

## CHANGES IN THE BODY'S FUNCTIONS DURING PREGNANCY AND EXERCISE EXAMPLES

### PELVIC FLOOR

The pelvic floor gets strained during pregnancy, so its well-being must be paid particular attention to. Because the pelvic floor muscles are voluntary muscles, you can affect their condition yourself. They support the bladder, vagina, uterus and rectum. The pelvic floor muscles function together with the deep abdominal and back muscles and the diaphragm, supporting the lumbar and pelvic regions as well. The pelvic floor muscles also sense pleasure during intercourse. Keeping your pelvic floor muscles functioning well will make childbirth easier, boost recovery after childbirth and prevent incontinence and prolapse.

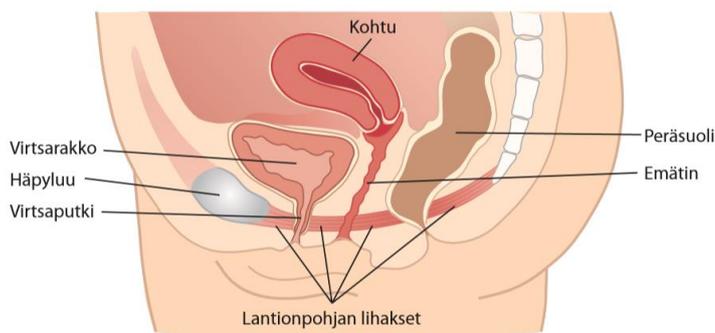


Figure 1. Pelvic floor muscles. The figure shows a cross-section of a female pelvis. The fibres of the pelvic floor muscles link into a connected support structure surrounding the urethral, vaginal and anal openings.

(figures: [www.kaypahoito.fi](http://www.kaypahoito.fi))

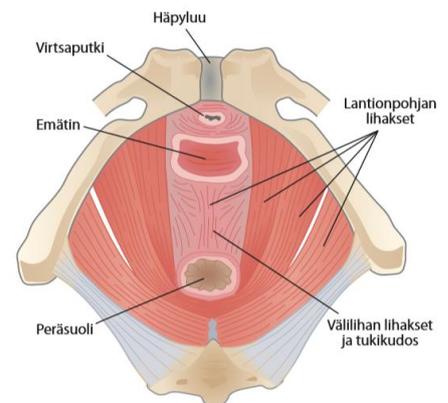


Figure 2. Pelvic floor muscles. The figure shows a cross-section at the level of the pelvic floor. The fibres of the pelvic floor muscles link into a connected support structure surrounding the urethral, vaginal and anal openings.

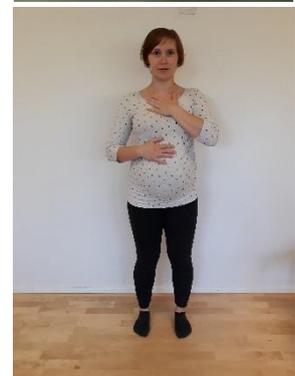
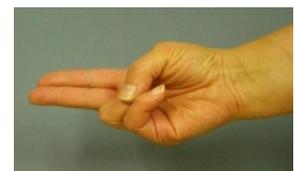
### Identifying your pelvic floor muscles (helps in finding muscle activity)

Start the training by learning to identify a pelvic floor contraction.

The function of the pelvic floor muscles can be tested by inserting two clean fingers into the vagina. When you contract your pelvic floor muscles, you can feel the muscles tightening around your fingers and a slight upward suction.

Try to identify your pelvic floor muscles in different positions. Lying down is the easiest position for training at first, but switch to training while standing up and moving during normal activities as soon as possible. Contract the anus, vagina and urethra lightly for two seconds as if you were **holding in** gas and urine. Do the exercise lightly while trying to find muscle activity in your pelvic floor.

With the pelvic floor functions, it is important to focus on relaxing the pelvic floor muscles in addition to activation. Relax the muscles before the next tension. Breathing in makes it easier to relax your pelvic floor as the diaphragm contracts and moves downward. When you breathe out, the diaphragm moves upward and directs the activation of the pelvic floor.



Perform the pelvic floor identification exercises lightly and several times per day. Increase the amount of contractions and repetitions according to your feelings. More information can be found on [Terveyskylä's Kuntoutumistalo website in the 'Kuntoutujalle' section](#) (in Finnish).

