Pilates Union UK

The Instruction Series

SMALL BALL WORKOUT

Written by Emma Newham

A manual for Pilates instructors, fitness professionals and enthusiasts alike

Emma Newham's

Small Ball Workout

By Emma Newham

Published in the United Kingdom by

Pilates Union UK
Station Road
East Boldon
Tyne & Wear
NE36 0LE
www.pilatesunion.co.uk

ISBN – 978-0-9565285-1-3

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Printed in the UK by Jasprint

A NOTE ON THE EXERCISE INSTRUCTIONS

Repetitions

Unless otherwise stated, assume that for the majority of exercises, a suitable number of repetitions to perform would be around ten. For beginners, it is more likely to be around six repetitions, or whatever the body can handle, so long as technique is not compromised. For the advanced student, two sets of ten repetitions may be appropriate, provided ability allows on certain exercises.

Target muscles

This is a broad overview of the prime muscles involved in any particular exercise. It is not an exhaustive list by any means. Often, muscles are grouped together to make the list more compact. For example, scapula stabilizers often appear under this category. When broken down, this includes the lower trapezius and serratus anterior muscles. Below is a short list of grouped muscles that are broken down into their component parts for future reference.

Contra-Indications

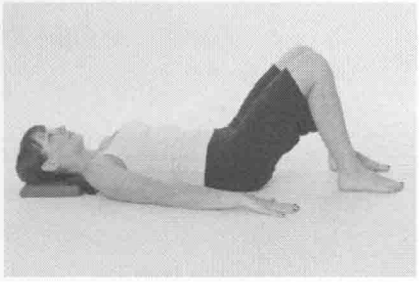
Some exercises may not be appropriate for certain medical conditions or physical problems, since it may aggravate or exacerbate pre-existing conditions. At the end of each exercise is a list (not exhaustive) of contra-indications to that particular exercise. This is a general guideline only, which may or may not apply to each individual student. For example, it may state that the exercise is unsuitable for certain disc-related back problems. It is up to the individual instructor to help the student ascertain whether that broad guideline actually applies to them. Suitability for the exercise would depend upon several factors. Age, ability, severity of the disc problem, any other problems (related or not) as well as the level of core strength, would all be factors to take into consideration when attempting a contra-indicated exercise. A student who is young and active, with a reasonable amount of core strength may well be able to attempt the exercise without any problems or side effects. Conversely, an elderly student with a severe back problem, who has relatively poor core strength, may find that the exercise makes their condition worse. That is not to say that they will never be able to perform a certain exercise that initially was too difficult or painful. It is often the case that when a certain level of core strength has been built up over a period of time from regular Pilates practice, the same exercise may be attempted further down the line without any adverse effects.

There will be some exercises that will always remain contra-indicated no matter what factors are taken into consideration. Students with osteoporosis in the spine should never attempt forward flexion since it will always exacerbate the condition, regardless of core strength. However, mild osteoporosis in any other bones and joints would not affect forward flexion of the spine. It is likely that if osteoporosis is present in the bones, then it is more than likely to be present in the spine also and any exercise involving forward bending would therefore be unsuitable.

There will be certain exercises that are completely unsuitable for pregnant women. These exercises are not listed here, since this is not a manual for pregnancy. Pregnant ladies should seek the advice of a medical practitioner or professional exercise instructor before attempting any exercise. There are many pregnancy related exercise manuals and DVD's available but the advice given in this instructional manual does not cater for the needs of pregnant women and is therefore unsuitable.

PILATES BASICS

Relaxation Position



Aim

To relax the body and mind and release tension

Starting Position

Lie supine with the knees bent and the feet flat on the floor. The middle of the hip should be in alignment with the middle of the knee, down to the second toe of the foot. The feet face forwards. The arms rest down by the sides of the body with the palms facing the floor. A small head cushion may be placed underneath the skull in order to place the cervical spine in its natural position.

