



**BOXING  
EXERCISES  
TO STRENGTHEN  
THE CORE**



**Edited by Ali Hussain**

**BSc Exercise Science and Health & Master Personal Trainer**

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Core stability has been defined as;

***“the ability of your trunk to support the effort and forces from your arms and legs, so that muscles and joints can perform in their safest, strongest and most effective positions”*** <sup>1</sup>.

A strong core or trunk is essential because it builds a firm base from which force can be generated with your arms and legs. This concept is not specific to humans but applies to all physical structures. For example, picture a pair of scissors with very sharp blades which in theory should be able to cut through anything. However what if you removed the solid metal pin in the centre of the scissors and replaced it with something not as strong, like a blade of grass? Imagine trying to cut a piece of paper using a pair of scissors joined, pivoting and transmitting forces from handle to blade via a piece of grass, the scissors would be useless. Well you are that pair of scissors, except instead of handles you have legs, and instead of blades you have arms, and most importantly instead of a metal pin in the centre you have the core or trunk. One study that highlights just how important the strength of the abdominal muscles are in the ability to use the arms to generate force was conducted on boxers throwing a straight right punch <sup>2</sup>. The study found that 38% of the force for the punch was generated by the leg muscles, 37% from the core and only 24% from the arms. These results are important for all of us not just boxers because it puts a figure on the amount of input from the core whilst using the arms and legs which is something we all do every day in activities like pushing a door open or throwing a ball.

There is much evidence showing that the populations of developed or westernised countries are becoming less active, increasingly sedentary and are developing negative health conditions associated with an inactive lifestyle. Much attention has been paid to the negative effects on the cardio-respiratory system as a result of inactivity and the increased chances of developing conditions such as coronary heart disease, but inactivity will also lead to reductions in balance, proprioception, posture, and stability of joints. Without the latter it is impossible to improve the former, you cannot improve your CV fitness by running if you do not have the balance to stand up, the proprioception to co-ordinate your arms and legs, and the strength to stabilise your joints when you impact and push off from the floor. There is now a need to choose training mediums that create improvements in all components of fitness in order to promote healthy human function.

Most personal trainers and fitness clubs now use equipment such as stability balls, balance discs, balance boards, and body blades to increase balance, proprioception, posture, and stability alongside traditional training equipment such as free-weights and CV machines. Training using equipment that provides an unstable surface increases the activation of the neuromuscular system in a way that no other exercise equipment can.

***“Your most important feats of strength and balance will be required in unstable, unpredictable environments”*** <sup>3</sup>.

It is therefore imperative that fitness professionals are competent and confident in the use of core stability and unstable surface training equipment. This workshop will introduce and teach you to use a range of equipment to train the core and improve balance, but will focus mainly on training that uses a stability ball as this is the most common piece of equipment used to train the core by fitness professionals.

# Benefits

- Improve Stability
- Improve Balance
- Increase Core Strength allowing
- Increases in Extremity Strength
- Improve Posture
- Improve Function
- Improve Sporting Performance
- Rehabilitation
- Fun & Variety

## Improved Stability – the key to healthy human movement

Joint stability can be defined as:

***“the ability for a joint to move freely and fully while also remaining properly aligned”*** <sup>4</sup>

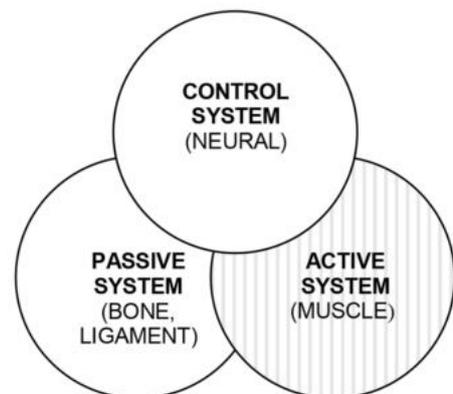
For healthy human movement to occur, the body must first control and stabilise its joints before effectively transferring movement forces into the arms and legs. Optimal human movement depends on optimal stabilisation of joints throughout multiple planes (sagittal, frontal, transverse) of movement and under varied environmental conditions, such as when on an unstable surface.

Three systems that contribute to joint stability have been identified, and all three must work together to achieve their goal. The systems are;

**Passive system** = bones, joints and ligaments

**Active system** = muscles

**Control system** = central and peripheral nervous systems



Training on unstable surfaces such as stability balls improves the function of all of these three systems by increasing the need for effective stabilisation of joints, this includes those of the spinal column which are stabilised by the abdominal muscles. Because of the unpredictable and often three dimensional nature of unstable surface training, a deficit in stabilisation from any one of the three systems will soon become apparent. Training will improve communication between the systems, weakness will be rectified, thus allowing more effective movement to take place. This will have a direct carry over to improving movements in everyday activities.

# Improved Balance

Balance training can be a useful tool (but not the only tool) for improving core stability. Balance can be defined as;

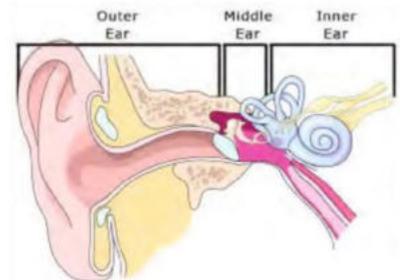
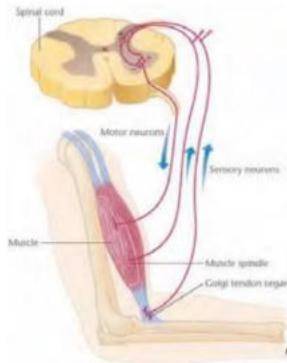
***“the ability to maintain your centre of gravity within the confines of your base of support”*** 5

The ability to sit without back support, stand, walk, run, climb stairs and perform most tasks in life depends on a good sense of balance. Balance is maintained on the basis of sensory information supplied to the central nervous system from three main subsystems. They are;

Visua

Proprioceptor

Vestibula



Muscle  
Golgi Tendon Spindles  
Joint Capsule Organs  
Receptors

The proprioceptive system reports information detected in the peripheral nervous system to the central nervous system. The information is detected from the visual system (the eyes), the vestibular system (the inner ears), and the proprioceptive system. The proprioceptors responsible are the muscle spindles detecting changes in muscle length, the golgi tendon organs detecting muscle/tendon tension, and the joint capsule receptors detecting joint tension, movement, and pressure. It is important to be aware that for the central nervous system to make sense of the information provided, and to then initiate an appropriate response in order to control balance, information from the eyes, ears, and proprioceptors must correlate. If conflicting messages are sent the 'confusion' caused may result in motion sickness.

Of the three balance detecting systems, the only one that can be manipulated through training in order to bring about improvements in balance is the proprioceptive system. Improvements in balance through the proprioceptive system occur faster than any other component of fitness. The reason for this is because the proprioceptive system adapts mainly through recognition and memory which takes seconds, as opposed to muscular improvements such as hypertrophy which work on the damage, repair, and adaptation principle which could take three to four days.

## Balance reactions, Righting and Equilibrium

**Righting reactions** are to be dominant when we are on a **fixed or stable surface**, such as standing unsupported or walking down the road.

**Equilibrium reactions** are more dominant when the **supportive surface moves underneath us**. Standing on a moving train, surfing, and horse riding are examples of using equilibrium and righting reactions together, but equilibrium reactions are dominant.

## Perception

The ability to balance on a stable or unstable surface and the level of muscular contraction generated may also be dictated by the person's psychological state as well as their physical conditioning. When standing or walking on a narrow and/or high surface the feelings of threat may be much greater for some people. The actual physical area that the individual is in contact with could be exactly the same at height as it would be on the ground, but the perception of the threat and the dire consequences of losing balance can lead to muscles contracting in excess of the levels required which is why your legs go wobbly and some people might even freeze on the spot.

In practice we are not suggesting you take your clients to the top of Nelson's Column and make them do one leg squats with their eyes closed, you can however use imagery and get them to imagine they are on a high level or narrow surface to increase the intensity of advanced balance training.

## Types of balance

Think about how you could progressively increase the intensity of balance training. We know that the body detects its position using the combined information from the visual, vestibular, and proprioceptive systems and initiates its response using the righting and equilibrium reactions whilst at the same time taking into account the level of perceived threat. Based on this, below is listed the stages that someone may move through when balance training. It also follows the same progressions we all made when learning to sit, stand, walk, and run as children.

1. Standing/sitting still on an unsupported **stable surface**
2. Moving on a **stable surface**
3. Standing still/moving on a narrow or high **stable surface**
4. Standing/sitting still on an unsupported **unstable surface**
5. Moving on an **unstable surface**
6. Moving on a narrow or high **unstable surface**

# Improved proprioception to prevent injury

Proprioception can be defined as:

***“A sense of perception, usually at a subconscious level, of the movements and position of the body and especially its limbs, independent of vision”*** <sup>5</sup>

Many studies support the idea that training using surfaces that increase proprioceptive input to the CNS may decrease the likelihood of injury; one Italian study, which followed two groups of football players, revealed a decrease in ACL tears in the group that performed proprioceptive exercises on a daily basis. However proprioceptive training is often lacking in many fitness routines due to the prevalence of fixed path resistance machines in gyms. Therefore although many people believe using fixed path resistance machines to be safer than free weights at the time of use, they might actually increase likelihood of injury in the functional environment (sport, activities of daily living), in the long term due to a lack of proprioception. It is essential that this is addressed through effective, appropriate programme design.

Proprioceptive training should form the cornerstone to any rehabilitation programme as it leads to better control of joints. Without re-educating proprioceptive abilities, a return to full functional activity will be limited. Stability ball training can be successfully used for injury prevention or during the rehabilitation phase. Weakened muscles can be strengthened and the body's proprioceptive mechanisms stimulated to protect our joints and soft tissues, thus reducing the likelihood of further musculo-skeletal injury.

## Fun & Variety

Many gym members have been performing the same old exercises in the same old programme for many years. What is even worse is that many instructors are also guilty of this, giving the same old exercises to most of their clients. After good initial results (because it is a new stimulus), improvements in fitness are reduced, and current fitness may begin to diminish if the training is not varied. The training becomes boring and this also contributes to the slow down because you are lacking the motivation to work hard. All of this may help to explain low exercise adherence statistics and high turnover of gym memberships. Including core and unstable surface training within your clients programmes will add variety, and increases the fun and enjoyment of the training. If training is enjoyable, exercise adherence is virtually guaranteed.

## Core Muscle Layers

### Deep Layer

Position sense  
Segmental stabilisation

### Middle Layer (inner unit)

Join upper & lower body  
Stabilise lumbo-pelvic hip complex  
Create intra-abdominal pressure

### Outer Layer (Outer Unit)

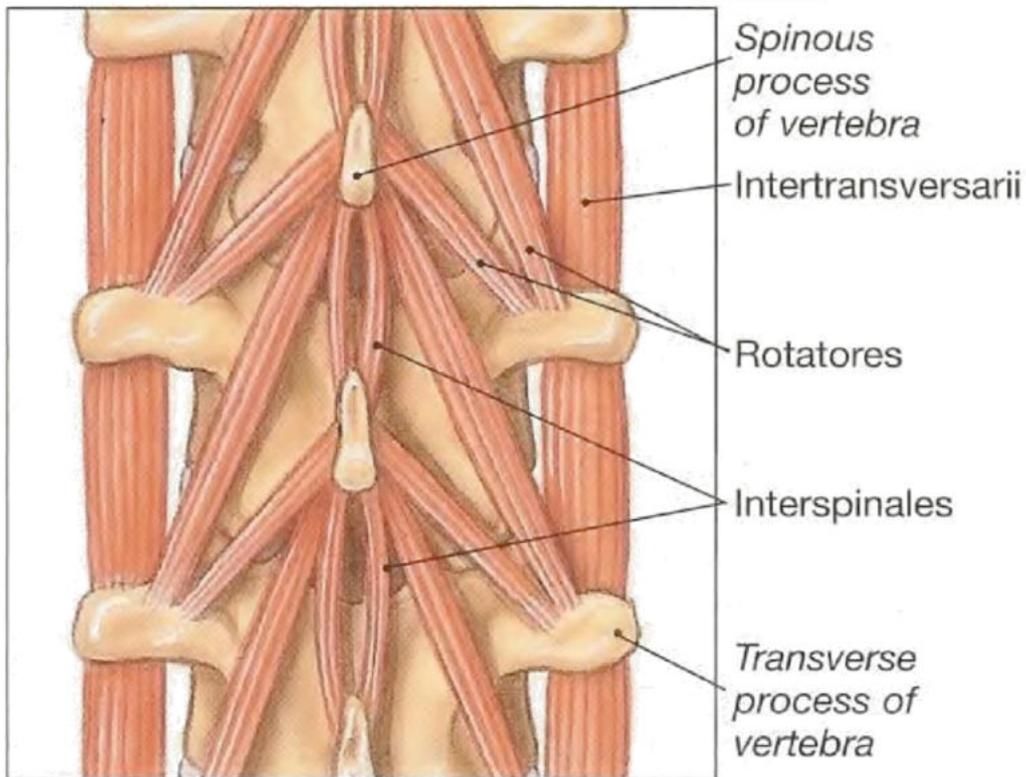
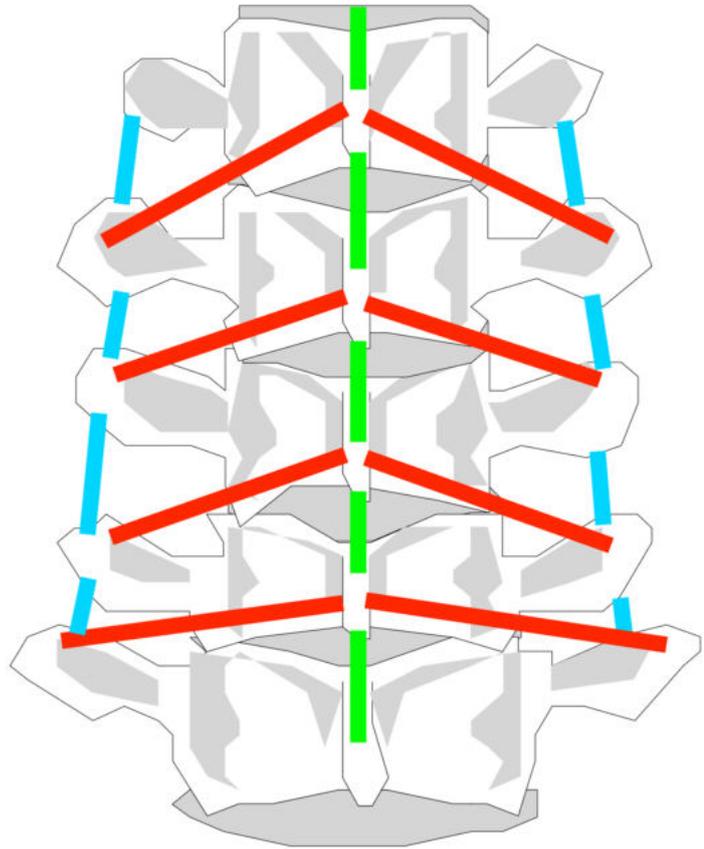
Gross physiological movements  
Spinal stabilisation

