



'Helping You Fulfill Your Body's Potential'

## **Modified Pilates During Pregnancy**

Modified Pilates' exercise is ideal during pregnancy because, unlike other recognised forms of fitness, it targets the deep postural muscles building strength from the inside out, a vital aspect considering the noticeable changes that occur during pregnancy.

**Improve posture, spine and joint alignment, stability, mobility, and strength**  
During pregnancy, posture changes significantly affecting all areas of the body.

The most common reason for issues affecting the thoracic spine is poor posture and not moving around enough. The thoracic spine should be highly mobile, but we lose mobility by staying in sedentary positions for a long time especially if your arms are stretched forward such as the position when working on a laptop or computer. This can be exacerbated during pregnancy as the breasts enlarge. When the thoracic spine becomes stiff and immobile the muscles and soft tissues often become inflamed. The joints become compressed, and discs harden. Modified Pilates' movements include thoracic extension and rotation to improve thoracic mobility and help the discs to imbibe fluid and improve their state.

If the thoracic spine is affected, your head position will change and will be held in a forward position. This creates tension and headaches. Modified Pilates' movements include stretches for the back of the neck which, in turn, strengthens the front of the neck and improves head alignment.

Modified Pilates' exercise focuses on strengthening shoulders, arms, and wrists and provides ideal preparation for after your baby is born when strong arms and shoulders will help when holding your baby, carrying your baby especially if using a car seat, and getting a buggy in and out of a car. Arm actions keeping wrists straight and hands flat will address muscle imbalance that causes wrists to become weak and may even reduce the likelihood of carpal tunnel syndrome.

The most significant change in posture during pregnancy affects the lumbar spine. As the foetus grows inside the uterus causing the abdominal muscles to weaken, the pelvis tilts forwards and the lumbar curve increases causing the low back muscles to tighten which often leads to back ache. Modified Pilates focuses on pelvic alignment and pelvic mobility. Keeping the pelvis mobile is essential and backwards pelvic tilting will aid abdominal strength and will lengthen tight back muscles. This can reduce the effect of the change in the lumbar curve and help to maintain better posture so that posture post-pregnancy can return to its former state, if not better. Pelvic tilting is performed in many different positions, sitting, lying down face up, or kneeling on hands and knees and the position may have to be modified as the pregnancy progresses.

Increased weight gain may affect the knees, and/or hips and ankles. Principles of Pilates' exercise, such as precision, means that leg movements are performed ensuring correct tracking of knee and hip joint. Hip exercises on the reformer provide the best stretches to ensure hips remain healthy and mobile. Ankle mobility is incorporated into mat movements and the foot work section on the reformer ensures feet and ankles remain mobile and healthy.

## **More efficient breathing and blood circulation**

The diaphragm is the biggest and most important muscle when it comes to breathing. During pregnancy, it moves upwards to accommodate the growing foetus which limits its downward movement making it more difficult to fill your lungs with air. To compensate for the lack of downward movement of the diaphragm, muscles in the top part of the chest are engaged instead and sometimes even the neck and shoulders become involved. Overuse of the upper chest muscles leads to an imbalance in normal breathing mechanics and can create shortness of breath. Impaired breathing leads to a lack of oxygen in the blood circulating around the body known as hypoxia which contributes towards dizziness and even confusion. Improved blood circulation can also reduce the likelihood of swollen legs and ankles, leg cramps, varicose veins and/or haemorrhoids. Modified Pilates includes a specific breathing technique and different patterns of breathing making you more aware of your personal breathing pattern and promotes more efficient breathing.

## **Better balance and body awareness**

Centre of gravity changes as posture changes which can affect balance. Modified Pilates' exercise includes exercises to challenge balance but is also mindful which can also improve body awareness as you learn and remember the various exercise movements and how to perform them to your best ability.