Action

Become aware of the points of contact between the body and the floor. The back of the skull and the floor, the shoulder blades, elbows, hands, pelvis, buttocks and feet. Try to allow the body to feel heavy, almost as if the floor is made of sand and the body is sinking into it.

Now work your way through the body from head to toe, relaxing each body part. Try to visualize each body part as you work your way down. Start by releasing tension in the facial muscles; chin; jaw and throat. Then allow the neck and shoulders to relax. Feel the collarbones opening and widening. The scapula and spine release. Allow the abdomen, hips, buttocks and pelvis to feel heavy and grounded. Finally dissolve any tension in the legs, feet and toes.

Once you have worked your way through the body, observe the natural breathing rhythm. On the inhalation the abdomen rises and on the exhalation the abdomen falls. Allow the mind and body to release. Ask yourself this question. "How easy or how difficult is it for you to relax?" Does it come naturally with minimal effort? Or, do you fight the relaxation? Is your mind busy and does your body want to fidget? Can you let go easily and just "be"? Observe without judgment. The more you practice relaxation, the easier relaxation comes to you.

Neutral Pelvis

Aim

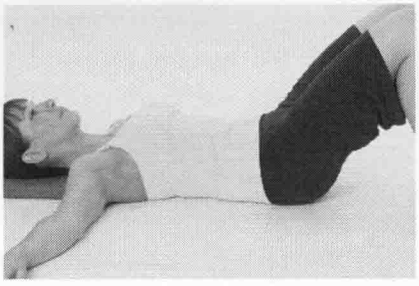
To find the natural curve of the lumbar spine so that we can learn correct placement of the spine for future exercises

Starting Position

Lie supine in the relaxation position with the knees bent and the feet flat on the floor, hip distance apart. A small head cushion may be placed underneath the skull in order to place the cervical spine in its natural position.

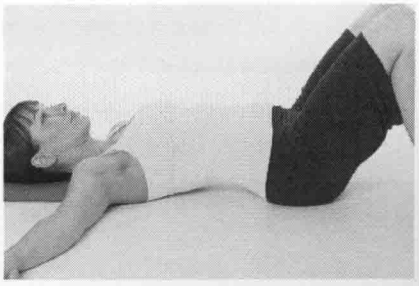
Action

North Position of the Pelvis



Inhale to prepare. As you exhale, gently tilt the pelvis backwards into a posterior tilt. The pubic bone will point up to the ceiling. The pubic bone will be higher than the hipbones resulting in the lumbar spine being lengthened towards flexion. The lower back will press down into the floor.

South Position of the Pelvis



Inhale to prepare. As you exhale, gently tilt the pelvis forwards into an anterior tilt. The pubic bone will point down to the floor. The hipbones will now be higher than the pubic bone, resulting in the lumbar spine being in an extended position. The lower back will arch away from the floor.

Action

Tilt the pelvis gently north, then centre and then south and return to the centre a few times and come to rest half way between the two points. The true definition of a neutral pelvis is when the anterior superior iliac spine (ASIS) is level with the pubic symphysis (i.e. if you got a spirit level between each hip bone and the pubic bone, all bones would be level at the same plane and height). Ideally this neutral pelvis should feel natural but because of different postural types, this may not be the case. A neutral position should not be forced if it feels uncomfortable in any way. If it does not happen naturally initially, then it is something to work towards as the body gets stronger.

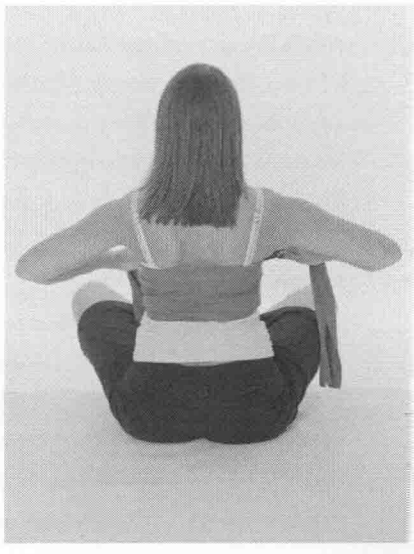
Watchpoints

- Try not to grip in the hip flexors and glutes.
- Maintain good alignment with the hip, knee and second toe.
- Ensure that the back of the neck stays long and the shoulders stay away from the ears.