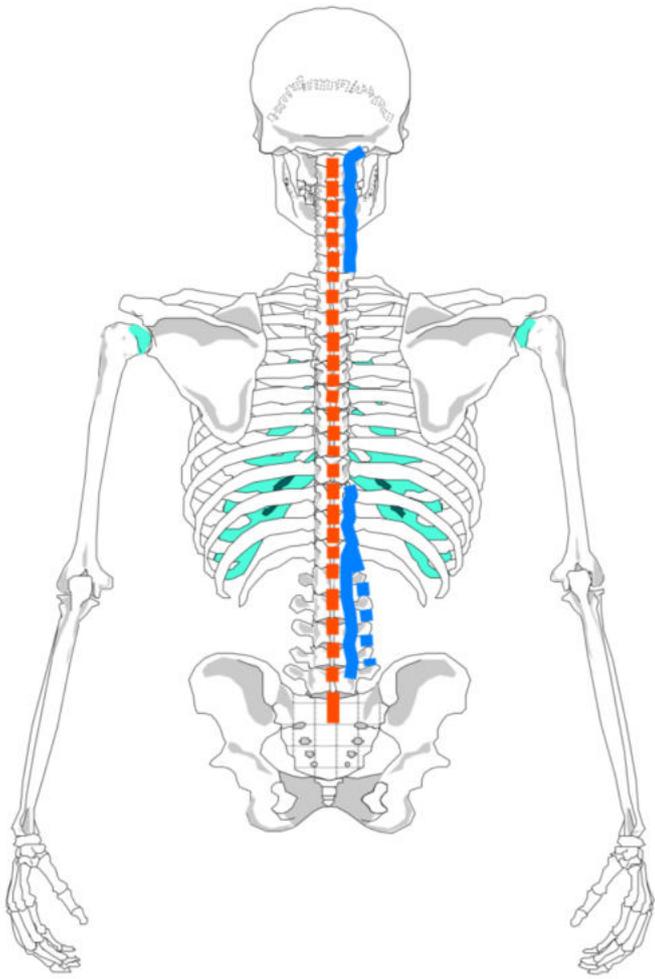
# Intersegmental Muscles

Interspinales

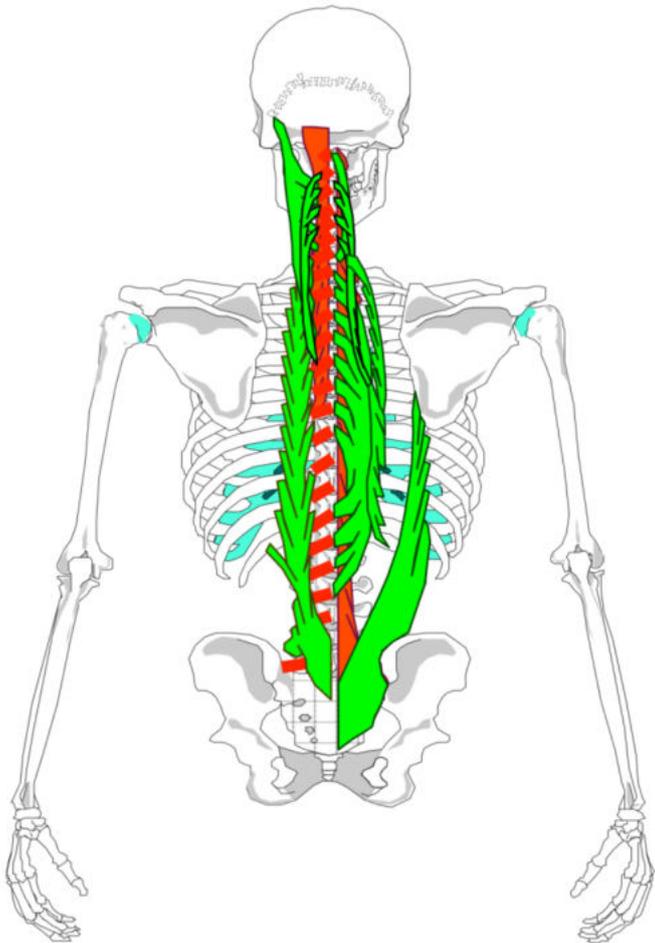
Intertransversarii

Rotatores



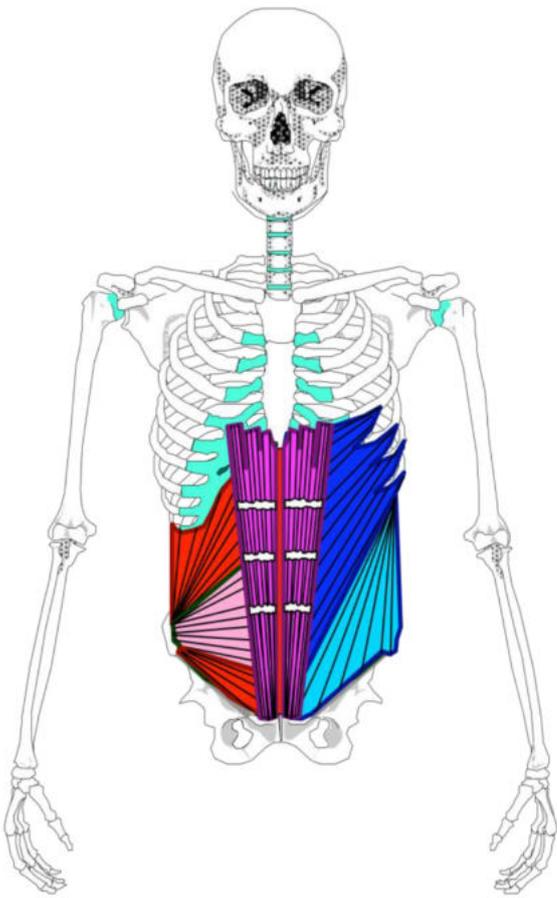


**Interspinalis  
Intertransversari  
Rotators**

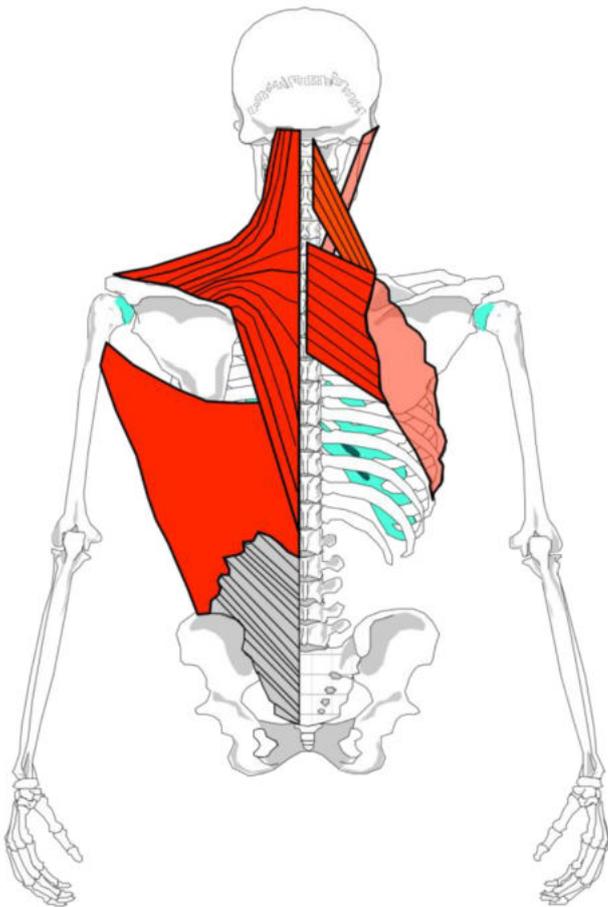


**Erector Spinae  
Multifidus**

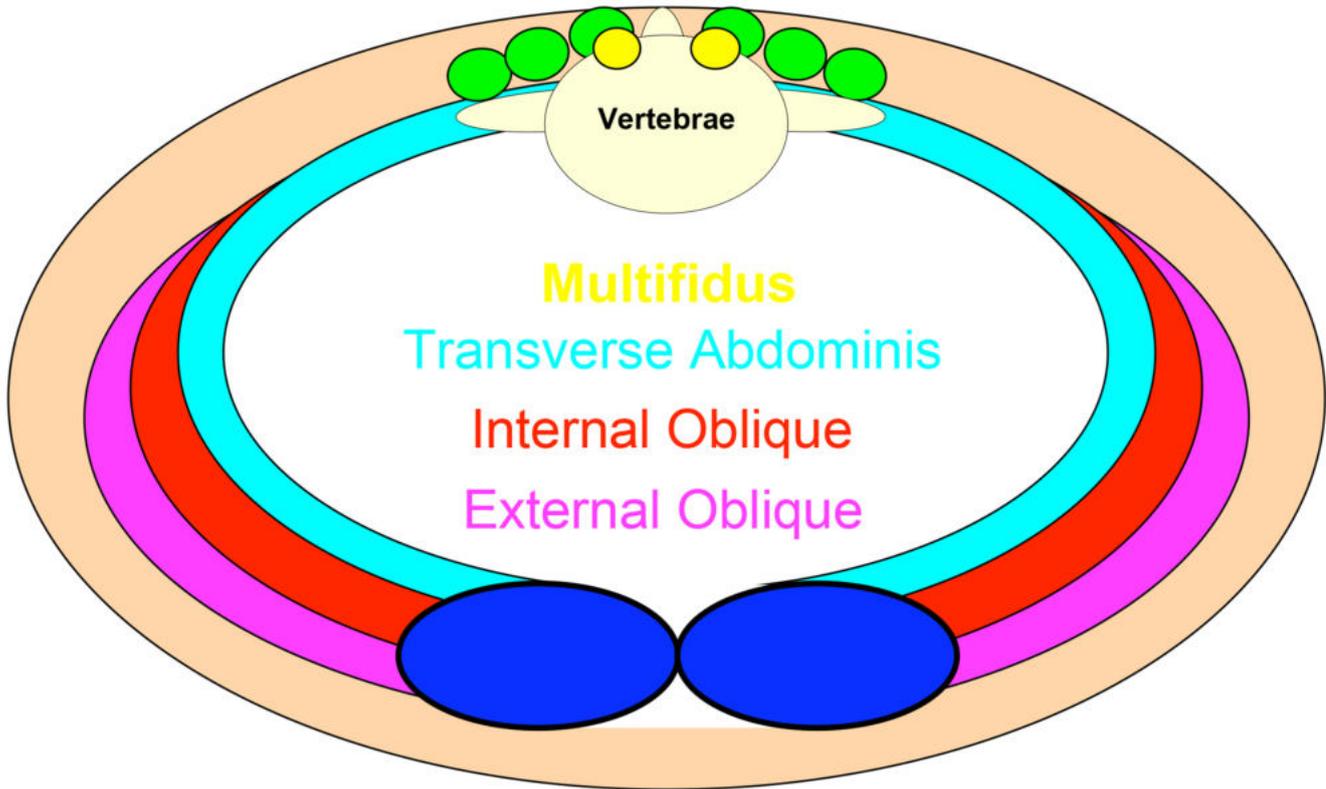
**Internal Obliques**  
**External Obliques**  
**Rectus Abdominis**  
**Transverse Abdominis**



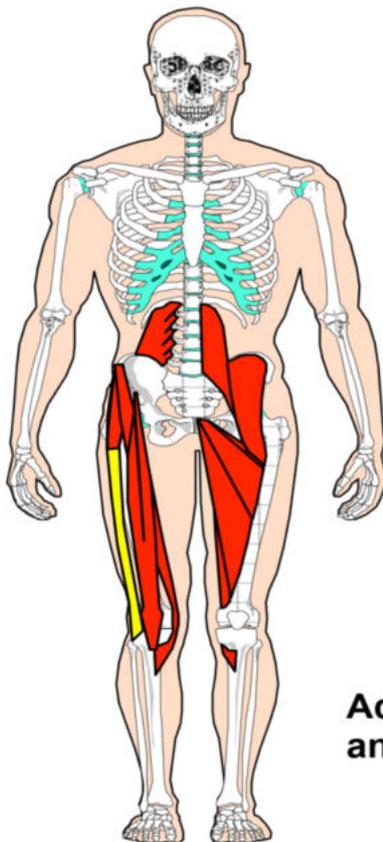
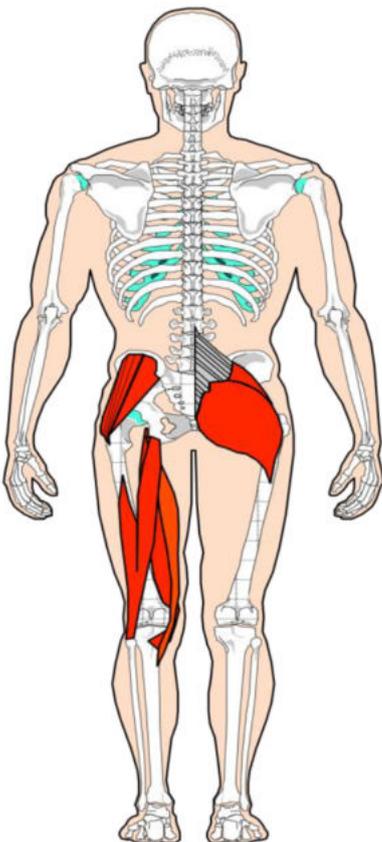
**Lattissimus Dorsi**  
**Trapezius**  
**Rhomboids**  
**Levator Scapulae**



# Erector Spinae



## Rectus Abdominis



- Quadratus Lumborum
- Iliacus
- Psoas Major
- Tensor Fasciae Latae
- Sartorius
- Adductors
- Hamstrings
- Glutes

**Additional muscles that stabilise and control the pelvic girdle**

## Poor posture

Poor posture may be a result of many varying factors. It may be a result of trauma suffered by the body; some form of deformity within the musculoskeletal system or even through faulty loading. Because sitting has become a position that our bodies maintain for long periods of time (possibly 8 hours +) the majority of today's society are losing the fight against gravity and altering their centre of gravity (COG). In good posture your postural muscles are fairly in-active and energy efficient, only responding to disruptions in your balance to maintain an upright position. Therefore, as one moves away from ideal alignment postural muscle tone is increased, thus increasing energy expenditure.

