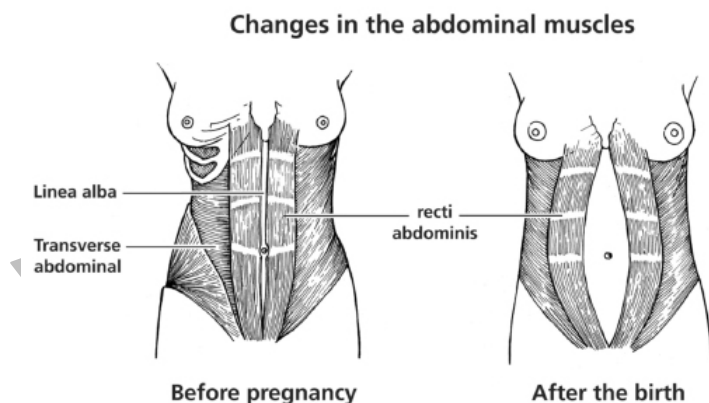




Rectus Abdominis Diastasis (RAD)

The abdominal muscles are made up of four layers of muscle connected in the midline by connective tissue called the linea alba.



RAD or Rectus Abdominis Diastasis refers to the thinning and widening of the linea alba with associated laxity of the abdominal muscles.

Some widening towards the end of pregnancy is normal and necessary for the growing baby. The separation generally resolves in the weeks following childbirth but for approximately 1/3rd of women it may persist.

Why does it happen?

During pregnancy hormones soften your connective tissue. This along with the growing baby pushing against the abdominal wall causes the muscles to stretch. A number of factors may influence the development of RAD but unfortunately there is still a lot we do not know and further research is needed. These factors include:

- A large baby or twins
- RAD in a previous pregnancy
- Overuse of the abdominal muscles during pregnancy – such as prolonged exposure to heavy lifting or exercises that excessively load the abdominal wall
- Genetics – connective tissue composition may also be a factor
- IVF – due to the potential for prolonged hormonal influence

Why is it important?

The abdominal muscles work with the muscles of the lower back, diaphragm and the pelvic floor to control the intra-abdominal pressure that occurs when we cough, sneeze, laugh, lift, bend and other strenuous activities. Weakness in the abdominals has therefore been linked to

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back and pelvic pain, poor bladder or bowel functional and reduced control when moving your joints. Many women have no symptoms but may notice a bulging or doming of their abdominals on sitting up from lying positions or during coughing.

Management:

The aim is to improve the overall function of the abdominal muscles and how they manage intra-abdominal pressure; the focus is **not** on closing the gap between the muscles. This is because the size of the tummy gap does not correlate to function.



Loading the linea alba (connective tissue) optimally can stimulate structural changes in the connective tissue. This means that you can carry out an exercises without excessive doming or lack of tension in the linea alba.

Try not to fear movement or exercise; however it is important to be mindful of activities in the immediate days and weeks following birth that place stress on your stomach and cause the abdominal wall to bulge/dome. This is because your muscles are still recovering and will struggle to manage intra-abdominal pressure as effectively in these early days.

Consider modifying these activities in the weeks following birth:

- Sitting straight up in bed - to get out of bed, roll onto your side, drop your legs off together and push up into a sitting position using your arms.
- Avoid heavy lifting unnecessarily* - if unavoidable bend your knees and use your legs rather than bending your back
- Abdominal crunches or sit ups

*It is impossible to avoid all heavy lifting as you are caring for your new baby and will need to lift the car seat and pram. Aim to utilise partner/family support where possible. However, these movements are not to be avoided forever and therefore your muscles need to be strengthened in order to manage the demand of these activities.

You can start pelvic floor exercises in the days following birth and build them up gradually, aiming for x10 repetitions, holding each one for 10 seconds and x10 short squeezes, aiming for 3x a day.

Posture & back care:

While there is no perfect posture, being about to move freely between different postures is important for muscle recovery and bodily functions.

How you sit, stand, lie and lift can all affect the health of your back and how your abdominal muscles work. It takes several months for your abdominal muscle strength and support to return to normal and the back is more susceptible to injury in this time. Also a new mum often finds herself in positions which can strain the back and lead to pain due to frequent sitting, bending and lifting when nursing and caring for a young baby or child.

There are several things you can do to help prevent backache from happening, and to help you cope with an aching back if it does occur.

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- While feeding your baby, always sit with your back well supported and straight. Bring your baby up to you rather than bending to your baby. Put a small pillow or rolled up hand towel behind your waist to support your lower back. Make sure your feet can reach the floor.
- Kneel or squat to do low-level jobs, such as bathing your baby or picking things up off the floor. Avoid bending your back. Make your knees do the work instead.
- Change nappies on a raised surface. You could kneel on the floor next to a sofa or bed.
- To lift heavy objects, such as a baby car seat or an older child, bend your knees, keep your back straight and hold the object close to your body. Make your thigh muscles work as you lift. Squeeze your pelvic floor and deep stomach muscles as you prepare to lift.
- Keep your back straight when you push your pram or buggy. Alternatively, carry your baby in a well-fitting sling.