You can begin the strengthening exercises once you can do the identification exercises. Make it a habit for yourself to do the pelvic floor muscle exercises. The exercises are recommended to be performed while sitting, standing, walking, lifting and **alongside other daily activities**. Have 1–2 rest days per week. If the training causes contractions, reduce the amount of training to a level where you do not have them. However, the training has not been found to increase the tendency of the uterus to contract.

## EXAMPLES OF TRAINING



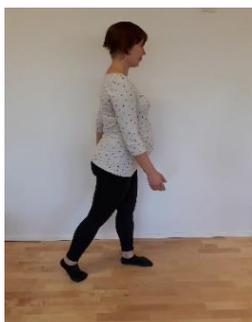
### **Maximum strength (needed in strong exertions, e.g. lifting)**

Sit on a chair. Upon exhalation, first contract your pelvic floor muscles strongly (upward suction) and stand up at the same time. Keep contracting and count to five. Relax and sit back down. Stay relaxed while counting to ten. Repeat the exercise 5–10 times.



### **Explosive strength, i.e. anticipatory contraction (needed in sudden exertions, such as sneezing)**

Train the anticipatory contraction of your pelvic floor while coughing or blowing. Upon exhalation, first contract your muscles quickly and as strongly as possible and cough or blow at the same time. Relax between contractions for a few seconds. Repeat the exercise 10 times.



### **Endurance strength (needed in daily mobility)**

Contract your pelvic floor muscles with moderate strength while walking, climbing stairs and engaging in physical exercise. Hold the contraction for at least 10 seconds and relax for 20 seconds. Hold the contraction longer as the training progresses. Repeat the exercise 5–10 times.

## EXAMPLES OF POSITIONS AND EXERCISES TO RELAX THE BACK AND PELVIC FLOOR

While doing pelvic floor muscle exercises, it is important to also focus on how to consciously relax the pelvic floor. This will help you teach your pelvic floor how to relax during childbirth. Relax in different positions. Please note that you should not strain while urinating. The importance of relaxing your pelvic floor becomes more emphasised if, before pregnancy, you had to go to the toilet often, had trouble defecating or experienced pain during intercourse. The growing uterus reduces your bladder capacity and naturally increases your need to go to the toilet.



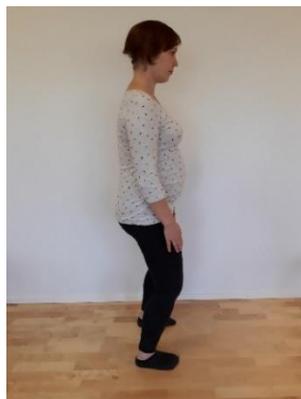
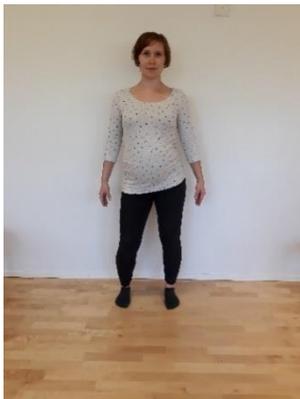
### Exercise 1.

Lift your legs e.g. on the seat of the sofa. Rest in this position for 20 minutes and let your back relax. Lying on your back is not recommended after the halfway point of pregnancy due to the fact that the position weakens venous circulation.



### Exercise 2.

Lying on your side, place pillows between your legs.



### Exercise 3.

Swing your pelvis back and forth and from side to side, make a small circle.

## CHANGES IN POSTURE AND ERGONOMICS DURING PREGNANCY

The growing uterus and enlarging breasts cause changes in the posture of the spine during pregnancy. The growing uterus increases the curve of the lower back and also causes strain in the upper back and shoulders. The back muscles tighten and the abdominal muscles stretch due to the large stomach and changed posture. As the stomach grows, the rectus abdominis muscles separate and the connective tissue, linea alba, between them stretches. Furthermore, the hormonal changes during pregnancy loosen the joints of the pelvis and back.