## **Stronger Pelvic Floor Muscles**

Modified Pilates' exercise will strengthen the pelvic floor muscles. Strong pelvic floor muscles will contract strongly and quickly which may aid childbirth. Weak pelvic floor muscles that are overstretched may not return to normal length afterwards, increasing the likelihood of pro-lapse and continence issues later. Activating pelvic floor muscles whilst performing Pilates exercises during pregnancy should be encouraged as an alternative to activating the transversus abdominis (TA) muscle. This is especially helpful if the linea alba ligament does separate as the TA muscle will be inhibited until the ligament repairs itself. See below for issues that may arise during pregnancy affecting the linea alba ligament.

## **Less disruption to sleep patterns**

Modified Pilates' exercise and breathing techniques can improve poor sleep patterns resulting in increased energy levels and aid relaxation. This can all speed up postnatal recovery.

## **Enhanced Mental Health**

Modified Pilates provides physical exercise for the body but the mindful approach to Pilates also aids mental health. Both physical training and mental health are ideal preparation for labour and aid postnatal recovery.

## **Stronger abdominal muscles reducing the likelihood of diastasis recti (separation of the linea alba ligament)**

Improving abdominal strength is helpful during labour and after childbirth. Sometimes the abdominal muscles may appear taut and toned as the abdomen enlarges to take the weight of the uterus, but this impression can be false. The ligament that runs down the centre of the abdominal muscles that forms the navel is called the linea alba. During pregnancy, it is at risk of separation. If it stretches more than 3cm a condition known as diastasis recti occurs. Separation is more likely to happen if the abdominal muscles are weak, if excess weight is gained during the pregnancy, if pregnancies occur close together, if the baby is large or in the case of multiple births. However, some abdominal strengthening exercises such as rolling movements should be avoided to reduce the risk of diastasis recti occurring (refer below to Modified Pilates during Pregnancy).

# Modified Mat Pilates during Pregnancy

## The Pilates Institute Method (PIM)

**At Pilates Heaven**, we teach Modified Pilates, a specific method called The Pilates Institute Method (PIM) which is ideal for certain health conditions including pregnancy as each exercise movement can be modified to a rehabilitative and safe level whilst also being effective.

- There is no head lifting whilst lying down face up which can cause discomfort. With the head down, you can focus on lengthening the back of the neck which is ideal during pregnancy.
- Lying down face up towards the end of pregnancy can be uncomfortable and undesirable. After week 16 (2<sup>nd</sup> trimester), lying down face up is discouraged as this position can impair venous return. As pregnancy progresses, the heart increases in size to cope with the extra volume of blood and impaired venous return reduces the amount of oxygen to the baby. Exercises that would ordinarily be performed lying down are performed seated instead either using a chair or stability ball or may even be performed kneeling on hands and knees (if carpal tunnel syndrome is not present) or in a side-lying position (with bottom leg bent for balance).
- During pregnancy, the effect of the hormone relaxin affects ligaments and joints making mums-to-be feel that they have a greater range of joint movement when stretching and over-stretching may cause long-term joint damage and may also affect other parts of the body such as the pelvis. From the start of pregnancy, stretching should be limited and after giving birth, if not breast feeding, continue to limit stretching for at least 3-5 months. If breast feeding, stretching should be limited for at least 12 months after the day you finish breast feeding. Modified Pilates discourages sitting with legs wider than hip-width whilst stretching is limited. Refer to section Exercise Limitations During Pregnancy for further details.
- Exercise movements such as leg circles are modified to a bent-leg version during pregnancy which is safer but still effective.
- Arm movements are restricted to one arm at a time towards the latter end of pregnancy (3<sup>rd</sup> trimester).
- For those with spine issues, such as disc damage, arthritis, osteopaenia or osteoperosis, seated rolling actions such as Rolling Back and Roll Up are limited to pelvic tilting. Shoulder Bridge offers a perfect alternative. This is ideal during pregnancy because rolling exercises should be performed with caution to reduce the risk of diastasis recti occurring (refer above to information concerning this condition). The ability to roll during pregnancy becomes more challenging as the baby grows, so towards the end of pregnancy most mums-to-be can only perform pelvic tilting anyway. Pelvic tilting can be performed in various positions, sitting, lying, kneeling on hands and knees.
- A note of caution when standing up from lying down. A ligament that connects the uterus to the front of the pelvis can be affected resulting in cramp being felt if the enlarged uterus shifts suddenly (sharp stabbing pain in the lower and outer quadrant of the abdomen either on the right or the left). Another ligament may cause a tight or dull pain in the sacrum area may be experienced if the pelvis tilts forwards overly.