## History of the stability ball

The stability ball dates back to 1963 when it was first designed by Italian toy manufacturer Aquilino Cosani. A stability ball is quite basically a reinforced beach ball, which is one of the reasons people like using them, because they are fun to use. Aquilino Cosani went on to modify the stability ball and invented the popular children's toy of the 1970's the space hopper.

During the 1960's and 1970's musculoskeletal rehabilitation specialists (including physiotherapists), such as Dr Susan Klein-Vogelbach from Switzerland, began to use the balls in their clinics. As their popularity in European rehab circles continued to grow, the emerging personal training scene in the U.S.A was introduced to stability balls by European speakers at fitness and therapy conventions on the west coast.

The 1990's saw the stability ball go mainstream with most gyms and personal trainers in countries such as the America, Britain and Australia incorporating their use into the training programmes of the majority of their clients. This explosion into the mainstream fitness industry was largely due to the influence of high profile industry educators such as Paul Chek, Gary Gray, and Juan Carlos Santana.

Whilst many pieces of equipment claimed to train the core such as the Ab Cradle have come and gone, stability balls have continued to grow in popularity over the last nearly 50 years. This, and the fact that they are have been used throughout this time by medical professionals as well as the fitness industry is a testament to the effectiveness of training with a stability ball.



- 1960's Aquilino Cosani
- 1960's Dr Susan Klein-Vogelbach
- 1980's San Francisco personal trainers
- 1990's Paul Chek, Gary Gray, Juan Carlos Santana

## Stability ball safety

- Do not kick the Stability Ball
- Use an anti-burst ball only
- Keep away from direct heat
- Check the ball for imperfections before use
- Use only on a non-slip surface
- Ensure floor is clean & clear of obstructions
- Always warm-up & cool-down
- New users to be monitored at all times
- Ensure the safety & effectiveness at all times
- Reduce resistance when using a ball
- Progress gradually

## Teaching points

It is fundamental to the success and safety of using unstable surface training equipment to understand, recognise and use two main teaching principles, they are **Neutral alignment** and **Abdominal bracing**.

### Neutral Alignment

Neutral alignment refers to the maintenance of cervical, thoracic and lumbar curves in balanced proportions to ensure optimal functioning of the entire musculoskeletal system.

*“the proper alignment of the body between postural extremes. In its natural alignment, the spine is not straight. There is a secondary curve in the lumbar region (lordosis), a primary curve in the thoracic region (kyphosis) and a secondary curve in the cervical vertebra at the top of the spine. In neutral posture, the body is able to function in its strongest, most balanced position. Stress to the joints, muscles, vertebrae and tissue is minimised”*

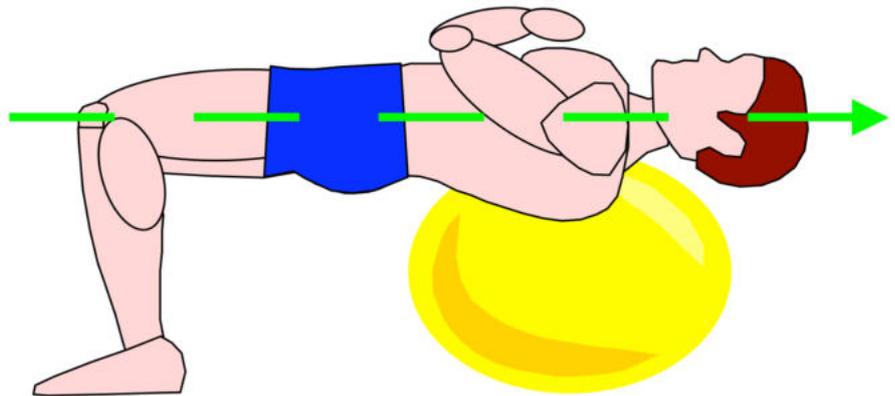
**Neutral**

**Head position**

**Abdominal strength**

**TVA**

**Breathing**



## Stability Ball Progressions

- Increase the lever length
- Vary leg positions
- Reduce the contact area
- Close your eyes
- Change inflation levels
- Include cables, dumbbells, medicine balls, bands & manual resistance
- Increase or decrease the time under tension
- Vary the speed of movement
- Increase the flexibility demand

## Common Technique Faults

Stability ball instruction is a skill, which may only be learnt through constant practise. When instructing stability ball exercises the trainer might observe several common errors, that if allowed to continue will decrease the effectiveness of each exercise.

### Back arching

The back and hips must be optimally aligned. Avoid arching the back, which may be indicative of weakness of the gluteus maximus and over active low back muscles.



**Incorrect**



**Correct**

### Hip flexing

Hip flexing is indicative of poor abdominal strength. Modify the exercise so form can be maintained.



**Incorrect**



**Correct**

### Shoulder hitching

Avoid letting the shoulders ride up towards the ears by depressing the shoulders and fixing both scapula so that, as far as possible, they remain flat to the thorax. Shoulder elevation may be indicative of overactive upper trapezius muscles with poor shoulder complex stabilisation and may create potentially damaging forces through the shoulders and neck.



**Incorrect**



**Correct**

### Chin poking

Chin poking is a sign of poor neck stabilisation. To ensure optimal head neck alignment, place the tongue to the roof of the mouth just behind the teeth and tuck the chin in (“double chins”).



**Incorrect**



**Correct**

### Knees deviating inwards

This is indicative of weakness in the gluteals, which fail to control and stabilise the angle of the thigh. Keep the knee in-line with the toes at all times.



**Incorrect**



**Correct**

### Stomach protruding

This error occurs if the deep abdominal wall is not activating correctly or the intensity of the exercise is beyond the individual’s stabilisation threshold.



**Incorrect**



**Correct**

## Breath holding

There is a great temptation to hold the breath when performing stability ball exercise particularly, since it takes a great deal of concentration and many of the muscular contractions are isometric. Continuous breathing is to be encouraged during all exercises.

## Flexibility

The stability ball is an excellent tool for muscle stretching. Specific stretches may be employed prior to a workout to release identified tight muscles or in the cool down to aid with relaxation, return muscles to their resting length or to develop flexibility.

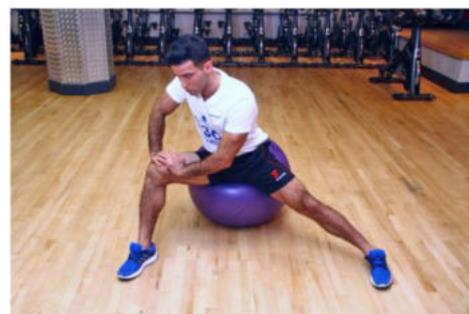
### Example stability ball stretches:



**Hamstring stretch**



**Hip flexor stretch**



**Adductor stretch**



**Latissimus dorsi stretch**



**Pectoralis major stretch**

## Warm up

Before beginning the exercise programme, it is important to warm the body structures. A warm up will increase core temperature, mobilise joints by gently increasing range of movement (ROM) and prepare the mind and body for more vigorous exercise. A warm up consists of two components: a general warm up using large muscles in a rhythmical manner and a specific warm up which includes performing a few lighter intensity repetitions of the exercise to be performed. Included below from **1 to 5e** are general warming up exercises using the stability ball. Perform 10-20 repetitions of each exercise increasing the ROM gradually.

### 1. Seated mobility large random movements

**Main muscles:** rectus abdominus, erector spinae, obliques



- Sit on the ball with good posture
- Small, slow movements in random directions
- Increase to large random movements
- Increase speed to rapid, random movements

### 2. Seated mobility smaller controlled movements

**Main muscles:** rectus abdominus, erector spinae, obliques

- Sit on ball with good upright posture
- Keep head, shoulders, and legs in a fixed position throughout
- Perform slow, small, deliberate and controlled movements of the pelvis

## 2a. - Side to side

**Main muscles:** obliques, quadratus lumborum



- Ensure shoulders stay level
- Avoid leaning over to the side
- Pelvis moves under the torso, not torso over pelvis

## 2b. - Forward and back (pelvic tilt)

**Main muscles:** rectus abdominus, erector spinae



- Good posture throughout, avoid slouching especially on posterior tilts
- With fixed legs and upper torso, tilt pelvis anteriorly and posteriorly
- Breath in when pelvis is anteriorly tilted and out when posteriorly tilted

## 2c. - Circles clockwise and anti-clockwise

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum

- Combine side to side & forward and back movements to make circles
- Perform full circles repeatedly or change direction after each full circle
- Maintain upright torso and fixed legs throughout all movements
- Start slow and small, then increase speed and size of circle

## 2d. - Figure of 8

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum

- Sequentially link the clockwise and anti-clockwise circular movements
- Maintain level head, shoulders, fixed upper torso and legs throughout
- Start slow and small, then increase speed and size of circle

## 2e. - Arms to side

**Main muscles:** obliques, quadratus lumborum



- Sit upright with good posture throughout.
- Keep head, shoulders, torso, and pelvis still and level
- Abduct one arm at a time slowly out the side without leaning to the opposite side
- Brace the abdominal muscles throughout to fix torso

## 2f. - Arms front and back

**Main muscles:** rectus abdominus, erector spinae



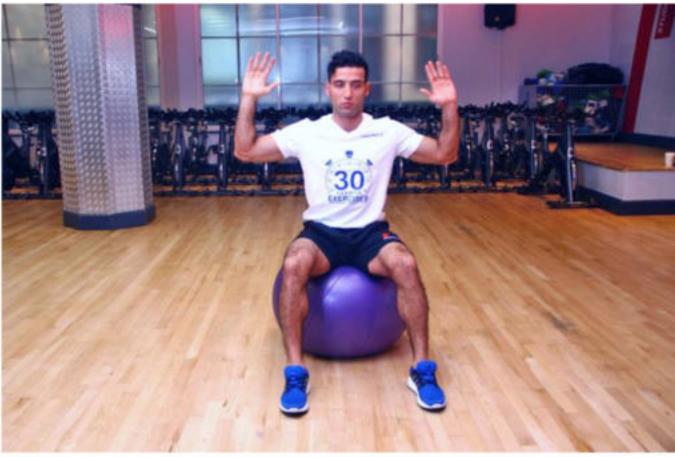
- Sit upright with good posture throughout.
- Keep head, shoulders, torso and pelvis still and level
- Avoid leaning forward or back
- Flex then extend one arm at a time slowly from the shoulder joint
- Brace the abdominal and back muscles throughout to fix torso

## 2g. - Arms mimic exercises such as, Russian twist, chest press, shoulder press

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum



Woodchop



Shoulder Press



Chest Press

- Sit upright with good posture throughout.
- Keep head, torso, and pelvis level
- Brace the abdominal and back muscles throughout to fix torso
- Mimic the movements of upper body exercises
- Start with two arm simultaneous movements then progress to one arm at a time
- Start slow then gradually increase speed
- Add weights to increase demand

***Can also perform all exercises above with***

- eyes open then closed
- feet wide to feet narrow
- two feet on floor to one foot on floor
- one foot off floor, opposite toes then heel only on floor
- trainer randomly tapping the ball or the client

### 3. Four point kneeling on ball

**Main muscles:** rectus abdominus, erector spinae, obliques



- Start with toes on floor, knees against ball and hands on ball (6 point kneeling)
- Maintain a neutral spine with braced abdominal muscles throughout
- Gently rock forward off the toes, onto hands and knees on the ball (4 point kneeling)
- Try to keep ball as still as possible, can progress to small controlled movements
- Return to floor by rocking back, lifting weight off hands and onto toes on the floor

### 4. Upright kneeling on ball

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum



- Start by performing the 6 then 4 point kneel on the ball (hands and knees)
- Slowly and simultaneously lift hands off the ball and extend the hips
- Kneeling upright ensure abdominal muscles are braced so as to fix pelvis
- Focus your eyes on a fixed point in the distance to help balance
- If you lose balance or to end the exercise, rock forward to return to the 4 then 6 point kneel

#### 4a. - Upright kneeling on ball with changing arm positions (2 point)

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum



- Start by performing the 6, 4 then 2 point upright kneel on the ball
- Kneeling upright ensure abdominal muscles are braced so as to fix pelvis
- Focus your eyes on a fixed point in the distance to help balance
- Progress to two arms, both in flexion, both in extension, one abducting and other adducting

#### 4b. - Upright kneeling on ball rotating (2 point)

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum



- Start by performing the 6, 4 then 2 point upright kneel on the ball
- Keep torso upright throughout the exercise
- Isometric contract the lower body muscles to fix the legs and brace the pelvis
- Rotate the spine in both directions in a slow and controlled manner
- Progress the exercise by increasing the speed and ROM but keep the movements controlled