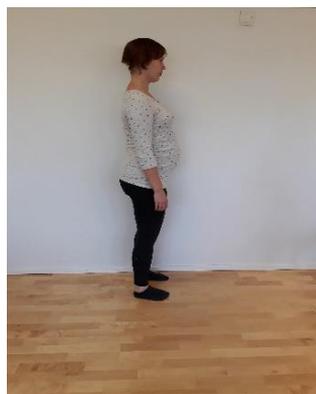
Combined, these factors cause strain on the back, which may appear as back pain. The back pain can be relieved with light exercise, back relaxation positions and/or hot or cold packs. With pelvic floor and core exercises, shoulder exercises and other light exercise, you can relieve the strain symptoms of your entire body.

In a good standing posture, your pelvis, chest and head are in centre position. Weight is distributed evenly on the whole sole, so that your knees are not hyperextended. The pelvic floor provides light support and the abdomen is tight, tailbone towards the floor. Shoulders relaxedly back and shoulder blades towards each other.

More information can be found on [Terveyskylä's Kuntoutumistalo website in the 'Kuntoutujalle' section](#) (in Finnish) and [the City of Helsinki's Family support website](#).



Bad posture



Good posture

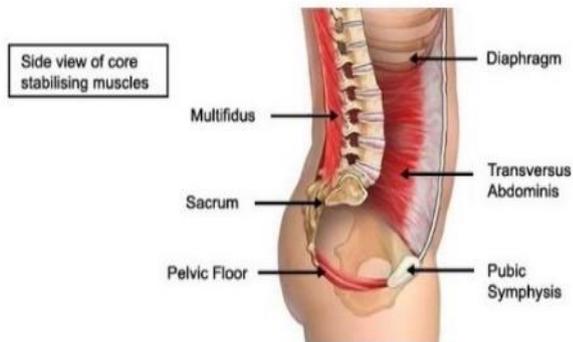


Pay attention to your working positions while standing, for example. Avoid working for long periods while stooped or twisted to the side. Lifting should be done with your legs, with your back as straight as possible. Activate your pelvic floor muscles and the transverse abdominal muscle as you stand up.

Various support vests may help to reduce pain. Support vests are provided by e.g. the following companies (websites in Finnish):

[Auron](#), [Rehashop](#), [Respecta](#) and [Selkäkanava](#)

## SUPPORTING POSTURE WITH CORE MUSCLES



Deep abdominal and back muscles surround the core of your body like a corset. These muscles support the spine and pelvis together with the pelvic floor muscles and the diaphragm.

After the halfway point of your pregnancy, you should stop doing exercises that focus on the superficial abdominal muscles (such as upper body lifts while lying on your back), as the swelling of the belly causes these types of exercises to put an excessive strain on the pelvic floor and stomach area. Instead, abdominal muscle exercises should be carried out by exercising the pelvic floor and deep abdominal and back muscles. This training can be used to try and prevent the excessive stretching of the linea alba.

(figure: <https://beyond-health.co.uk/womens-health-physiotherapy-part-1/>)



### Exercise 1.

The activation of the deep abdominal muscles is trained in different starting positions. Activate the pelvic floor lightly and 'tighten' the lower abdomen, i.e. pull it lightly inwards at the end of the exhalation. Hold the tightness for 5 –10 seconds while breathing normally. Repeat according to your feelings and practise in your everyday life.

## EXAMPLES OF EXERCISES DURING PREGNANCY



### Exercise 1.

Stand in front of a chair with a palm on your stomach and a back of the hand on your back. Feel that the position of your back is as centre as possible.

Exercise: Activate the pelvic floor and tighten your abdomen lightly. Sit down on the chair and stand up using your thighs and buttocks while maintaining the support at the pelvic floor and abdomen. Relax your muscles when standing up. Repeat 10–15 times.

By adjusting the height of the chair, you can make the exercise suitable for yourself.

You can also do the exercise without a chair. Avoid deep squats after the halfway point of your pregnancy.



### Exercise 2.

Lie on your back with your knees bent and feet against the floor. Activate the pelvic floor and buttocks and tighten your lower abdomen. Lift your pelvis up while rolling your back. Lower your pelvis back down gently. Repeat 5–10 times. While your pelvis is down, relax the pelvic floor, buttocks and lower abdomen. Pause for 5–10 seconds between each exercise.

Please note that lying on your back is not recommended after the halfway point of pregnancy due to the fact that the position weakens venous circulation.

