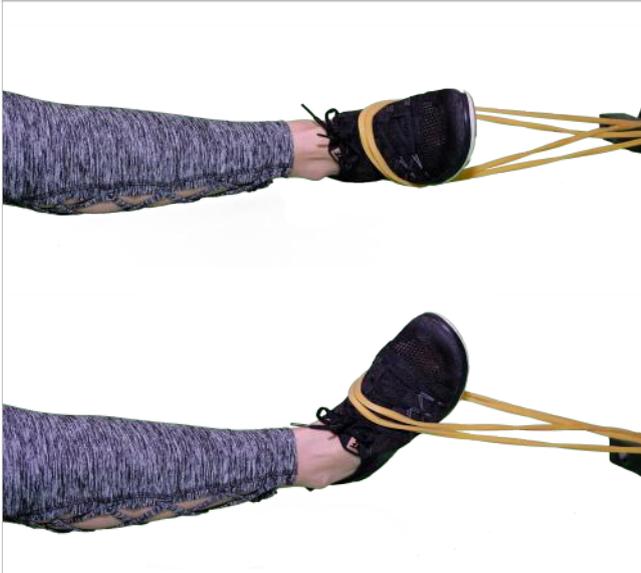


1. Lie face down, feet shoulder width, torso on a stability ball
2. Place arms outstretched towards the floor, at approximately 10 and 2 o'clock, thumbs up
3. Raise arms away from the floor, squeeze shoulder blades together, avoiding lifting through the lower back
4. Without lowering the arms, draw the hands back towards the feet until the back of the hands are facing each other
5. Hold for 2-3 seconds then reverse the movements
6. Repeat for desired repetitions

Tibialis Posterior Activation - Band

Purpose: Activate tibialis posterior

Recommended repetitions: 10-15/side



1. Attach a resistance band to a low anchor point
2. Lie on your side with the other end of the band around the bottom foot
3. Keep the leg with the band on straight, and bend the other knee to get the top foot out of the way
4. Bend the ankle so the sole of the foot turns in towards the midline of the body (ankle inversion) and the foot supinates
5. Hold for 2-3 seconds then release the foot back into a neutral position
6. Repeat for the desired repetitions
7. Switch sides and repeat

Note: This can be performed using a cable machine

Tibialis Posterior Activation - Massage Ball Raises

Purpose: Activate tibialis posterior

Recommended repetitions: 10-15



1. Place a massage ball (or similar) between the heels with toes pointing outwards approximately 30°
2. Whilst keeping the ball in place, raise the heels off the floor
3. Hold for 2-3 seconds and lower slowly to the start position
4. Repeat for the desired repetitions