## 4c. - Kneeing on ball, rotating, following outstretched arm with eyes

**Main muscles:** rectus abdominus, erector spinae, obliques, quadratus lumborum



- Perform the 2 point upright kneeling on the ball with rotation
- Whilst rotating have one arm outstretched in front with the index finger pointing
- Whilst rotating focus your only on the outstretched finger (tunnel vision)

This will reduce the balance input from the visual system, and so the proprioceptors will have to work harder to maintain balance

## 5. Standing rotational mobility small movements

**Main muscles:** obliques



- Stand in a strong stable position with feet comfortable distance apart
- For stability isometrically contract the lower body muscles with knees slightly flexed
- Hold stability ball close to body and slowly rotate spine in both directions
- Gradually increase the ROM, speed and hold the ball with outstretched arms for momentum
- All movement to come from the spine not the hips

## 5a. - Standing rotational mobility large movements with alternate heel lift

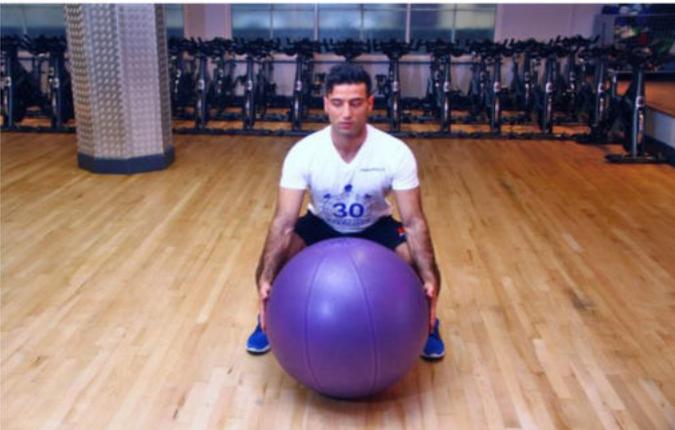
**Main muscles:** obliques



- Gradually progress the standing rotational mobility from small to big movements
- With arms outstretched for increased momentum, rotate through full ROM in both directions
- Whilst rotating extend opposite leg and lift heel off the floor to rotate through increased ROM

## 5b. - Squat to press

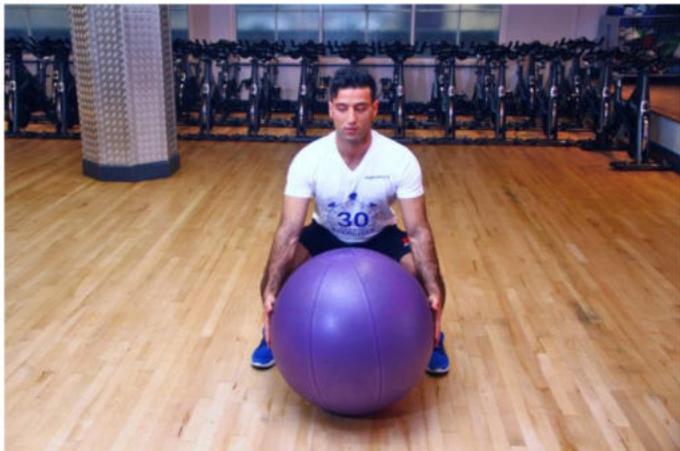
**Main muscles:** glutes, quadriceps, hamstrings, soleus, gastrocnemius, erector spinae



- Stand in a strong stable position with feet comfortable distance apart
- Brace the abdominal muscles and maintain the spine in neutral alignment throughout
- Hold stability ball close to body and begin to perform small squats
- Gradually increase the depth of the squats
- Keep knees apart and in line with the toes
- Extend the arms and as you stand up lift the ball higher in front each repetition
- As you squat down lower the ball down to the floor with your arms between your knees

## 5c. - Squat to press with rotation at top

**Main muscles:** glutes, quadriceps, hamstrings, soleus, gastrocnemius, erector spinae, obliques



- Stand in a strong stable position with feet comfortable distance apart
- With ball held at arms length descend down into the squat with ball lowered down in front
- Ascend up out of the squat whilst raising ball up and around to maximum height
- Whilst ascending up rotate the spine and extend the leg and toes of the opposite leg

## 5d. - Squat to press with rotation at bottom

**Main muscles:** glutes, quadriceps, hamstrings, soleus, gastrocnemius, erector spinae, obliques



- Stand in a strong stable position with feet comfortable distance apart
- Descend into the squat with ball at arms length and lowered down to outside of one knee
- Keep knees apart and in line with the toes throughout
- Ascend up out of the squat whilst raising ball up in front to maximum height

## 5e. - Squat to press with rotation at bottom and top (woodchop)

**Main muscles:** glutes, quadriceps, hamstrings, soleus, gastrocnemius, erector spinae, obliques



- Stand in a strong stable position with feet comfortable distance apart
- Descend into the squat with ball at arms length and lowered down to outside of one knee
- Keep knees apart and in line with the toes whilst in the squat position
- Ascend up out of the squat whilst raising ball up and around to maximum height on opposite side
- Repeat on same side or alternate sides

## 6. Supine hip extension 2 legs (back on ball)

**Main muscles:** glutes, quadriceps, hamstrings



- Lay in supine position with upper back on stability ball, both feet on floor and knees at 90°
- Maintain neutral spine throughout the exercise, moving only at the hips and knees
- Ensure knees stay in line with toes and maintain a fixed distance apart throughout
- Lower hips down to floor whilst keeping shins vertical and completely still
- Lift hips back up to an extended position with out any movement of the shins/ankles
- Arms should be crossed over the chest or by the sides with hands not touching hips

## 6a. - Supine hip extension 1 leg (back on ball)

**Main muscles:** glutes, quadriceps, hamstrings



- Lay in supine position with upper back on stability ball, one foot on floor and knee at 90°
- Maintain neutral spine throughout the exercise, moving only at the hip and knee
- Ensure the knee stays in line with the toe throughout
- Lower hips down to floor whilst keeping shin vertical and completely still
- Lift hips back up to and extended position with out any movement in the shin/ankle
- Arms should be crossed over the chest or by the sides with hands not touching hips

## 6b. - Supine hip extension 2 legs (back on ball) resistance on hips (dumbbells)

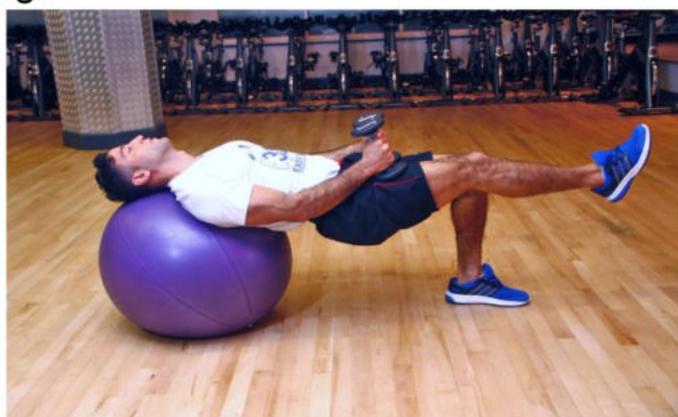
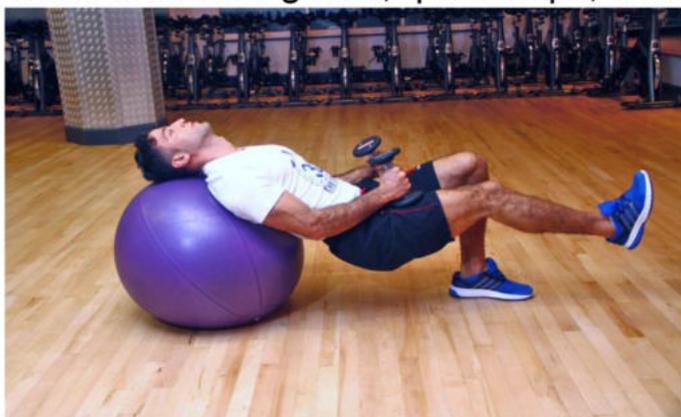
**Main muscles:** glutes, quadriceps, hamstrings



- Lay in supine position with upper back on stability ball, both feet on floor and knees at 90°
- Maintain neutral spine throughout the exercise, moving only at the hips and knees
- Ensure knees stay in line with toes and maintain a fixed distance apart throughout
- Lower hips down to floor whilst keeping shins vertical and completely still
- Lift hips back up to and extended position with out any movement of the shins/ankles
- Holding a dumbbell in each hand, place the hands on the hips in a fixed position

## 6c. - Supine hip extension 1 leg (back on ball) resistance on hips (dumbbells)

Main muscles: glutes, quadriceps, hamstrings



- Lay in supine position with upper back on stability ball, one foot on floor and knee at 90°
- Maintain neutral spine throughout the exercise, moving only at the hip and knee
- Ensure the knee stays in line with the toe throughout
- Lower hips down to floor whilst keeping shin vertical and completely still
- Lift hips back up to and extended position with out any movement in the shin/ankle

## 6d. - Supine hip extension 2 legs (back on ball) resistance on outside of knees (band or manual)

Main muscles: glutes, quadriceps, hamstrings



Lower intensity abduction



Higher intensity abduction

- Lay in supine position with upper back on stability ball, both feet on floor and knees at 90°
- Maintain neutral spine throughout the exercise, moving only at the hips and knees
- Place resistance on the outside of the knees and resist AGAINST the adducting forces
- Resistance can be applied from an exercise band or manual resistance from the trainer
- Ensure knees stay in line with toes and maintain a fixed distance apart throughout
- Lower hips down to floor whilst keeping shins vertical and completely still
- Lift hips back up to an extended position without any movement of the shins/ankles
- Arms should be crossed over the chest or by the sides with hands not touching hips

## 7. Supine hip extension 2 legs (feet on ball)

**Main muscles:** glutes, hamstrings, erector spinae



- Lying in the supine position with straight legs, place both heels up on a stability ball
- Arms should be by the sides and on the floor throughout
- Lift the hips and lower back up off the floor by fully extending the hips
- Under control return to the start position by flexing hips

## 7a. - Supine hip extension and knee flexion 2 legs (feet on ball), (arms on floor)

**Main muscles:** glutes, hamstrings, gastrocnemius, erector spinae



- Lying in the supine position with straight legs, place both heels up on a stability ball
- Arms should be by the sides and on the floor throughout
- Raise the hips and pull the ball towards you at exactly the same time by extending the hips and simultaneously flexing the knees
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hips and extending the knees

## 7b. - Supine hip extension and knee flexion 2 legs (feet on ball), (arms across chest)

**Main muscles:** glutes, hamstrings, gastrocnemius, erector spinae

- Lying in the supine position with straight legs, place both heels up on a stability ball
- Arms should be crossed over the chest, fingers touching opposite shoulder
- Raise the hips and pull the ball towards you at exactly the same time by extending the hips and simultaneously flexing the knees
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hips and extending the knees

## 7c. - Supine hip extension and knee flexion 1 leg (foot on ball), (arms on floor)

**Main muscles:** glutes, hamstrings, gastrocnemius, erector spinae



- Lying in the supine position with straight legs, place one heel up on a stability ball
- Arms should be by the sides and on the floor throughout
- Raise the hips and pull the ball towards you at exactly the same time by extending the hip and simultaneously flexing the knee
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hip and extending the knee

## 7d. - Supine hip extension and knee flexion 1 leg (foot on ball), (arms across chest or weight on hips)

**Main muscles:** glutes, hamstrings, gastrocnemius, erector spinae



- Lying in the supine position with straight legs, place one heel up on a stability ball
- Arms should be crossed over the chest, fingers touching opposite shoulder
- Raise the hips and pull the ball towards you at exactly the same time by extending the hip and simultaneously flexing the knee
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hip and extending the knee

## 7e. - Supine hip extension and knee flexion 2 legs (feet on ball), (arms on floor), ball strikes from trainer

**Main muscles:** glutes, hamstrings, gastrocnemius, erector spinae, obliques



- Lying in the supine position with straight legs, place both heels up on a stability ball
- Arms should be by the sides and on the floor throughout
- Trainer hits ball in random sequence from varying directions to increase stability demand
- Raise the hips and pull the ball towards you at exactly the same time by extending the hips and simultaneously flexing the knees

## 7f. - Supine hip extension and knee flexion 1 leg (foot on ball), (arms on floor), ball strikes from trainer

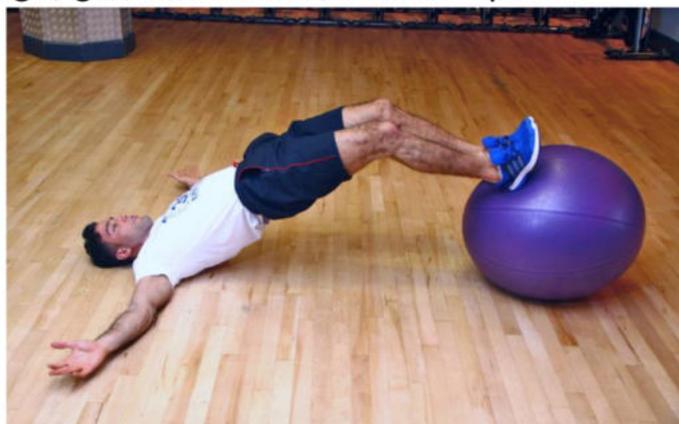
**Main muscles:** glutes, hamstrings, gastrocnemius, erector spinae, obliques



- Lying in the supine position with straight legs, place one heel up on a stability ball
- Arms should be crossed over the chest, fingers touching opposite shoulder
- Trainer hits ball in random sequence from varying directions to increase stability demand
- Raise the hips and pull the ball towards you at exactly the same time by extending the hip and simultaneously flexing the knee
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hip and extending the knee

## 7g. - Supine hip extension and knee flexion 2 legs (feet on ball), (arms on floor), trainer resists ball in all movements