### Exercise 3.

Lie on your side, knees bent, and maintain the natural curve of your back. Support the top hand against the floor by your chest. The lower hand is under your head, neck long. Tighten your lower abdomen and activate your pelvic floor (light suction), causing your waist to feel 'lighter' on the floor. Once you succeed, combine the activation with moving your leg. Keep your legs bent and lift the top leg to a horizontal position. Then gently straighten it diagonally backwards heel first. Keep your pelvis in place so that the curve of the back does not deepen. Bring the leg back forward and gently repeat 5–10 times.





**Exercise 4.**  
Lie on your side. The starting position is the same as in the previous exercise. Support with your hand against the floor, tighten your lower abdomen and activate your pelvic floor (light suction), causing your waist to feel 'lighter' on the floor. Keep your ankles together and twist your knee open. Maintain the position of your lower back and pelvis. Gently repeat 5–10 times.

## SPINE MOBILITY EXERCISE AND EXAMPLES OF STRETCHES

The hormonal changes of pregnancy cause joints and ligaments to become more flexible than normal. If you feel non-specific pain or the stretches do not give you the normal feeling of stretching, there is no need to continue stretching.

### Exercise 1.



Lie down on your side with your back straight and pelvis in place. Bring your knees as close to the stomach as you can and maintain the position.

a) Twist your upper body gently backwards as far as you can while keeping your knees together. Do this 2 x 15 times.



b) After this, you can stretch the pectoral muscle by taking your straight arm diagonally backwards. Hold the stretch for 30 seconds and repeat on both sides.



### Exercise 2. Hip adductor, hamstring and lower back stretch.

Sit on the floor with one leg bent in front of you. You can sit on a small pillow if you want.

a. Lean your side gently towards the straight leg until you feel a stretch in your inner thigh and/or side.  
b. Turn your chest towards the straight leg and lean forward with your back straight until you feel a stretch in your hamstring and/or lower back. Hold both stretches lightly for 30 seconds.



### Exercise 3. Quadriceps stretch lying on your side.

Tight quadriceps may change the position of the pelvis and cause strain on the lower back. Grab the ankle of your top leg. Tense the buttock of the stretched leg and pull your heel towards the buttock. Keep your thigh parallel to the floor. Keep the pelvis in place by tightening the deep transverse abdominal muscle. Do not let the curve of the lower back increase. Hold the stretch for 30 seconds.

### Hip flexor stretch

Stand with one foot forward or on one knee. Keep your back straight. Tighten the transverse abdominal muscle and activate the gluteal muscle of the back leg. Bring your pelvis lightly forward, which allows you to feel a stretch in your groin. Hold the stretch for 30 seconds.

## SWELLING DURING PREGNANCY



The increased fluid flowing through your body during pregnancy can cause swelling. In this case, it is good to drink sufficiently and change your position. When sitting for extended periods, it is good to take a break to stretch your legs every thirty minutes.

You can alleviate the swelling of your legs with calm exercise, such as walking or movement that pumps your limbs. Holding your legs up in the evenings may also reduce unpleasant swelling of the ankles. If there is swelling, it is good to avoid constricting clothing (socks, cuffs). Cold treatment and compression stockings can also be used to reduce swelling.

[More information can be found in Finnish on Terveystyöskylä's Naistalo website in the 'Raskaus ja synnytys' section.](#)

You may have some carpal tunnel problems during pregnancy because of the swelling. This usually heals by itself after the pregnancy. You can use a wrist brace for night-time numbness of the hands/fingers.

[More information can be found in Finnish on Terveystyöskylä's Naistalo website in the 'Raskaus ja synnytys' section.](#)

## EXERCISE



Exercise is good for the mother, father and future baby, unless separately prohibited. A form of exercise that suits most people is brisk walking, which diversely affects the body and oxygen intake. Gymnastics, gym exercise, jogging, etc. are effective hobbies but should be taken more lightly during the last trimester: jumps replaced with steps, running with walking and weights with lighter ones.

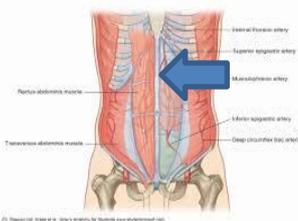
Strengthening the core muscles should be done with pelvic floor and transverse abdominal muscle exercises with attention to the activation of the buttock area. This ensures that the pelvic floor and linea alba are not strained too much. However, you can continue your hobby throughout your pregnancy as long as you LISTEN TO YOUR BODY. It is recommended to engage in at least 30 minutes of daily outdoor exercise that causes you to sweat slightly and become a bit out of breath.