Contra-Indications

Certain back problems may feel uncomfortable with the flexion and extension of the lumbar spine. In this case, keep the range of movement to a minimum or avoid the position that causes discomfort.

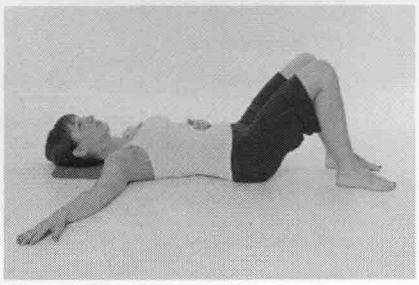
Breathing



Joseph Pilates stated, "Even if you follow no other instructions, learn to breathe correctly". He likened the lungs to bellows, using them to pump air fully in and out of the body. Pilates believed in enriching the blood with oxygen so that it could awaken all the cells in the body and eliminate stale air and the wastes related to fatigue. He believed that forced exhalation was the key to a full inhalation.
Every movement in Pilates has a specific breath pattern. Together with the timing of the breath, it enhances effective muscle use. Generally speaking, we tend to exhale on the effort (or exertion) as this helps prevent the body from creating tension. Effective breathing can help to lengthen the abdomen, broaden the upper back and helps train the correct muscle recruitment for everyday core strength.
The lungs need to open to the front, back and sides. If we can successfully do this, then our oxygen uptake also increases and therefore our lung capacity. Unfortunately, most of us only open the front lungs, using the upper lobes, since sedentary lives lead to shallow breathing. Many people often hold their breath during exercise, particularly when new to Pilates, due to the concentrated effort of co-coordinating a difficult task. Muscles can tense up when we hold our breath, which can exacerbate poor posture.
Proper breathing will assist in flowing movements and it is an integral part of the technique and one of the key principles. Pilates encourages deep breathing, using the lower and upper lobes of the lungs. Benefits of correct breathing allow the blood to be enriched with oxygen, which nourishes all the cells in our body, whilst expelling stale air. Our circulation increases and we feel rejuvenated. More oxygen in the muscles helps them to relax and therefore reduces tension. It also assists in concentration and control whilst exercising. We use the breath to initiate and support movement.
Thoracic or lateral breathing allows us to keep the abdominal muscles pulled in whilst inhaling and exhaling. This protects the spine whilst exercising. The aim is to keep the abdominals contracted whilst we breathe laterally, so that we have maximum support during movement. The focus is to breathe into the lower lobes of the lungs, all the way down the spine and into the pelvic basin, trying to expand the breath into the sides and back of the ribs. There is more efficient gaseous exchange in the lower lobes. Exhaling deeply encourages the engagement of the deep core muscles. The combination of correct breathing and stabilization needs to occur before movement for safe and effective technique.

To practice thoracic breathing, you may use a stretch band wrapped around the mid back. As you inhale, allow the ribs to expand and therefore stretch the band but avoid lifting the breastbone too high. On the exhalation, the abdomen should hollow and the pelvic floor should be engaged, lending to lumbar and pelvic stability. The goal is to keep these muscles engaged on the inhalation and the exhalation to a low level of contraction (around 30%). As you practice lateral breathing, you will find that you are able to perform Pilates exercises with greater ease. Whilst lateral breathing is the technique to use when you want to keep your abdominals engaged during exercise, we do not want to walk around with our abdominals contracted all of the time. Diaphragmatic breathing, with a natural extension of the belly on an inhalation, is the healthiest way to breathe regularly.

Pelvic Stability



The combination of the transversus abdominis, a deep back muscle known as the multifidus and also the pelvic floor muscles make up our core. The correct engagement of these core muscles will hold our pelvis in the safe neutral position whilst we are performing our exercises. This helps to prevent any tilting or arching of the lumbar spine, causing potential stress to the lower back. We call this pelvic stability.