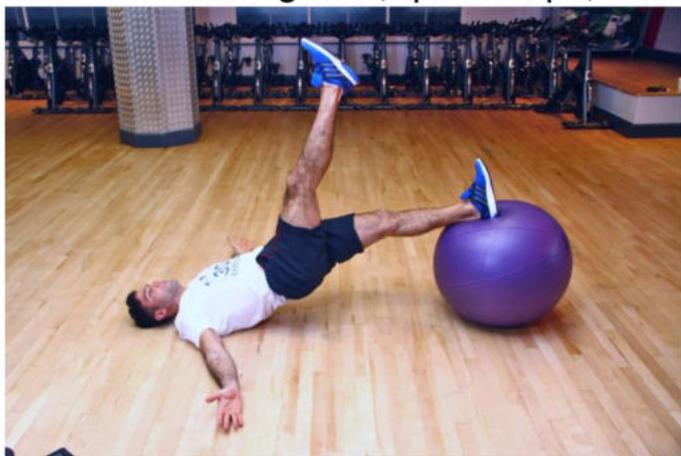
**Main muscles:** glutes, quadriceps, hamstrings, gastrocnemius, erector spinae



- Lying in the supine position with straight legs, place both heels up on a stability ball
- Arms should be by the sides and on the floor throughout
- Trainer grips ball on each side with fingers and lightly resists all movements of the ball
- Raise the hips and pull the ball towards you at exactly the same time by extending the hips and simultaneously flexing the knees
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hips and extending the knees

## 7h. - Supine hip extension and knee flexion 1 leg (foot on ball), (arms on floor), trainer resists ball in all movements

**Main muscles:** glutes, quadriceps, hamstrings, gastrocnemius, erector spinae, abs



- Lying in the supine position with straight legs, place one heel up on a stability ball
- Arms should be crossed over the chest, fingers touching opposite shoulder
- Trainer grips ball on each side with fingers and lightly resists all movements of the ball
- Raise the hips and pull the ball towards you at exactly the same time by extending the hip and simultaneously flexing the knee
- When fully raised the thighs and torso should be in a perfect straight line
- Under control return to the start position by flexing the hip and extending the knee

## 8. Prone Jack Knife 2 legs, hip & knee flexion / extension

**Main muscles:** hip flexors, quadriceps, rectus abdominus, pectorals, deltoids



- In the prone position place both hands on the floor and the front of both ankles on the ball
- Starting from a position of good alignment with a neutral spine, pull the knees in to the chest
- Ensure scapular does not wing, by pushing floor away throughout
- Return to the start position and repeat

## 8a. - Prone Jack Knife 1 leg straight (foot of moving leg on ball) hip & knee flexion / extension

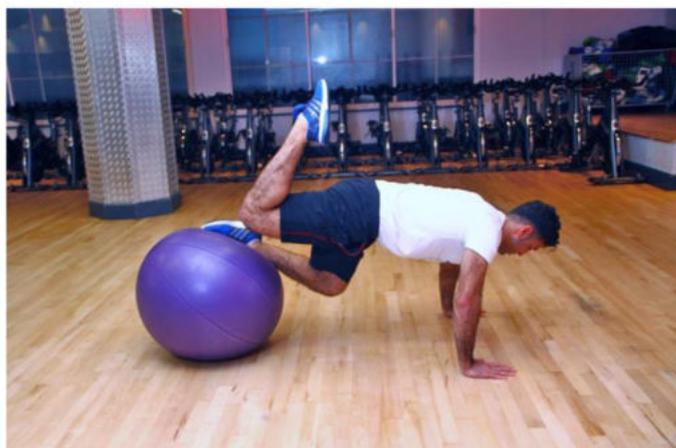
**Main muscles:** hip flexors, quadriceps, rectus abdominus, glutes, hamstrings, pectorals, deltoids



- In the prone position place both hands on the floor and the front of one ankle (working leg) on the ball
- The other leg should be held static in an extended position slightly away from the ball
- Starting from a position of good alignment with a neutral spine, pull the leg on the ball into the chest
- Return to the start position and repeat

## 8b. - Prone Jack Knife 1 leg straight (foot of supporting leg on ball) hip & knee flexion / extension

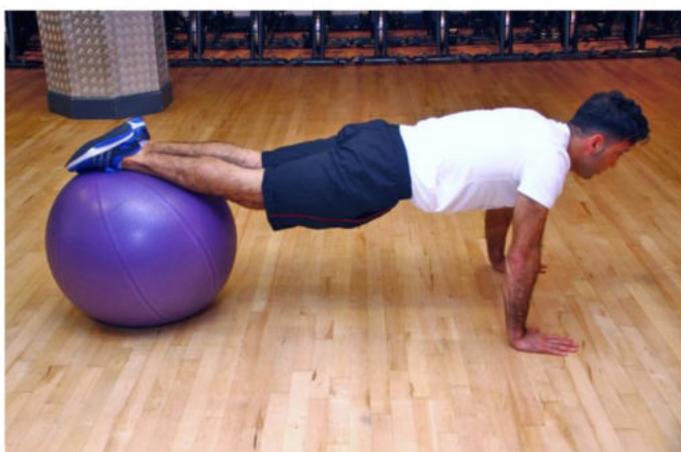
**Main muscles:** hip flexors, quadriceps, rectus abdominus, glutes, hamstrings, pectorals, deltoids



- In the prone position place both hands on the floor and the front of one ankle (supporting leg) on the ball
- This supporting leg should be held static in an extended position on the ball throughout
- The opposite leg (working leg) should be held at the side of the supporting leg, off the ball
- Starting from a position of good alignment with a neutral spine, pull the free supporting leg into the chest
- Return to the start position and repeat

## 8c. - Prone Jack Knife 2 legs, rotate spine with hip flexion / extension

**Main muscles:** hip flexors, quadriceps, obliques, rectus abdominus, pectorals, deltoids



- In the prone position place both hands on the floor and the front of both ankles on the ball
- Starting from a position of good alignment with a neutral spine, pull the knees in whilst rotating the spine at the same time
- Aim for the left knee to touch the right elbow or the right knee to touch the left elbow
- Ensure scapular does not wing, by pushing floor away throughout
- Return to the start position and repeat on same side or alternate sides

## 8d. - Prone Jack Knife 1 leg (foot of supporting leg on ball) hip abduction, hip / knee flexion

**Main muscles:** hip flexors, quadriceps, obliques, rectus abdominus, glutes, hamstrings, pectorals, deltoids



- In the prone position place both hands on the floor and the front of one ankle (supporting leg) on the ball
- This supporting leg should be held static in an extended position on the ball throughout
- The opposite leg (working leg) should be held at the side of the supporting leg, off the ball
- Starting from a position of good alignment with a neutral spine, pull the free leg into flexion whilst abducting at the same time
- Aim for the knee of the free moving leg to touch the outside of the elbow on the same side
- Ensure scapular does not wing, by pushing floor away throughout
- Return to the start position and repeat on same side or alternate sides

## 8e. - Prone Jack Knife 1 leg (foot of supporting leg on ball) hip adduction, hip / knee flexion, spinal rotation

**Main muscles:** hip flexors, quadriceps, obliques, rectus abdominus, glutes, hamstrings, pectorals, deltoids



- In the prone position place both hands on the floor and the front of one ankle (supporting leg) on the ball
- This supporting leg should be held static in an extended position on the ball throughout
- The opposite leg (working leg) should be held at the side of the supporting leg, off the ball
- Starting from a position of good alignment with a neutral spine, pull the free leg into flexion whilst adducting and rotating the spine at the same time
- Aim for the knee of the free moving leg to touch the elbow on the opposite side

## 8f. - All of the above with trainer striking the ball or applying resistance to the ball in all directions

- Strike the ball from random directions in a random rhythm
- Vary intensity according to clients ability

## 9. Prone Push Up (hands on ball) 2 feet on floor

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the thighs.
- Ensure throughout the exercise that the scapular does not wing
- Pivot on the toes with the knees extended
- Feet far apart will increase stability therefore decrease intensity, feet together will decrease stability and so increase intensity
- With the body fixed in good posture lower down to the ball under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

## 9a. - Prone Push Up (hands on ball) 2 feet on step or bench

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the straight legs.  
Ensure throughout the exercise that the scapular does not wing  
The toes of both feet should be placed up on a bench/step/box to increase the intensity  
With the body fixed in good posture lower down to the ball under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

## 9b. - Prone Push Up (hands on ball) 1 foot on floor, other straight leg in abduction

**Main muscles:** hip flexors, quadriceps, obliques, rectus abdominus, glutes, hamstrings, pectorals, triceps, deltoids



- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout
- Ensure throughout the exercise that the scapular does not wing
- Both legs should be straight, one in line with the body with toes on the floor (supporting leg), the other in abduction with toes slightly off the floor
- With the body fixed in good posture lower down to the ball under control

- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

### 9c. - Prone Push Up (hands on ball) 1 foot on step or bench, other straight leg in abduction

**Main muscles:** hip flexors, quadriceps, obliques, rectus abdominus, glutes, hamstrings, pectorals, triceps, deltoids



- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout
- Ensure throughout the exercise that the scapular does not wing
- The toes of one foot (supporting leg) should be placed up on a bench/step/box to increase the intensity
- The other leg should be in abduction whilst remaining level with the supporting leg
- With the body fixed in good posture lower down to the ball under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

## 9d. - Prone Push Up (hands on ball) 2 knees on floor

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the thighs.  
Ensure throughout the exercise that the scapular does not wing  
Pivot on knees held in a flexed position on the floor  
With the body fixed in good posture lower down to the ball under control  
After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

## 9e. - All of the above with trainer striking the ball

- Strike the ball from random directions in a random rhythm
- Vary intensity according to clients ability

## 9f. - Prone Push Up (hands on ball, ball up against wall) 2 feet on floor

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus



- Place the stability ball against a flat wall to increase its stability or in a corner against two walls to give even more stability
- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the thighs.
- Ensure throughout the exercise that the scapular does not wing
- Pivot on the toes with the knees extended
- Feet far apart will increase stability therefore decrease intensity, feet together will decrease stability and so increase intensity
- With the body fixed in good posture lower down to the ball under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

## 10. Prone Push Up 2 legs (feet on ball)

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



- In the prone position place both hands on the floor at a comfortable distance apart
- Place the front of both ankles on the top of the stability ball
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the straight legs
- Ensure throughout the exercise that the scapular does not wing
- With the body fixed in good posture lower down to the floor under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the ball throughout the exercise

## 10a. - Prone Push Up 1 leg (foot on ball) other leg in abduction

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps, glutes, hamstrings



- In the prone position place both hands on the floor at a comfortable distance apart
  - Place the front of one ankle (supporting leg) on the top of the stability ball
  - The other leg should be in abduction whilst remaining level with the supporting leg
  - With arms straight, brace the abdominal muscles to hold the spine in a neutral position in line with the supporting leg throughout the exercise
- Ensure throughout the exercise that the scapular does not wing  
With the body fixed in good posture lower down to the floor under control  
After reaching the limit of good ROM, return to the start position under full control  
Aim for little or no movement of the ball throughout the exercise

## 10b. - Prone Push Up 2 legs (feet on ball) walking around clock face on hands between reps

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



1



2



3



4

- In the prone position place both hands on the floor at a comfortable distance apart
- Place the front of both ankles on the top of the stability ball
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the straight legs
- Ensure throughout the exercise that the scapular does not wing
- With the body fixed in good posture, walk on your hands sideways around a circle with your feet resting on the ball pivoting in the centre of the circle
- Stop at regular intervals and perform a press up(s) before continuing around the circle

## 11. Prone Push Up 2 legs, front to rear roll between reps, (hands on ball to feet on ball)

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



- In the prone position place both hands on the ball at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout
- Pivot on the toes with the knees extended
- With the body fixed in good posture lower down to the ball under control
- After reaching the limit of good ROM, return to the start position under full control
- Roll forward in the prone position on the ball with the hands walking on the floor to the point where the front of the ankles are on the ball
- With the body fixed in good posture lower down to the floor under control
- After reaching the limit of good ROM, return to the start position under full control

## 12. Supine Windmill Upper Body (90° turns) slow

**Main muscles:** triceps, deltoids, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with feet apart and flat on the floor, knees fixed at 90°, and upper back (scapular) resting on the stability ball.
- Place hands together with arms extended out above the chest. Keeping extended arms aligned centrally over the chest, rotate 90° to one side moving at the spine only  
As your torso rotates to one side, roll the ball to the other (e.g. torso rotates to the left, ball rolls to the right)
- Ensure the thighs stay level with the torso throughout, avoid hip flexion
- Return to the start position under control, repeat or change sides

### 12a. - Supine Windmill Upper Body (90° turns) fast

**Main muscles:** triceps, deltoids, erector spinae, obliques, glutes, hamstrings

- Lay in the supine position with feet apart and flat on the floor, knees fixed at 90°, and upper back (scapular) resting on the stability ball.
- Place hands together with arms extended out above the chest.
- Keeping extended arms aligned centrally over the chest, rotate 90° to one side moving at the spine only
- Move as fast as possible then stop dead at 90°
- As your torso rotates to one side, roll the ball to the other (e.g. torso rotates to the left, ball rolls to the right)
- Ensure the thighs stay level with the torso throughout, avoid hip flexion
- Return to the start position as fast as possible then stop dead, repeat or change sides

## 12b. - Supine Windmill Upper Body (180° turns) slow

**Main muscles:** triceps, deltoids, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with feet apart and flat on the floor, knees fixed at 90°, and upper back (scapular) resting on the stability ball.
- Place hands together with arms extended out above the chest.
- Keeping extended arms aligned centrally over the chest, rotate 90° to one side moving at the spine only
- From this side laying position rotate 180° to the opposite side under control
- As your torso rotates to one side, roll the ball to the other (e.g. torso rotates to the left, ball rolls to the right)