**At Pilates Heaven**, we provide both mat and reformer classes. We can adapt the position on the reformer for you to make it safe during pregnancy and there are certain reformer movements that we might discourage during pregnancy. However, there is always a movement you can do instead that will be beneficial for both you and your baby. The reformers are converted to raised beds for mat Pilates, so you don't exercise on the floor which is ideal during pregnancy when getting down to the floor to exercise becomes more difficult, or even impossible. The raised beds are a perfect height for seated exercises when lying down face up is no longer an appropriate exercise position.

You must attend a reformer introduction session even if you have used a reformer before. We provide group sessions and a 1:1 session for those who may prefer this option instead. Please refer to our separate booklet concerning reformer introduction sessions.

**If you are a newcomer to Pilates**, we recommend that you start during your first trimester and that you attend either a fundamental or mixed level (low intensity) class. During the 2<sup>nd</sup> or 3<sup>rd</sup> trimester contraindications arise depending upon the trimester in which you start. If starting later than the 1<sup>st</sup> trimester, we recommend private tuition initially with the option of attending a group class once you have a bit of experience under your belt. We would discourage starting Pilates during the 3<sup>rd</sup> trimester unless you wish to attend on a 1:1 basis.

For the safety of both baby and mum-to-be, when participating in group classes, it is essential to exercise at the appropriate class level.

### **The Pilates Institute Method Fundamental Level Class**

This class level is ideal during pregnancy and comprises 15 of the original 34 Pilates' movements all of which can be modified appropriately during pregnancy. It is an ideal starter level especially for those who have not done Pilates before. Those who may have participated in Mixed Level classes during the 1<sup>st</sup> trimester (0-13 weeks) and 2<sup>nd</sup> trimester (14-26 weeks) may wish to consider moving to this level during the 3<sup>rd</sup> trimester (27-40 weeks).

### **The Pilates Institute Method Mixed Level Classes**

We provide a low intensity mixed level class which may be appropriate during pregnancy for those who haven't done Pilates before if were fitter before pregnancy. This level is suitable for those who exercised at this level prior to pregnancy.

We also provide a medium intensity mixed level class. This level may be suitable for those who exercised at this level prior to pregnancy but as mentioned above, towards the end of pregnancy (3<sup>rd</sup> trimester) they should consider attending a lower-level class (Mixed Level low intensity or Fundamental Level) due to the limited movements and restrictions imposed by the growing baby. If not, they must modify movements when appropriate for the safety of both baby and mum-to-be.

### **Using a Stability Ball**

Using a stability ball may be encouraged during pregnancy, but please note the following. Balancing on a suitably inflated stability ball is extremely challenging and is advisable only for those who already possess a high level of core strength and balance. Those who do not possess sufficient core strength or balance would be advised to use a chair or stool initially as this will facilitate an upright spine alignment and a more stable surface, both essential when strengthening the core muscles. Choose a stability ball that is the correct size for your height and ensures that your hips are slightly higher than your knees when it is inflated to its maximum (for most women 50cm is about right). A soft stability ball offers little challenge and may result in poor spine and/or hip/knee alignment.