Transversus Abdominis

We shall learn how to engage the transversus abdominus in 4 different positions. Remember we only need to recruit this muscle by about 30%. The reasons that we recruit at a low level is that we need to try to isolate these muscles in order to prevent other stronger muscles helping out and doing the job of the core. Also, the core muscles should be working for the whole of our Pilates class and if they are engaged too much then they will fatigue very quickly. We need them for endurance so a low level of recruitment will make them last longer. "Less is more" – the less you contract, the more you will be able to isolate. The harder you contract, the less you will be able to isolate.

Position One – Relaxation Position

Starting Position

Lie supine in the relaxation position with the knees bent and the feet hip distance apart. A small head cushion may be placed underneath the skull in order to place the cervical spine in its natural position. Find the neutral position of the pelvis. You may like to slide the fingertips of one hand underneath the natural lumbar curve in order to check that the pelvis remains in a neutral position. Ensure that the body does not move an inch as you slide the fingertips under. Check that there is an even pressure on the fingers throughout the exercise (i.e. no decrease in pressure if the pelvis tilts south and no increase in pressure if the pelvis tilts north). You may place the opposite hand on top of the belly.

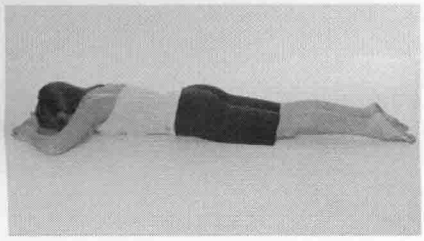
Action

Inhale to prepare. Exhale and gently draw in the navel back down towards the spine. Try to achieve around 30% contraction. If you are unsure what 30% feels like then contact the navel as hard as you can (i.e. 100%). Then release the contraction by half (i.e. 50%). Then release by half again and that will be around 25% contraction.

Watchpoints

- Watch out for any tension in the body, particularly around the neck and shoulders
- Keep the length between ears and shoulders and the back of the neck long
- Ensure that there is not change in pressure on the hand that is under the pelvis as you engage the transversus abdominus
- Try not to grip around the hip flexors, buttocks or legs

Position Two – Lying Prone



Starting Position

Lie face down on the floor with the legs together. The elbows are bent and the hands rest under the forehead, palms facing down.

Action

As you inhale, imagine the abdomen and waistline are expanding, almost like a balloon filling with air. Exhale and pull the navel in back towards the spine against gravity. Imagine you have a precious egg underneath the abdomen and you are gently taking the pressure off it. You could almost slide a piece of paper under the belly.

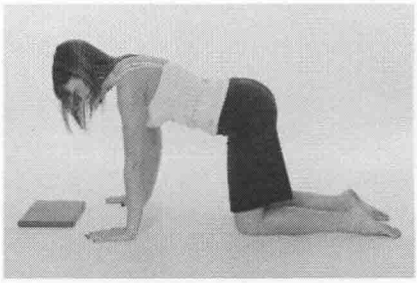
Watchpoints

- As you pull in the navel ensure that the buttocks do not engage or the pelvis move
- Maintain the distance between ears and shoulders

Contra-Indications

If lying prone feels uncomfortable initially for certain back problems, then place a small cushion underneath the hipbones.

Position Three – Kneeling on all fours



Starting Position

Come to an all fours position with the knees bent directly under the hips and place the hands on the floor directly under the shoulders. The elbows are soft and the fingers are pointing forwards. Ensure that there is equal weight between the hands and feet and between right and left sides of the body by gently rocking the body forward and back and from side to side a little. Allow the body weight to come to rest between all four limbs equally. Keep a good length between the ears and shoulders. The back of the neck should follow the natural cervical curves.