## 12c. - Supine Windmill Upper Body (180° turns) fast

**Main muscles:** triceps, deltoids, erector spinae, obliques, glutes, hamstrings

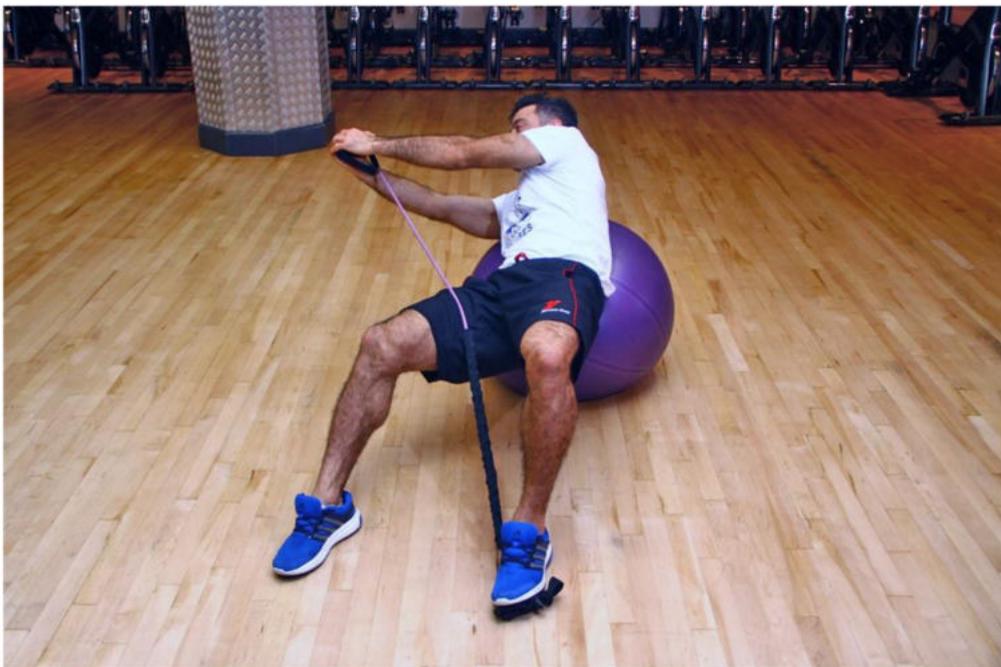
- Lay in the supine position with feet apart and flat on the floor, knees fixed at 90°, and upper back (scapular) resting on the stability ball.
- Place hands together with arms extended out above the chest.
- Keeping extended arms aligned centrally over the chest, rotate 90° to one side moving at the spine only
- From this side laying position rotate 180° to the opposite side as fast as possible then stop dead
- As your torso rotates to one side, roll the ball to the other (e.g. torso rotates to the left, ball rolls to the right)
- Ensure the thighs stay in line with the torso throughout, avoid hip flexion
- Repeat as fast as possible or return to the start position

## 12d. - All above with weight (med ball) in outstretched arms



- Resistance in the form of a medicine ball, dumbbell, or weights disc can be added to increase exercise intensity
- Hold the weight with arms outstretched directly in line with the centre of the chest throughout the exercise

## 12e. - All above with resistance (band or cable) in outstretched arms



- Resistance in the form of an elastic exercise band, tube, or a cable machine can be used to increase exercise intensity
- Change the angle of the band/tube/cable according to which part of the exercise you would like the muscles working hardest

- Maximum resistance will occur when the band/tube/cable is at 90° to the outstretched arms OR at full range of motion therefore full stretch when using an elastic band or tube
- A partner can further increase intensity by applying constant tension to the band or tube through the full ROM by moving the line of the band/tube with the client to maintain 90°
- If using a cable machine, vary the line of resistance by adjusting the level of the pulley

### 13. Supine Lateral Ball Roll

**Main muscles:** obliques, erector spinae, glutes, hamstrings, deltoids, triceps,



- Lay in the supine position with feet apart and flat on the floor, knees fixed at 90°, and upper back (scapular) resting on the stability ball.
- Abduct both extended arms out at 90° to the torso (crucifix position), palms of the hands facing upwards
- Ensure the thighs stay level with the torso throughout, avoid hip flexion
- Maintaining a rigid torso and arms, walk and roll to one side, avoid rotation
- Aim for minimal contact with the ball as you progress through the movement
- Try to get the elbow and upper arm of one arm only resting on the ball
- When you get to the point where you feel you are about to fall, return to the start under control
- Repeat or change sides

## 14. Prone Alternate Arm 2 Ball Shoulder Press (on knees or toes)

**Main muscles:** rectus abdominus, obliques, pectorals, deltoids, latissimus dorsi



- In the prone position with flexed knees on the floor (easy) or toes on the floor (hard), place the forearms and flexed elbows on a stability ball each with both shoulders abducted to 90°
- Maintain a neutral spine with legs in line throughout the exercise
- Move one ball forward by performing a shoulder press action, abducting the arm and extending the elbow
- Under control return to the start position then repeat on the opposite arm
- Maintain good scapular alignment, avoid sinking the chest down between the arms

## 15. 2 Straight Arms Ball Twist Using Wall (2 legs)

**Main muscles:** whole body



- Stand in a strong stable position with feet comfortable distance apart, knees and hips slightly bent, and a rigid neutral spine
- Hold a stability ball out in front with arms slightly flexed

- Ensure the entire body is braced, isometric contractions holding all joints in a fixed position
- Squeeze the ball between the hands and ensure it does not move during the exercise

## 15a. - 2 Straight Arms Ball Twist Using Wall (1 leg)

**Main muscles:** whole body



- Stand in a strong stable position on one leg, knee and hip slightly bent, and a rigid neutral spine
- Hold a stability ball out in front with arms slightly flexed
- Ensure the entire body is braced, isometric contractions holding all joints in a fixed position
- Squeeze the ball between the hands and ensure it does not move during the exercise

## 16. 2 Straight Arms Ball Strikes With Wall (2 leg)

**Main muscles:** whole body



- Stand in a strong stable position with feet comfortable distance apart, knees and hips slightly bent, and a rigid neutral spine
- Hold a stability ball out in front with arms slightly flexed
- Ensure the entire body is braced, isometric contractions holding all joints in a fixed position
- Squeeze the ball between the hands and ensure it does not move during the exercise

## 16a. - 2 Straight Arms Ball Strikes With Wall (1 leg)



- Stand in a strong stable position on one leg, knee and hip slightly bent, and a rigid neutral spine
- Hold a stability ball out in front with arms slightly flexed
- Ensure the entire body is braced, isometric contractions holding all joints in a fixed position
- Squeeze the ball between the hands and ensure it does not move during the exercise

## 17. Resisted 2 Straight Arms Ball Draw With Wall (2 leg)



- Stand in a strong stable position with feet comfortable distance apart, knees and hips slightly bent
- Hold a stability ball out in front with elbows slightly flexed
- As if the ball were a pen, draw a picture or write your name out in front with movements originating from the hips and knees (flexion and extension), and from the spine (rotation)
- Squeeze the ball between the hands
- The resistance the partner provides should not stop the ball but instead slow it down making movement hard but not impossible

## 17a. - Resisted 2 Straight Arms Ball Draw With Wall (1 leg)



- Stand in a strong stable position on one leg, knee and hip slightly bent, and a rigid neutral spine
- Hold a stability ball out in front with elbows slightly flexed
- As if the ball were a pen, draw a picture or write your name out in front with movements originating from the hips and knees (flexion and extension), and from the spine (rotation)
- Squeeze the ball between the hands
- The resistance the partner provides should not stop the ball, but instead slow it down making movement hard but not impossible

## 18. 2 Bent Arms Ball Wrestle With Wall



- Stand in a strong stable split stance (one foot forward), knees and hips slightly bent, and a rigid neutral spine
- Hold the ball against the chest with both arms wrapped diagonally around the ball
- The ball is then wrestled with against the wall by twisting the ball and rotating the torso

## 19. Prone Ball Roll Out (on knees)

rectus abdominus, pectorals, latissimus dorsi



- In the prone position place both forearms on the ball whilst resting on flexed knees on the floor
- Maintain a neutral spine with thighs in line throughout the exercise
- Whilst pivoting on the knees, roll the ball forward from the shoulders by pushing the arms out above the head
- Extend the elbows as you push the ball out and lower the body
- When you get to the point where you feel unable to maintain a neutral spine if you go any further, stop and return to the start position • Repeat under control

Caution: This exercise performed incorrectly (without full control) can seriously damage the spine

## 19a. - Prone Ball Roll Out (on toes)

**Main muscles:** rectus abdominus, pectorals, latissimus dorsi, obliques, hip flexors, quadriceps

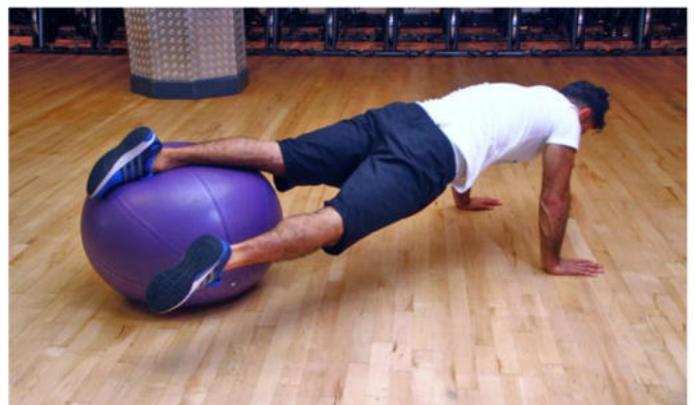


- In the prone position place both forearms on the ball whilst resting on both toes on the floor • Maintain a neutral spine with the legs in line throughout the exercise
- Whilst pivoting on the toes, roll the ball forward from the shoulders by pushing the arms out above the head
- Extend the elbows as you push the ball out and lower the body
- When you get to the point where you feel unable to maintain a neutral spine if you go any further, stop and return to the start position • Repeat under control

Caution: This exercise performed incorrectly (without full control) can seriously damage the spine

## 20. Prone Hip Twist (legs on ball)

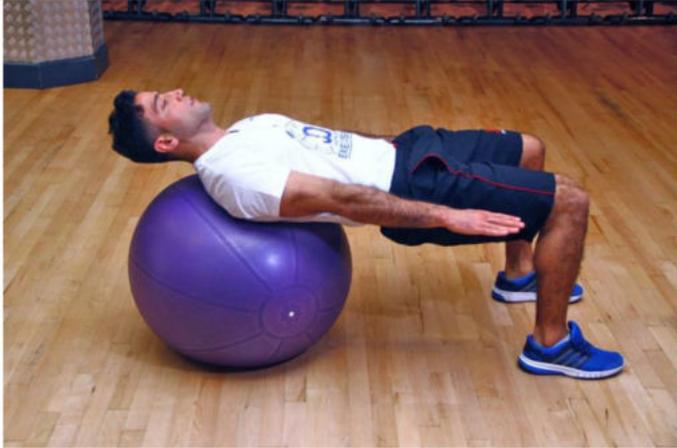
**Main muscles:** rectus abdominus, pectorals, obliques, adductors, hip flexors, quadriceps



- In the prone position place both hands on the floor and the front of both ankles with feet wide apart on the ball
- Starting from a position of good alignment, rotate the spine and twist the lower body to one side
- Ensure scapular dose not wing, by pushing floor away throughout
- Return to the start position and repeat

## 21. SB Crunch

**Main muscles:** rectus abdominus, obliques



- Lay in the supine position with both feet on the floor and the ball under the body's balance point which is in the lower back area (the exact point varies according to height, weight, arm position)
- Flex the lumbar spine by concentrically contracting the rectus abdominus fully (30°), then return to the start position by eccentrically contracting to extend the spine
- Breathe out when flexing and in when extending the spine
- Concentrate on taking the 12<sup>th</sup> rib towards the pubis, avoid chin poking, no need for protraction or cervical flexion
- Vary the arm position to change the intensity. Arms down by the side is easy, extended out above the head is hard

## 22. SB Dorsal Raise

**Main muscles:** erector spinae



- Lay in the prone position with the pelvis on the stability ball and toes on the floor
- Raise from a flexed to an extended spine position. **DO NOT HYPEREXTEND**
- Vary the arm position to change the intensity. Arms down by the side is easy, extended out above the head is hard
- Vary the position of the feet. Wide for more stability and lower intensity, or together for less stability and higher intensity
- Hold isometric contraction or repeat repetitions under control

## 23. SB lateral flexion crunch

**Main muscles:** obliques, quadratus lumborum, rectus abdominus



- Lay side on the ball (hip on and ilium in contact with ball), knees flexed at approx. 90°, bottom hip slightly extended and top hip flexed to stabilise the body on the ball
- Ensure the torso stays side on to the ball throughout with no flexion, extension, or rotation
- Position the arms across the chest or fingers touching temples for increased intensity
- Lower the torso down to the ball by performing lateral flexion only
- After reaching full range of motion return to the start position and continue beyond to perform lateral flexion on the other side
- For added intensity you can hold a weight

## 24. SB Wall squat 2 legs

**Main muscles:** quadriceps, glutes, hamstrings, erector spinae



- Stand facing away from a wall with both feet comfortable distance apart and heels approx. 1 meter from the wall
- Lean back against a stability ball that fits into the curve of your lumbar spine
- Keep knees in line with toes throughout, avoiding them adducting together or abducting apart whilst squatting
- Maintaining a neutral spine descend into the squat flexing the hips and knees at the same time
- As you descend the ball will roll up your back
- After reaching the maximum depth your strength, flexibility and good technique will allow you to achieve, return to the start position by ascending upward under control

This exercise can also be performed carrying a dumbbell in each hand, or a barbell across the back or front of the shoulders

## 24a. – SB Wall squat 1 leg

**Main muscles:** quadriceps, glutes, hamstrings, erector spinae, adductors



- Stand facing away from a wall with one foot only on the ground in a comfortable position with the heel approx. 1 meter from the wall
- Lean back against a stability ball that fits into the curve of your lumbar spine
- Keep the knee in line with toes throughout, avoid adducting or abducting whilst squatting
- Maintaining a neutral spine descend into the squat flexing the hips and knees at the same time
- As you descend the ball will roll up your back
- After reaching the maximum depth your strength, flexibility and good technique will allow you to achieve, return to the start position by ascending upward under control
- For added benefit, plantarflex the ankle on the ascent