### STARTING EXERCISE AFTER CHILDBIRTH

Light pelvic floor identification exercises should be started within 24 hours of childbirth. Choose the least painful position for this. Perineal pain and swelling may make it difficult to feel the contraction of the pelvic floor muscles. It is important to look for the 'lost' contraction in different positions. You can test the activation of the pelvic floor by stopping your urine flow once.

Starting pelvic floor muscle exercises before childbirth will speed up the recovery of the muscles after childbirth. After the 2–3-month intensive training, the sustaining training should continue 2–3 times per week. You should try to do away with the more frequent toilet visits after childbirth. The normal interval is approximately 3 hours with no nightly visits.

More information can be found in Finnish on [Terveystyöskylä's Naistalo website in the 'Raskaus ja synnytys' section.](#)



During pregnancy, the linea alba stretches and the rectus abdominis muscles separate. Because of this, it is not recommended to start exercising your rectus abdominis muscles before the linea alba recovers.

The recovery of the separation is heaviest during the first two months after childbirth. Some spontaneous recovery takes place for the first year but it slows down after six months.

You can test the recovery of the linea alba by lying down on your back with your legs bent and soles on the floor. First, lie on the floor and feel if the linea alba is firm or still flexible.



activation.

**Test:** lift your head and shoulder blades off the floor and feel the gap between your rectus abdominis muscles with your fingers all the way from your pubic bone to the bottom of your sternum. If the gap is no more than two fingers wide and you feel firmness under your fingers, the gap is probably normal. If the gap is several fingers wide and you feel your fingers dip, this indicates an abdominal separation.

Activate your pelvic floor lightly and tighten your navel area. Lift your head and shoulder blades off the floor. Feel if the firmness of the linea alba increases under your fingers with the aforementioned muscle

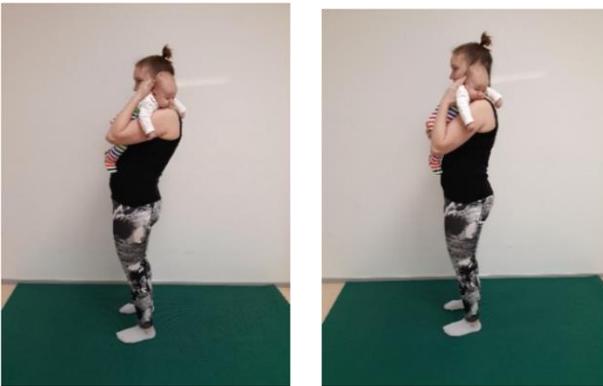


To ensure your pelvic floor muscles are connected correctly, feel over your perineum with your hand and feel that the pelvic floor does not pop out but that you feel inward suction.

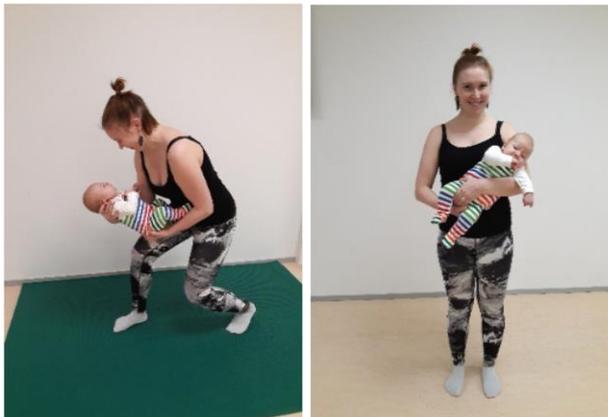
The muscles that are weakest after childbirth are the pelvic floor, abdominal, back and gluteal muscles. These muscles are very important in childcare: lifting, carrying, squatting. The altered posture and increased load often cause back and neck pain. Hormonal factors (e.g. the relaxin hormone) still affect the body by relaxing ligaments and support structures.

The key things to remember to prevent and treat back pain are ergonomics in childcare and strengthening your core support muscles.

### Working positions (heading 3)

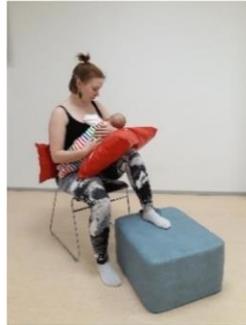


When moving about and working, try to keep your pelvis in a balanced position and maintain a good posture. Avoid working for long periods while stooped or twisted to the side.