Constipation:

Straining to open your bowels puts excessive pressure on your abdominal muscles, linea alba and pelvic floor which can encourage diastasis. Therefore we need to learn how to manage this pressure and optimise our breathing. Positioning is also important as this helps the muscles to eliminate your stool more efficiently.

Try to keep the stool consistency soft by modifying your diet and fluid intake. Eating plenty of fruit, vegetables and fiber can help. Make sure you are drinking enough, between 1.5-2L but this can vary depending on your height and weight.



Correct positioning:

- Sit fully on the toilet
- Have your feet apart and raised up on a stool/support, with your arms resting on your thighs
- Keep your tummy relaxed and avoid holding your breath
- Some women may find it helpful to support the perineum (the area between the back passage and the vagina) when emptying their bowels
- Take deep breaths in and out to help pass the stool without straining

Breathing:

Synergy between the diaphragm, abdominal wall and pelvic floor is needed for optimal function.

Try not to hold your breath, and practice letting go of your abdominal muscles. 'Belly breathing' can help to relax the abdominal muscles throughout the day and avoid overuse or gripping. Breathe gently in and out so that the belly rises on the breath in and fall on the breath out.

Exercises:

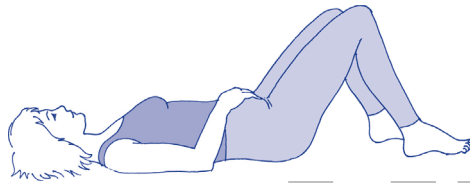
There are no set exercises for RAD. Your rehabilitation needs to suit you and the type of exercise you enjoy. Compliance is key in RAD rehabilitation. As progress may be slow and

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can take several months, goal setting may help maintain focus and motivation. Rehabilitation aims to progress you to your pre-RAD baseline, which will be influenced by your lifestyle, physical baseline and exercise preferences, however it will not have any influence over stretch marks or loose skin. And don't forget, progress is not measured by the gap.

Basic Abdominal Exercises

Starting position for exercise one. Lie on your back with one pillow under your head, your knees bent up and feet flat on the floor.



IMPORTANT

- If doming of the abdomen or pain occurs during exercise, stop and check you are performing it correctly. If this continues, stop and discuss this with your physiotherapist.
- Unless advised by your physiotherapist, avoid using any abdominal supports.
- With all exercises it is more important to perform them with good control and alignment than to do lots of them. **QUALITY OVER QUANTITY.**

1. Deep abdominal (transverse abdominis, TA) muscle contraction

- Whilst lying on your back, let your tummy relax and breathe in gently. As you breathe out, gently draw in the lower part of your stomach like a corset, narrowing your waistline. Squeeze your pelvic floor muscles at the same time.
- Hold for a count of 10 (keep breathing normally), then gently release. Repeat up to 10 times (you may not manage 10 straight away, so start with fewer and build up gradually).

2. Pelvic Tilting

- Position yourself on your hands and knees, or lying on your back, whichever is easier. Tighten your pelvic floor and draw your tummy muscles in, as in exercise 1.
- Gently curl your tailbone under and bring your pelvic bone forwards whilst rounding your spine.
- Then gently tilt your pelvis backwards so that your tailbone is sticking up and stomach is closer to the floor. Try x10 reps. Ensure the movement is controlled.



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3. Bridging

- Begin by lying on your back with the palms of your hands flat on the floor next to you.
- Exhale and engage pelvic floor and TA while lifting your pelvis off the floor.
- Hold this for 5 seconds before gently lowering your pelvic back to the ground, complete this 3 times.
- To progress, try to hold for longer (5-20 seconds), as you feel able.



4. Sitting abdominal activation

- Begin by sitting in a firm chair
- Start with some deep breaths, inhale and relax, exhale and engage your pelvic floor and TA.
- Progress by leaning back slightly and holding this posture for progressively longer, breathing throughout. Begin increasing from 5 seconds hold up to 20 seconds as you feel able. Increase sets gradually from 5 to 10.
- Progress by moving to sitting on the floor with knees bent and complete the previous steps. Lean back further to make this more challenging.
- Progress again by adding alternating leg lifts while holding the backwards leans, still breathing throughout.
- You can continue progressing by lifting both legs at the same time or by rotating your upper body left or right with each leg lift.



4. Table top toe-taps

- Lie on your back and engage your TA muscles.
- Then lift your legs in the air as pictured below, keeping your skins flat like a table top (TIP: keep your TA engaged throughout).
- Using one leg at a time, lower your leg down until your toes touch the floor, then bring them back to the table top position in a controlled manner.
- If you can't get your toes to tap the bed yet, just go as far as you can whilst maintaining the TA contraction and then return to the table top position.



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- Alternate legs each time. Start with 5 reps on each leg and build up gradually.

Only progress your exercises and repetitions gradually, as and when you are able. If you have any questions then speak to your Physiotherapist.

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- Main Entrance at Birmingham Heartlands Hospital Tel: 0121 424 2280
 - Treatment Centre at Good Hope Hospital Tel: 0121 424 9946
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