Action

Find the neutral pelvis by tilting the pelvis north and south and coming to rest half way in between. Inhale to prepare. As you exhale, gently pull in the navel back towards the spine against gravity. Imagine there is a scalding hot cup of tea balancing on the pelvis and lumbar spine so that as the navel is pulled in, the tea does not spill.

Watchpoints

- As the navel is pulled in, ensure that the back does not arch
- Maintain the gap between the ears and the shoulders
- Do not allow the shoulder blades to collapse together. Pull the shoulder blades apart on the ribcage using the serratus anterior muscle.
- There is a tendency for the head to start to drop downwards. Ensure that the back of the neck stays long with the back of the skull pushing up towards the ceiling.
- Ensure that the elbows do not lock out as the joint should stay soft

Contra-Indications

This position places extra stress on the wrist and knee joints and may be unsuitable for clients with problems in these joints.

Pelvic Floor

Most people have a vague idea of where the pelvic floor muscles are located and what they do but they may not be aware of all of the different openings from front to back. These are the muscles that stop us from "going to the toilet". Women have three openings and men have two. You will be shown how to isolate each opening of the pelvic floor separately in order to be familiar with each section. Then, when each component part has been felt, you can engage the entire area as one whole.

Together with the transversus abdominus muscle, the pelvic floor forms what we refer to as the "core", so they are very important.

When we are learning to isolate each opening, the amount of contraction is very small indeed. This is because the openings are very close together and if you engage one opening too much, the other openings will also contract.

It is impossible to tell if somebody is performing pelvic floor correctly, since no movement in the body can be detected. However, you can tell if somebody is doing it incorrectly, since external movement can be seen. Common mistakes include gripping in the glutes and hip flexors or tilting the pelvis or tensing the legs.

It is not always obvious when you engage the contraction, whether you have managed to isolate a particular opening or not. It is more obvious as the contraction is released. You may think to yourself "Ah, I felt my buttocks relax there". In which case, the glutes have engaged as well as the pelvic floor but you may not have realised that when you contracted the muscles. So, it is easier to tell when you let go of the contraction, since you will sense other parts also release. If this is the case, then remember, "Less is more". The less you contract, the more you will be able to isolate. So next time, contract a little less. These kegel exercises are best done with the eyes closed. With the eyes open, the brain tends to take in visual stimulus from around the room. When the eyes are closed, the brain is free to concentrate on the internal environment and becomes more sensitive to different sensations within the body (i.e. you can "feel"more).

The relaxation position is the preferred position in which to practice pelvic floor contractions although it may be done in any position such as side lying, sitting upright, standing or on all fours. The relaxation position has been chosen since it is a comfortable position within which to work as the body is relaxed and the mind therefore free to concentrate.

Pelvic floor isolation - Starting Position

Lie supine in the relaxation position with the knees bent and the feet flat on the floor, hip distance apart. A small head cushion may be placed underneath the skull in order to place the cervical spine in its natural position. You may like to slide the fingertips of one hand underneath the natural lumbar curve in order to check that the pelvis remains in a neutral position.

The back passage opening – The sphincter muscle

Action

Inhale to prepare. As you exhale, gently and slowly start to contract your back passage (your bottom hole) by drawing it inwards and upwards. This is your sphincter muscle and the sensation you want to achieve is that you are stopping yourself from passing wind. It is very tempting to squeeze the cheeks of the bottom here so be aware. Hold the contraction for around 5 seconds, continuing to exhale as you hold the contraction. Then inhale to release the contraction and see if you are able to tell if you managed to isolate the sphincter muscle.

The front passage opening –

Action

Inhale to prepare. As you exhale, gently and slowly start to contract the front passage (this is the muscle that you pee out of) by drawing it inwards and upwards. The sensation you need to achieve here is that you are stopping or lessening the flow of urine mid flow. Try not to grip around the hip flexors or legs here and ensure that the pelvis does not tilt. Hold the contraction for 5 seconds whilst exhaling and inhale to release and see if you were able to isolate again.

The middle passage – The vagina (women only!!)