This exercise can also be performed carrying a dumbbell on the same side as the working leg, in each hand, one on the opposite side, or a barbell across the back or front of the shoulders

## 25. SB Free standing squat

**Main muscles:** quadriceps, glutes, hamstrings, erector spinae



- Stand upright facing away from a wall with both feet comfortable distance apart and heels approx. 60cm from the wall (or slightly less than the diameter of the ball)
- The ball should rest in your lumbar spine, there is no need to lean against the ball
- Keep knees in line with toes throughout, avoiding them adducting together or abducting apart whilst squatting
- Maintaining a neutral spine descend into the squat flexing the hips, knees and ankles at the same time, hips and knees by the same amount, ankles by half that
- As you descend the ball will roll up your back
- After reaching the maximum depth your strength, flexibility and good technique will allow you to achieve, return to the start position by ascending upward under control
- For added benefit, plantarflex the ankles on the ascent

This exercise can also be performed carrying a dumbbell in each hand, or a barbell across the back or front of the shoulders

## 26. SB Front squat 2 legs

**Main muscles:** quadriceps, glutes, hamstrings, rectus abdominus, gastrocneius, soleus



- Stand upright facing away from a wall with both feet comfortable distance apart and heels approx. 60cm from the wall (or slightly less than the diameter of the ball)
- The ball should rest in your lumbar spine, there is no need to lean against the ball
- Keep knees in line with toes throughout, avoiding them adducting together or abducting apart whilst squatting
- Maintaining a neutral spine descend into the squat flexing the hips, knees and ankles at the same time, hips and knees by the same amount, ankles by half that
- As you descend the ball will roll up your back
- After reaching the maximum depth your strength, flexibility and good technique will allow you to achieve, return to the start position by ascending upward under control

This exercise can also be performed carrying a dumbbell in each hand, or a barbell across the back or front of the shoulders

## 26a. - SB Front squat 1 leg

**Main muscles:** quadriceps, glutes, hamstrings, rectus abdominus, gastrocneius, soleus



- Stand on your toes facing a wall with feet comfortable distance apart and toes approx. 1 meter from the wall (depending on height)
- Place a stability ball against the wall and lean forward onto it with your abdomen resting on the ball
- The spine should be neutral throughout and in the start position the legs and torso should be aligned
- Descend down into the squat by flexing the hips and knees by the same amount at the same time
- As you descend the ball will roll up from your abdomen to your chest
- After reaching the maximum depth your strength, flexibility and good technique will allow you to achieve, return to the start position by ascending upward under control

Caution: Ensure this exercise is performed on a dry non-slip surface

## 27. SB Standing partner ball rotate (2 leg) (Russian Twist)

**Main muscles:** quadriceps, glutes, hamstrings, obliques, rectus abdominus, pectorals



- Stand in a firm, stable position with a neutral spine and feet comfortable distance apart
- Hold the ball with both hands out in front of the chest with the elbows slightly flexed
- Keep the arms in a fixed position with the ball aligned with the centre of the chest throughout
- With legs slightly flexed and braced, begin to rotate the spine in the transverse plane
- The partner should apply resistance to the side of the ball to slow but not stop the movement
- Once full range of motion has been achieved, repeat by turning and applying resistance to the opposite side

## 28. SB Standing partner ball rotate (1 leg)

**Main muscles:** quadriceps, glutes, adductors, hamstrings, obliques, rectus abdominus, pectorals

- Stand on 1 leg in a stable position with a neutral spine
- Hold the ball with both hands out in front of the chest with the elbows slightly flexed
- Keep the arms in a fixed position with the ball aligned with the centre of the chest throughout
- With the leg slightly flexed and braced, begin to rotate the spine in the transverse plane
- The partner should apply resistance to the side of the ball to slow but not stop the movement
- Once full range of motion has been achieved, repeat by turning and applying resistance to the opposite side

## 29. SB Chest press 2 arm simultaneous

**Main muscles:** pectorals, triceps, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with upper back resting on the ball, neutral spine, thighs in line with torso, and knees flexed at approx 90°
- Holding a bar or dumbbells with both arms extended above the chest, lower **both arms** under control by simultaneously flexing the elbows and horizontally extending the shoulders whilst retracting the shoulder girdle
- Ensure the abs are braced in order to maintain a neutral spine throughout and the exercise
- After lowering to a comfortable depth, return the weight up to the start position under control
- Keep the ball in the same position throughout

## 30. SB Chest press 2 arm alternate

**Main muscles:** pectorals, triceps, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with upper back resting on the ball, neutral spine, thighs in line with torso, and knees flexed at approx 90°
- Holding a dumbbell in each hand with both arms extended above the chest, lower **one arm** under control by simultaneously flexing the elbow and horizontally extending the shoulder whilst retracting the shoulder girdle
- Keep the opposite arm fixed in an extended position above the chest
- Ensure the abs are braced in order to maintain a neutral spine throughout and the exercise
- After lowering to a comfortable depth, return the weight up to the start position under control
- Change arms and repeat on other side
- Keep the ball in the same position throughout

## 31. SB Chest press 2 arm alternate with torso rotation

**Main muscles:** pectorals, triceps, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with upper back resting on the ball, neutral spine, thighs in line with torso, and knees flexed at approx 90°
- Holding a dumbbell in each hand with both arms extended above the chest, lower **one arm** under control by simultaneously flexing the elbow, horizontally extending the shoulder, retracting the shoulder girdle, and rotating the torso toward the side of the moving arm
- Keep the opposite arm fixed in an extended position above the chest
- Ensure the abs are engaged to generate rotation and prevent flexion or extension of the spine during the exercise
- After lowering to a comfortable depth, return the weight up to the start position under control
- Change arms and repeat on other side

## 32. SB Chest press 1 arm

**Main muscles:** pectorals, triceps, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with upper back resting on the ball, neutral spine, thighs in line with torso, and knees flexed at approx 90°
- Holding a dumbbell in one hand with that arm extended above the chest, lower the arm under control by simultaneously flexing the elbow and horizontally extending the shoulder whilst retracting the shoulder girdle
- Ensure the abs are braced in order to maintain a neutral spine throughout and the exercise
- After lowering to a comfortable depth, return the weight up to the start position under control
- Repeat on the same arm for the rest of the set or alternate between arms after each rep

### 33. SB Chest press 1 arm with torso rotation

**Main muscles:** pectorals, triceps, erector spinae, obliques, glutes, hamstrings



- Lay in the supine position with upper back resting on the ball, neutral spine, thighs in line with torso, and knees flexed at approx 90°
- Holding a dumbbell in one hand with that arm extended above the chest, lower the arm under control by simultaneously flexing the elbow, horizontally extending the shoulder, retracting the shoulder girdle, and rotating the torso toward the side of the moving arm
- Keep the opposite arm fixed in an extended position down by the side of the body but not in contact with it
- Ensure the abs are engaged to generate rotation and prevent flexion or extension of the spine during the exercise
- After lowering to a comfortable depth, return the weight up to the start position under control
- Repeat on the same arm for the rest of the set or alternate between arms after each rep

### 34. SB Prone Ball Pike

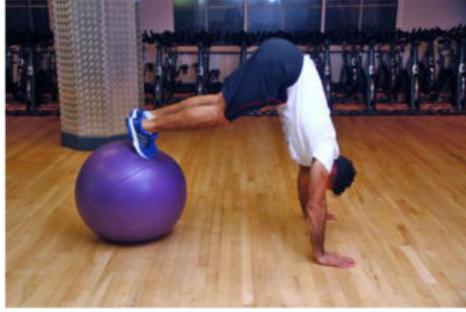
**Main muscles:** pectorals, deltoids, rectus abdominus, obliques, hip flexors, quadriceps



- In the prone position place both hands on the floor and the front of both ankles on the ball
- Starting from a position of good alignment with a neutral spine, pull the ball in by flexing the hips only, maintaining straight knees (this requires good hamstring flexibility)
- Ensure scapular does not wing, by pushing floor away
- Return to the start position and repeat

## 35. SB Pike with single leg hip extension

**Main muscles:** pectorals, deltoids, rectus abdominus, obliques, hip flexors, quadriceps, glutes, hamstrings



- In the prone position place both hands on the floor and the front of both ankles on the ball
- Starting from a position of good alignment with a neutral spine, pull the ball in by flexing the hips only, maintaining straight knees (this requires good hamstring flexibility)
- Keeping the ball, torso, and arms fixed, lift one straight leg up to a vertical position through hip extension only
- Ensure scapular does not wing
- Return to the start position and repeat

Caution: This exercise (all versions) can significantly increase blood pressure

## 36. SB Prone Ball Pike into Press Up (inverted shoulder press)

**Main muscles:** pectorals, triceps, deltoids, rectus abdominus, obliques, hip flexors, quadriceps, glutes, hamstrings



- In the prone position place both hands on the floor and the front of both ankles on the ball
- Starting from a position of good alignment with a neutral spine, pull the ball in by flexing the hips only, maintaining straight knees (this requires good hamstring flexibility)
- Keeping the ball still, lower the body by simultaneously flexing the elbows and adducting the shoulders under control
- Ensure scapular does not wing
- Return to the start position and repeat

Caution: This exercise can significantly increase blood pressure

# BOSU Exercises

## 1. Prone alternate side arm & leg superman

**Main muscles:** erector spinae, obliques, glutes, hamstrings, trapezius, deltoids



- Lay in the prone position with the abdominal region resting on the BOSU
- Both legs should be straight with toes resting on the floor
- Both arms should be straight and reaching out in front of the head with the hands resting on the floor
- Maintain a neutral spine throughout the exercise
- All movements originate from the hip and shoulder joints
- Lift one straight arm and the opposite leg up off the floor at the same time
- Hold in this position then return to the start position and repeat the exercise on the opposite arm and leg
- The intensity can be increased by applying resistance to the working arms and legs

## 2. Prone Push Up (hands on flat side of BOSU) 2 feet on floor

**Main muscles:** pectorals, triceps, rectus abdominus, obliques,



- In the prone position place both hands at the edges on the flat side of the BOSU
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the thighs.
- Feet far apart will increase stability therefore decrease intensity, feet together will decrease stability and so increase intensity
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control

## 2a. - Prone Push Up (hands on flat side of BOSU) 2 feet on step or bench

**Main muscles:** pectorals, triceps, rectus abdominus, obliques



- In the prone position place both hands on the BOSU at a comfortable distance apart
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout in line with the straight legs.
- Ensure throughout the exercise that the scapular does not wing
- The toes of both feet should be placed up on a bench/step/box to increase the intensity
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the BOSU throughout the exercise

## 2b. - Prone Push Up (hands on flat side of BOSU) 1 foot on floor, other straight leg in abduction

**Main muscles:** pectorals, triceps, glutes, hamstrings, obliques, rectus abdominus



- In the prone position place both hands at the edges on the flat side of the BOSU
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout
- Ensure throughout the exercise that the scapular does not wing
- Both legs should be straight, one in line with the body with toes on the floor (supporting leg), the other in abduction with toes slightly off the floor
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control

## 2c. - Prone Push Up (hands on flat side of BOSU) 1 foot on step or bench, other straight leg in abduction

**Main muscles:** pectorals, triceps, glutes, hamstrings, obliques, rectus abdominus



- In the prone position place both hands at the edges on the flat side of the BOSU
- With arms straight, brace the abdominal muscles to hold the spine in a neutral position throughout
- Ensure throughout the exercise that the scapular does not wing
- The toes of one foot (supporting leg) should be placed up on a bench/step/box to increase the intensity
- The other leg should be in abduction whilst remaining level with the supporting leg
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control
- Aim for little or no movement of the BOSU throughout the exercise

## 3. - Uneven Fixed Press Up (2 feet on floor)

**Main muscles:** pectorals, triceps, obliques, rectus abdominus



- In the prone position place one hand on the round side of the BOSU in the centre
- Place the palm of the other hand on the floor next to the BOSU (hands close = mainly triceps, further apart = mainly pectorals)
- Both feet (toes) on the floor (together = less stable, apart = more stable)
- Brace the abdominals to maintain a neutral spine throughout the exercise
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control

### 3a. - Uneven Fixed Press Up (1 foot on floor, other straight leg in abduction, contralateral or ipsilateral)

**Main muscles:** pectorals, triceps, glutes, hamstrings, obliques, rectus abdominus



- In the prone position place one hand on the round side of the BOSU in the centre
- Place the palm of the other hand on the floor next to the BOSU (hands close = mainly triceps, further apart = mainly pectorals)
- Both legs should be straight, one in line with the body with toes on the floor (supporting leg), the other in abduction with toes slightly off the floor
- Brace the abdominals to maintain a neutral spine throughout the exercise
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control

### 3b. - Uneven Fixed Press Up (1 foot on a step, other straight leg in abduction, contralateral or ipsilateral)

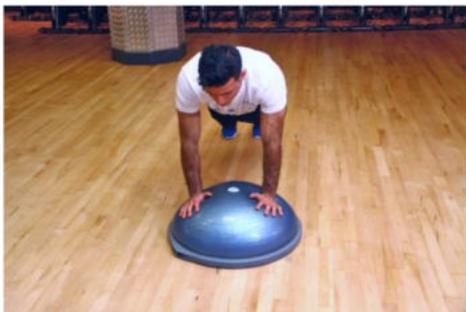
**Main muscles:** pectorals, triceps, glutes, hamstrings, obliques, rectus abdominus



- In the prone position place one hand on the round side of the BOSU in the centre
- Place the palm of the other hand on the floor next to the BOSU (hands close = mainly triceps, further apart = mainly pectorals)
- The toes of one foot (supporting leg) should be placed up on a bench/step/box to increase the intensity
- The other leg should be in abduction whilst remaining level with the supporting leg
- Brace the abdominals to maintain a neutral spine throughout the exercise
- With the body fixed in good posture lower down to the BOSU under control