## **Is It Safe to Exercise During Pregnancy?**

If a mum-to-be has no medical complications or pre-existing conditions such as a history of miscarriages, medical and fitness professionals agree that any exercise including Pilates is safe during pregnancy. It must be remembered that the predominant aim is to maintain pre-pregnancy fitness levels rather than improve them. Therefore, the best advice for anyone who is planning a pregnancy is to commence some form of exercise regime prior to becoming pregnant.

Those who are used to exercising prior to pregnancy and have a good level of fitness may continue to exercise throughout their pregnancy although they will have to consider making some changes including performing lower-intensity levels. If pregnancy is suspected, all exercise should be ceased until the pregnancy has been confirmed and medical clearance to exercise has been obtained.

Those with a more sedentary lifestyle and who are not used to exercising prior to pregnancy, may start an exercise programme but the programme should be an appropriate level for their current fitness level.

It is not advisable for anyone who has become pregnant because of IVF treatment to participate in Pilates' exercise until after the baby is born, irrespective of whether they have done Pilates before or not.

Medical clearance must be obtained prior to participating in any physical exercise irrespective of whether the mum-to-be is physically active prior to pregnancy.

Physical Activity Readiness Questionnaires (PARQ) including any relating to pregnancy must be completed.

## **Warning Signs During Pregnancy**

Stop exercising immediately and contact your GP if you experience any of the following:

- Vaginal bleeding or excessive discharge from vagina
- Abdominal or chest pain; heart palpitations or shortness of breath
- Sudden swelling of hands, feet, or face
- Severe, persistent headaches, dizziness, feeling faint or excessive fatigue
- Raised blood pressure, severe anaemia
- Severe pain in pubic area or hips
- Severe nausea or vomiting, high temperature (over 100°F or 38°C)
- Placenta Praevia (placenta too low or too close to cervix)
- Uterine contractions or breaking of waters, baby small for date

## **Exercise Limitations During Pregnancy**

The following should be avoided:

- Running.
- Lifting heavy weights.
- Standing for long periods of time.

Care should be taken when stretching. Anyone who was extremely flexible before pregnancy should limit stretching to the range that they performed pre-pregnancy to reduce the risk of joint injury and damage that may be caused by over-stretching. Pubic symphysis syndrome is when the joint stabilizing ligaments around the pelvic bones become too stretchy and relaxed causing joints such as the sacroiliac joint to widen resulting in inflammation and pain especially when walking or climbing stairs. In extreme cases, the only cure is immobilisation and bed rest. Limiting range of movement when stretching can reduce the risk of such issues. Refer to section Modified Mat Pilates During Pregnancy for further details.

## **Post Pregnancy**

Irrespective of whether they attended Pilates or not during pregnancy, anyone may participate in Pilates' exercise if they have attended the 6-week check-up (8-10 weeks for Caesarean Section) and obtained medical clearance to return to exercise. This timescale allows time for the abdominal muscles to close and re-align. A Physical Activity Readiness Questionnaire (PARQ) relating to post-pregnancy should be completed.

Those who participate in Pilates after pregnancy should attend a fundamental level class or a mixed level (low intensity) class initially and progression to higher lesson levels should not be rushed.

Waiting until the 6-week check-up (8-10 weeks C-Section) does not mean you cannot exercise at all.

- Daily walking complimented by posture education at this stage is an excellent form of exercise. Considerations should be considered when buying a pram to make sure that the handle height allows the mother to walk with correct alignment.
- Pelvic floor exercise can be started as soon as the mother is ready and within days of childbirth.
- Breathing techniques should be considered especially lateral thoracic breathing if you have exercised with us during pregnancy and wish to resume afterwards.
- Gentle pelvic tilting can be introduced 3-4 days after childbirth and may be performed standing, lying, or kneeling on hands and knees.
- Advice should be sought from a doctor or midwife before starting swimming as there is a chance of infection.
- During this time clients should limit their range of movement considerably when stretching (refer to note on stretching above) and movements that were restricted after the 1st trimester will remain restricted post pregnancy especially if there has been a separation of the linea alba ligament (refer above to diastasis recti).