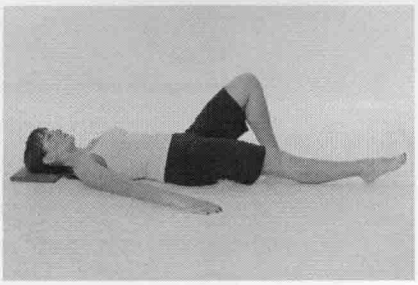
Action

Inhale to prepare. As you exhale slowly and gently contract the walls of the vagina by drawing the muscle inwards and upwards. Imagine an elevator in your mind. Visualise the elevator doors closing. The walls of the vagina have to come together in a similar way, almost like drawing a pair of curtains together. You may also like to imagine a drawstring bag or purse. When the string is pulled, the gap tightens together. Then the walls of the vagina need to lift upwards to the first floor (towards the navel) and then continue lifting up to the second floor (towards the ribs). So the action is to draw the curtains first and then lift up to the various floors after. Hold the contraction for 5 seconds whilst exhaling and inhale to release and see if you were able to isolate again.

Men only!!

In addition to the front and back passage, it may be helpful to feel like you are lifting up "the family jewels".

Sliding the leg away



Aim

Now that we have learned how to engage the key core muscles, we will test the theory of pelvic stability. Sliding the leg away without the recruitment of the core abdominals will result in the pelvis tilting south. The weight of the leg acts as a lever, pulling the pelvis into an anterior tilt. The activation of the core abdominals will ensure that the pelvis stays in a safe neutral position against the resistance of the leg.

Starting Position

Lie supine in the relaxation position with the knees bent and the feet flat on the floor, hip distance apart. A small head cushion may be placed underneath the skull in order to place the cervical spine in its natural position. You may like to slide the fingertips of one hand underneath the natural lumbar curve in order to check that the pelvis remains in a neutral position.

Action

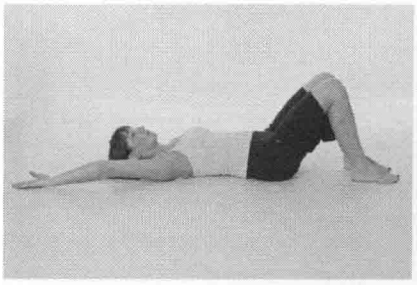
Inhale to prepare. As you exhale engage the pelvic floor openings first, followed by the transversus abdominus. It is almost like pulling up a zip on your jeans. Start low with the pelvic floor and work your way up to the transversus. Once these core muscles are correctly engaged, continue exhaling and gently slide one leg along the floor, away from the body until it is fully straight. Inhale, continuing to keep the abdominals engaged and gently use the core muscles to bend the knee and draw the leg back in towards the body.

The pelvis should not have moved if the core muscles have been recruited correctly.

Watchpoints

- You may notice that, as the leg slides away, it weighs more as it travels further. The significance of this is that you will need to engage the core a little more against the increasing resistance of the leg.
- Ensure that the heel remains in contact with the floor the whole time. It is only the toes that lose contact with the floor.
- Only push the leg as far as a neutral pelvis allows
- Once you have finished the exercise, relax the body. Notice if there is any change in the pelvis as you relax. Does it fall into its natural position? If so, then there must have been some movement north or south during the course of the exercise. The pelvis should not move as you relax, as it should have been held in the natural position all along.
- Keep the back of the neck long and the shoulders away from the ears. The collar bones should be wide.

Ribcage closure



We have seen how to stabilize the lumbar spine and pelvis in a neutral position, using the combination of transversus abdominus and pelvic floor. This is essential when there is a leg movement, which can potentially pull on the lower back. However, when there is an arm movement involved, it is a different story. As the arm rises above the head, it can potentially pull on the ribs, making them flare outwards. Since the ribs are attached to the thoracic spine, this arm movement can potentially pull the upper back out of the neutral position. We therefore need to engage the oblique abdominal muscles to draw down the ribcage to stop it from flaring.