## 4. - Uneven Travelling Press Up

**Main muscles:** pectorals, triceps, deltoids, obliques, rectus abdominus



- In the prone position place one hand on the round side of the BOSU in the centre
- Place the palm of the other hand on the floor next to the BOSU (hands close = mainly triceps, further apart = mainly pectorals)
- Both feet (toes) on the floor (together = less stable, apart = more stable)
- Brace the abdominals to maintain a neutral spine throughout the exercise
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control
- Now place the outside hand (from the floor) onto the centre of the ball, and then place the opposite hand (from the ball) onto the floor on the outside
- Repeat the press up in this new position and continue to change after each repetition
- Aim for little or no movement of the BOSU throughout the exercise

### 4a. - Uneven Travelling Press Up (1 foot on floor, other straight leg in abduction, contralateral or ipsilateral)

**Main muscles:** pectorals, triceps, glutes, hamstrings, obliques, rectus abdominus



- In the prone position place one hand on the round side of the BOSU in the centre
- Place the palm of the other hand on the floor next to the BOSU (hands close = mainly triceps, further apart = mainly pectorals)
- Both legs should be straight, one in line with the body with toes on the floor (supporting leg), the other in abduction with toes slightly off the floor
- Brace the abdominals to maintain a neutral spine throughout the exercise
- With the body fixed in good posture lower down to the BOSU under control
- After reaching the limit of good ROM, return to the start position under full control
- Now place the outside hand (from the floor) onto the centre of the ball, and then place the opposite hand (from the ball) onto the floor on the outside
- Repeat the press up in this new position and continue to change after each repetition
- The abducting leg can also be changed after each repetition or stay the same

## 5. - Transverse Twisting Plank

**Main muscles:** obliques, quadratus lumborum, rectus abdominus, pectorals, deltoids



- In the prone position with both feet on the floor, place one hand in the centre of the BOSU (round side up), and the other hand onto the opposite shoulder
- Move the hand from the shoulder out to the side whilst twisting out at the same time
- Stop when you are in a diagonal crucifix position, side on to the floor
- Return to the start under control and repeat on the same side or change to the other side
- Ensure the spine remains in a neutral position throughout

## 6. - Frontal Plane Squat Jumps

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, abductors, adductors



- Stand on the floor by the side of a BOSU with the round side up.
- Rapidly squat then jump sideways.
- Land on the BOSU with feet evenly spaced apart.
- As you land absorb the shock by descending into a squat.
- The exercise can be repeated without stopping jumping to and from the same side of the BOSU or to and from alternate sides

## 7. - Multi-Directional Squat Jumps

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, adductors, adductors, obliques



- Stand on the BOSU with the round side up.
- Rapidly squat then jump sideways, forward or backward onto the floor.
- As you land absorb the shock by descending into a squat.
- Land on the BOSU with feet evenly spaced apart
- Immediately rebound out of the squat, back to the floor but this time land in a different position from the starting one.
- Imagine the BOSU positioned in the centre of a clock face, examples of multidirectional jumping sequences are;

**BOSU to 12 o'clock to BOSU to 3 o'clock to BOSU to 6 o'clock to BOSU to 9 o'clock to BOSU to 12 o'clock to BOSU**

**Caution:** Ensure this exercise is performed on a dry non-slip surface

## 8. – Lunge forward onto BOSU

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, peroneals



- Stand approximately ½ - 1 meter behind a BOSU with the round side up.
- Step forward with one leg placing the front foot onto the centre of the BOSU.
- Continue the movement down into a full lunge with the rear knee stopping before the floor.
- From this position push back and up returning to the start position under control.
- Ensure the front knee stays in line with the hip and toes on the same side.
- Maintain a neutral spine in an upright position throughout the exercise

## 9. – Lunge back from BOSU

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, peroneals



- Stand with both feet in the centre of a BOSU, round side up
- Maintaining one foot on the BOSU, step back ½ - 1 meter behind the BOSU whilst descending.
- Continue the movement down into a full lunge with the rear knee stopping before the floor
- From this position push forward and up returning to the start position under control.
- Ensure the front knee stays in line with the hip and toes on the same side.
- Maintain a neutral spine in an upright position throughout the exercise

## 10. – Side Lunge to BOSU

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, peroneals, abductors, adductors



- Stand approximately ½ - 1 meter to the side of a BOSU with the round side up.
- Step sideways with one leg placing that foot onto the centre of the BOSU.
- Continue the movement down into a full lunge with the leading hip and knee flexing and the opposite leg straight.
- From this position push out and up returning to the start position under control.
- Ensure the front knee stays in line with the toes (turned out to 45°) on the same side.
- Maintain a neutral spine in an upright position throughout the exercise

## 11. – Side Lunge from BOSU

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, peroneals, abductors, adductors



- Stand with both feet in the centre of a BOSU, round side up
- Maintaining one foot on the BOSU, step out to the side  $\frac{1}{2}$  - 1 meter from the BOSU with the opposite leg whilst descending.
- Continue the movement down into a full lunge with the leading leg straight and the hip and knee of the BOSU leg flexing
- From this position push sideways and up returning to the start position under control.
- Ensure the BOSU knee stays in line with the toes (turned out to  $45^\circ$ ).
- Maintain a neutral spine in an upright position throughout the exercise.

## 12. – Front to Rear Lunges with 1 foot fixed on BOSU

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, peroneals



- Stand in a lunge position with the front foot on a BOSU (round side up), and the back foot  $\frac{1}{2}$  - 1 meter behind on the floor
- Maintaining one foot on the BOSU throughout, step forward with the back leg up and out of the lunge.
- Continue the movement forward, over the BOSU, and place the foot on the floor  $\frac{1}{2}$  - 1 meter in front of the BOSU
- Continue the movement down into a front lunge.
- From this position push back to return to the start position under control.
- Ensure the knees stay in line with the hips and toes on the same side throughout.

### 13. – Twist Squat on Flat BOSU (without then with free-weight or cable resistance)

**Main muscles:** quadriceps, hamstrings, glutes, gastrocnemius, soleus, adductors, adductors, obliques



- Stand on the BOSU with flat side up, feet evenly spaced apart.
- Maintaining a neutral spine throughout the exercise, flex the hips and knees to descend down into a squat.
- As you return back up, rotate the spine at the same time as you extend the hips and knees
- The exercise can be repeated on the same side or you can alternate the side you rotate to on each repetition.
- Resistance can also be added by holding an outstretched weight disc or by pulling up a cable (reverse wood chop)
- Ensure the knees stay in line with the toes on the lower movements

### 14. – Crunch

**Main muscles:** rectus abdominus, obliques



- Lay in the supine position with the lower back and top of the pelvis resting on the round side of the BOSU.
- Feet can be positioned on the floor with the knees and hips flexed or held up off the floor.
- Arm position varies according to the required intensity, arms by your side is easiest, arms outstretched above the head is hardest.
- Ensuring the head stays inline with the spine (avoid chin poking), flex the spine raising the torso up and towards the pelvis.

## 15. – V-Sit

**Main muscles:** rectus abdominus, obliques, iliacus, psoas major



- Lay in the supine position with the lower back and top of the pelvis resting on the round side of the BOSU.
- At the start knees should be extended and hips slightly flexed with feet held off the floor.
- Arm position varies according to the required intensity, arms by your side is easiest, arms outstretched above the head is hardest.
- Ensure the head stays inline with the spine throughout the exercise (avoid chin poking).
- Simultaneously flex the spine, hips and knees under control.
- Once you achieve 30° of spinal flexion, and approximately 90° of hip and knee flexion return to the start position under control and repeat the exercise.

## 16. – Isometric Prone Skydiver on BOSU with random resistance from partner

**Main muscles:** erector spinae, hamstrings, latissimus dorsi, glutes, posterior deltoid, obliques



- Lay in the prone position on the BOSU balancing on braced abdominals.
- Lift the arms and legs off the floor and hold still with a whole body isometric contraction.
- A partner then applies random resistance to the arms and legs.
- You should continue to breathe throughout the exercise, do not hold your breath.

This exercise is not recommended for people with high blood pressure due to the intense prolonged isometric contraction.

## 17. – BOSU Get Up Get Down

**Main muscles:** quadriceps, hamstrings, glutes, rectus abdominus, obliques, iliacus, psoas major



- Lay in the supine position with the lower back and top of the pelvis resting on the round side of the BOSU.
- Hips and knees should be flexed with feet flat on the floor.
- Arm position varies according to the required intensity, arms by your side is easiest, arms outstretched above the head is hardest.
- Rapidly (to gain momentum), flex the spine and hips transferring your weight from the BOSU onto your feet on the floor in front of the BOSU.
- From this lower squat position ascend up by extending the hips and knees into an upright position.
- Maintain a neutral spine during the squat phase.
- Return to the start position under control by descending into a squat, then once on the BOSU lowering down out of the sit up position.

## 18. – BOSU Burpee

**Main muscles:** pectorals, triceps, erector spinae, quadriceps, hamstrings, glutes



- Start in the prone position with both hands supporting on a BOSU, (round side up).
- Legs should be straight and in line with a neutral spine.
- Rapidly flex the hips and knees pulling both feet in and onto the BOSU.
- Then, left the hands off the BOSU as you squat upwards by extending the hips and knees.
- Maintain a neutral spine during the squat phase.
- Return to the start position by squatting down and placing both hands on the BOSU, then extending the legs out behind.
- Repeating the words **in, up, down and out** as you perform the exercise can help maintain the correct sequence.

This exercise is not recommended for people with lower back disorders or those with high or low blood pressure.

## 19. – Bar-Stewards

**Main muscles:** pectorals, triceps, erector spinae, quadriceps, hamstrings, glutes



1



2



3



4

- Start in the prone position with both hands apart on a BOSU, (round side up).
- Legs should be straight and in line with a neutral spine.
- Perform a full press up by lowering the straight body down to the BOSU under control.
- Push up returning to the start position, then rapidly flex the hips and knees pulling both feet in and onto the BOSU.
- Then, lift the hands off the BOSU as you squat upwards by extending the hips and knees.
- Return to the start position by squatting down and placing both hands on the BOSU, then extending the legs out behind.
- Repeating the words **press up, in, up, down and out** as you perform the exercise can help maintain the correct sequence.

This exercise is not recommended for people with lower back disorders or those with high or low blood pressure.

## 20. – Sit Up to Press Up

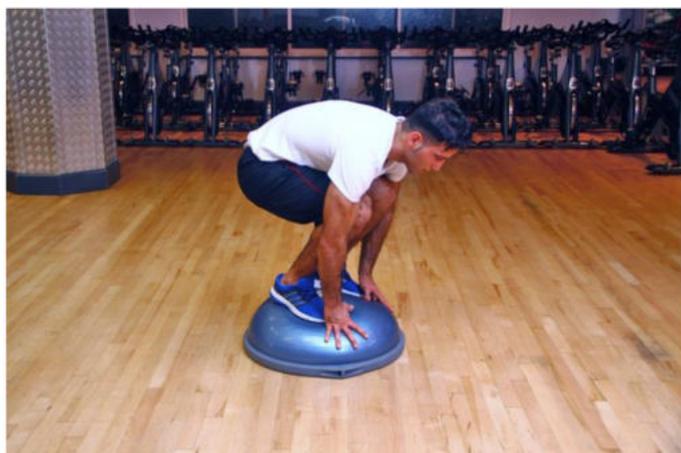
**Main muscles:** rectus abdominus, obliques, iliacus, quadriceps, hamstrings, glutes, psoas major, pectorals, triceps



1



2



3



4

- Lay in the supine position with the lower back and top of the pelvis resting on the round side of the BOSU.
- Hips and knees should be flexed with feet flat on the floor.
- Arm position varies according to the required intensity, arms by your side is easiest, arms outstretched above the head is hardest.
- Rapidly (to gain momentum), flex the spine and hips transferring your weight from the BOSU onto your feet on the floor in front of the BOSU.
- From this lower jump up rapidly extending the legs back and over the BOSU landing with both hands on the BOSU and both feet on the floor.
- In this position perform a full press up by lowering the straight body down to the BOSU under control.
- Return to the start position by rapidly pulling bent legs up and through the arms, landing with feet on the floor in front of the BOSU, sit and then lay back on the BOSU to finish.

# Medicine Ball

## 1. Reaching Twist Crunch



## 2. Crunch with Ball Push



## 3. Partner Sit Up Pass



## 4. Lying Extensions



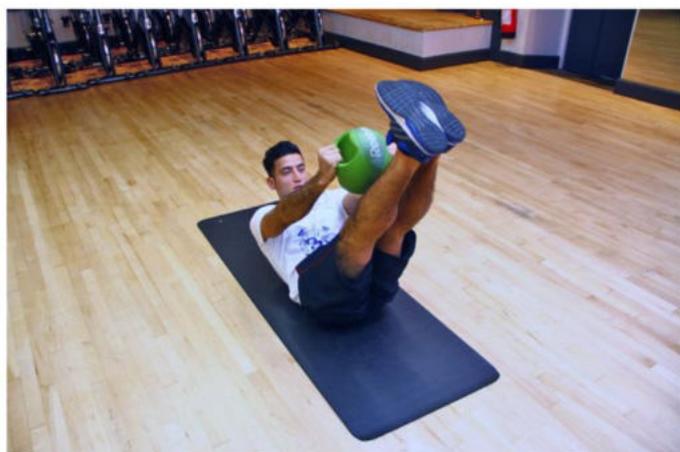
## 5. Lying Trunk Twist



## 6. Reverse Woodchop



## 7. V Sit and Rotate



## 8. Split Squat with Low to High Rotation



# Wobble Cushions

These small inflatable cushions offer the personal trainer another means of providing an unstable surface to increase the proprioceptive and core demands of an exercise or activity. In the same way as a stability or BOSU ball, they provide a convex surface that will move in unpredictable ways once downward pressure is exerted on it. Wobble cushions are strong enough to sit or stand on and offer a highly versatile and convenient training tool.

The use of wobble cushions can range from simply encouraging clients to sit on them during their working day in order to provide some stimulation of the core musculature to advanced gym-based exercises. In reality, the applications of a wobble cushion are almost endless, simply think of an exercise and place a wobble cushion under the hands, feet or buttocks!

## Example exercises



*Press up*



*Staggered press*



*T- press*



*Single leg*



*Lunge*