When lifting, use your legs and keep your back as straight as possible. Lightly tense your pelvic floor and deep abdominal muscles when you stand up. Carrying the baby puts a strain on your body. Avoid one-sided carrying positions and use your core muscles while taking care of the baby.

## Well-being of the neck and shoulders



You can reduce the strain on your neck and shoulders by varying the positions in which you feed your baby. When feeding while lying down or sitting, try to find a relaxed position with the help of pillows. If bottle-feeding, remember to feed from both sides for the benefit of both your baby and yourself.

Be sure to avoid pinning the baby's arm between your side and arm; your baby should be able to keep their arm in sight in front of their body.

## EXERCISE



Gradually returning to your normal exercise routines is important for your general well-being. Walking is a very good form of exercise that facilitates recovery. Start by taking short walks, especially if you feel pressure in the pelvic floor area. Make use of the time spent walking by exercising your pelvic floor and deep abdominal muscles during walks; try to keep the muscles tense e.g. for the distance between two power poles, then stay relaxed for twice the distance. To relax your upper back and shoulders, let one arm swing in large arcs.

More information can be found in Finnish on [Terveyskylä's Naistalo website in the 'Raskaus ja synnytys' section.](#)

## CHILD'S MOVEMENT AND SENSORIMOTOR DEVELOPMENT

Staying active is important for a child's physical, psychological and social development. By moving around, the child will learn about their own body and the surrounding environment. They will receive joy and satisfaction from learning new things and achieving things through movement (e.g. getting to their mother, reaching the item they wanted). Mastery of diverse movement patterns and usage of both sides of the body create prerequisites for learning later on, e.g. reading and writing. Good movement skills facilitate managing socially in daycare and school.

The development of movement progresses in stages from easier skills to more difficult in accordance with the prerequisites granted by the development of the nervous system. Each child is unique, and the development does not always progress in the same order as described in literature. Normal sensorimotor development has a wide fluctuation margin. This means that you should not compare your child with other children. If you are wondering about something in your child's development, do not hesitate to discuss the matter with professionals e.g. at the maternity and child health clinic.

When a child is alert, they enjoy versatile handling, which allows them to experience different positions. Carry your child diversely and changing sides. This will also strain your own shoulders more evenly. When carrying the baby, hold them so high that both arms are behind your shoulder. Carry the baby on each shoulder in turn.



When you carry the baby in front of you, see that both their arms are above your arm in sight of the baby. Remember to carry the baby on both sides.

Allow the baby to spend lots of time on their back and stomach so that they can practise their developing skills. Practising lying on the stomach should be started as early as possible as a newborn, for example on the lap. If the baby does not enjoy lying on their stomach at 3–4 months, you can help them by placing a wedge or a towel roll under their armpits. See that the baby's elbows are in front of the wedge/roll.



A child over six months old enjoys moving around (turning from back to stomach, propping on arms, rolling, changing positions). A child is rarely satisfied with staying still (lying on their back) if they have the opportunity to move.

The child will sit and stand up themselves after sufficiently practising their earlier skills and once they are ready. Lifting the child to sit too early may make it more difficult for them to learn other movement skills. The child can sit on the high chair, stroller and lap as long as their back stays straight.

Excessive use of various equipment (such as bouncing chairs, Bumbo seats, doorway jumpers and walkers) can delay the child's walking. The child can practise taking steps by pushing a cart or a chair.

### Handling that supports a baby's sensorimotor development

Lift the baby by first gently turning them on their side. Do this on each side in turn. Lower the baby similarly by setting them on their side first and then on their back. Your hands support the baby around the upper arms. Do not support behind the neck.



When dressing the baby, turn them from their back on each side. Help the baby bend their upper hip and knee. If the shoulder/arm is left back, guide it to the front.



Playing position: Support the baby's neck and head against your thighs and make eye contact. Play with the baby's hands and feet, sing, rhyme and talk to the baby.

Playing position: Guide the baby's arms and legs together over their belly. Make eye contact and rock the baby by holding their ankles and hands from side to side or towards yourself. Be gentle with the rocking, and you may also hum and rhyme, if you like.



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Exercise during pregnancy:

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<http://www.pelvicus.fi/LP-perusohje%20naisille.pdf>

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