Sliding the arm away

Aim

To learn how to draw down the ribs using the oblique abdominals when moving an arm away (to prevent the ribcage from flaring thereby allowing the back to arch).

Starting Position

Lie supine on the floor in the relaxation position with knees bent and feet are hip width apart. Place the right hand flat against the left rib whilst the left arm is down by the side of the body. Initially just raise the left arm up in the air and back behind the head without engaging the abdominals. Feel just how much the ribcage actually moves as this happens. Some peoples ribs move a little whilst others move a lot. Leave the arm behind the head with the ribs flared. Take a breath in and then have a very loud, deep and prolonged "cough". Feel what happens to the ribs as you cough! They literally close down and lock. Every time you cough, sneeze, laugh and even vomit, the ribcage closes. You do not think to yourself "I am going to cough so I had better lock my ribs". It is an automatic, involuntary, reflex reaction. We now need to learn to draw down the ribs under conscious, voluntary control since when the ribs are flared, the spine is vulnerable.

Action

Inhale to prepare. Exhale to engage the oblique abdominals to draw down the ribcage and raise the right arm upwards to the ceiling and back overhead as far as flexibility allows, without forcing the arm back. Exhale to raise the arm back to the start.

Target Muscles

Core abdominals, pectorals, anterior deltoid, scapula stabilisers

Watchpoints

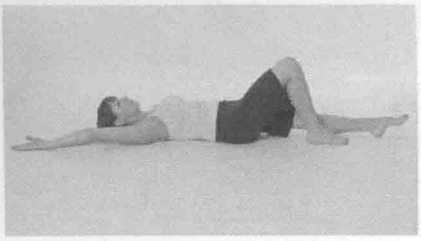
- Ensure the back of the neck stays long and the shoulders stay away from the ears
- Ensure good oblique engagement to avoid the ribs flaring when the arm goes back
- Do not force the arm backwards, stay within a good range of movement
- Ensure good alignment of the shoulder, elbow and wrist to avoid the tendency to bend the elbow or flick the wrist in order to get the backward arm closer to the floor

Neutral Spine

So far, you have learned that the combination of the transversus abdominus and pelvic floor muscles stabilise the lumbar spine and pelvis into a neutral position. This is important when there is a leg movement involved, which can potentially pull on the lower back. In addition, the oblique muscles prevent the ribcage from flaring out, thereby pulling the upper back out of a neutral position, particularly when there is an arm movement involved. This next exercise involves sliding the leg and opposite arm away from the body. Therefore you will need to engage all three areas in order to stabilise the entire spine (not just the pelvis or upper back on their own) into a neutral position. The three areas should be engaged in the following order; pelvic floor, transversus abdominus and obiques.

Here, you will have the weight of two limbs potentially pulling the spine out of a neutral position. However, t is not necessarily the weight of the limbs that will make the back arch – it is the brain instead! When learning a new skill, the brain tends to focus on one thing at a time. Up until now, it has only had one limb to contend with and it was therefore easier to move a single limb whilst holding onto the core muscles. Now the brain has two limbs to think about, so the element of co-ordination has entered into the equation. The brain now has the breathing, the core engagement and the co-ordination of opposite limbs to negotiate. Initially, it is unlikely that all these elements will be correctly activated at once. For example, you may have perfect breathing and perfect co-ordination but the pelvic floor may be relaxed. If any part of the core abdominals is not engaged, then you are not practicing safe and effective technique and not doing Pilates correctly. Don't worry initially if your co-ordination is poor or if the breathing is not quite right. It is more important to have the core engaged correctly over the co-ordination or breathing since the back is vulnerable to stress if these muscles are not working properly. Get the core right first and then the breathing and co-ordination will follow.

Starfish



To learn how to maintain a neutral spine, whilst moving two limbs away from the body

Starting Position

Lie supine in the relaxation position with the knees bent and the feet flat on the floor, hip distance apart. A small head cushion may be placed underneath the skull in order to place the cervical spine in its natural position. The arms are down by the sides of the body.

Action

Inhale to prepare. Exhale engage the pelvic floor openings first, followed by the transversus abdominus and finally the obliques. It is almost like pulling up a zip on your jeans. Start low with the pelvic floor and work your way up to the transverses, then draw down the ribcage. Once these core muscles are correctly engaged, continue exhaling and gently slide one leg along the floor, away from the body until it is straight. Simultaneously raise the opposite arm upwards to the ceiling and overhead as far as flexibility allows, without forcing the arm back. Inhale, continuing to keep the abdominals engaged and gently use the core muscles to bend the knee and draw the leg and arm back in towards the body.

Watchpoints

Only push the arm and leg as far as a neutral spine allows

The collar bones should be wide, the neck long and the shoulders away from the ears

Do not force the arm back, stay within a good range of movement so as not to compromise technique

Ensure that the shoulder, elbow and wrist stay in alignment (don't bend the elbow or flick the wrist)

Opposition

This is the principle of lengthening whilst strengthening. Think of energy lines in the body and try to push the limbs in opposing directions along these lines, whilst maintaining a strong centre. In order to experience this, try the following exercise firstly without opposition and then using opposition.

Lie on your side with the arm outstretched and the head resting on the shoulder. The underneath leg is bent forwards and the top leg is outstretched straight along the floor in alignment with the spine. Relax the body and do not stretch the leg. Perform the exercise in a lazy way in order to feel the difference between the two methods. Just raise the top leg up off the floor a few inches until the foot is just above hip height. Ask yourself two questions. "Where do you feel the muscle contraction?' and "How intense is the workload?". Give it a mark out of 10 for effort (1 being minimal, easy effort and 10 being hard, maximal effort). The answer to the first question should be; outer thigh. The workload is usually fairly low, generally below 5 out of 10 depending upon ability. Now try the same exercise using opposition.

Lie on your side with the arm outstretched and the head resting on the shoulder. Walk the fingers of this hand along the floor so that the arm is really lengthening. Feel energy coming out of the crown of the head, almost like the head is being pulled by a piece of string attached to it, so that it too lengthens along the arm. Think of the 3 body spaces. The gap between the ear and shoulder is wide. Also the gap between the last rib and the iliac crest (i.e. the waist) is long. Finally, make space in the hip joint (i.e. lengthen the femur out of the hip socket). The top arm is bent in front of the body and the hand is pressing downwards into the floor whilst the elbow is reaching upwards to the ceiling in opposition.

The underneath leg is bent forwards and the top leg is outstretched straight along the floor in alignment with the spine. Lengthen the toes of the top leg along the floor to achieve a long leg. Pull up the knee-cap so that the thighs are firm. The whole body from the fingers to the toes should now be long. Imagine that your body is on an old fashioned rack, being pulled apart in two different directions. The head and underneath arm are lengthening northwards, whilst the waist and top leg are lengthening southwards. Watch you don't buckle in the middle!! A strong centre is needed to prevent the spine from arching. Make good use of the full powerhouse here in order to keep a neutral spine whilst lengthening.

Raise the leg as before but don't just lift and lower the leg, keep lengthening it the whole time.

Now ask yourself the same two questions. The answer to question one should still be "outer thigh" but in addition, the whole body is involved. Before, the rest of the body may have been relaxed and so the effort was just felt in one area. With opposition, the outer thigh is the primary muscle working but the whole body is lengthening and working as well in order to maintain the length. The intensity should therefore be well above a 5 out of 10 now. See how much effort lengthening the body involves? It takes a lot of energy to work in this way. The results, however, speak for themselves. It is the length rather than any height in the leg that makes this exercise (or any exercise for that matter) much harder. This sets Pilates apart from a normal body conditioning class. It is "how" you do it. Quality of movement over quantity, or number of repetitions. Try the Star exercise where all four limbs are stretched out. Here, you have 4 energy lines pulling in 4 opposing directions. The right arm is reaching forwards to the right hand corner of the room whilst the left arm is reaching forwards to the left hand corner of the

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