



# Abdominal and Postural Exercise During Pregnancy and Postpartum

Rita Santos Rocha  
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1

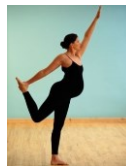
## Abdominal and Postural Exercise During Pregnancy & Postpartum

1. Benefits of physical activity, exercise and sports during pregnancy – a public health issue
2. Recommendations and guidelines for exercise and physical activity during pregnancy
3. Exercise prescription
4. Exercise adaptations



2

## What is posture?



- **Posture** is how you hold your body.
- There are two types:
  - **Dynamic posture** is how you hold yourself when you are moving, like when you are walking, running, or bending over to pick up something.
  - **Static posture** is how you hold yourself when you are not moving, like when you are sitting, standing, or sleeping.



## What is good posture?



- The key to good posture is the **position of your spine**.
- Your spine has three natural curves - at your neck, mid back (kyphosis), and low back (lordosis).
- Correct posture should maintain these curves, but not increase them.
- Your head should be above your shoulders, and the top of your shoulder should be over the hips.



## How can posture affect health?



- Misalign the musculoskeletal system
- Making spine more fragile and prone to injury
- Cause neck, shoulder, and back pain
- Decrease flexibility
- Affect how well joints move
- Affect balance and increase risk of falling
- Make food digestion harder
- Make breathing harder



5

## How can pregnancy affect posture?



- Misalign the musculoskeletal system – hormonal, baby and body weight, biomechanical adaptations
- Making spine more fragile and prone to injury – hormonal adaptations, stretched abdominals
- Cause neck, shoulder, and back pain – hormonal and body weight adaptations
- Decrease flexibility – no
- Affect how well joints move – hormonal adaptations (loosen joints and ligaments)
- Affect balance and increase risk of falling - hormonal, body weight, biomechanical adaptations
- Make food digestion harder - hormonal adaptations, and baby and uterus grow
- Make breathing harder - hormonal adaptations, and baby and uterus grow



6

# Posture during pregnancy



<https://www.sutterhealth.org/health/pregnancy/posture>

One of the most important contributions to a healthy pregnancy is **good posture.**

Proper alignment can decrease low back and neck **pain** and **fatigue.**



7



# How to maintain good posture?



Be mindful about posture



Be physically active



Exercising (specific exercises)



Maintaining a healthy weight



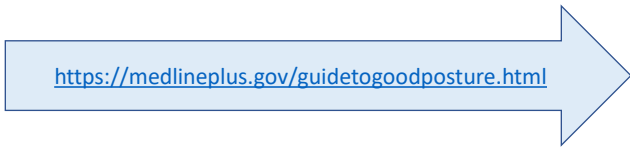
Wearing comfortable, low-heeled shoes



Work surfaces with proper height (e.g., sitting position while working or driving)



Short breaks for stretching and moving



8

## Posture during pregnancy

- Any kind of exercise may help to improve posture, but certain types of exercises can be especially helpful
- They include Pilates, barre, yoga, tai chi, and other classes that focuses on **body awareness** and **balance**
- These activities include exercises that **strengthen** upper and lower limbs, but also the **core** (muscles around back, abdomen, and pelvis)



9

## Exercise adaptations – resistance, flexibility, functional and neuromotor exercise: **POSTURE**

- Major muscles groups using machines, free weights, and body weight exercises
- Submaximal repetitions (i.e., 8-10 or 12-15 repetitions) to be performed to the point of moderate fatigue
- Static and dynamic flexibility exercises for each muscle-tendon unit
- Exercises involving motor skill, e.g., balance, agility, coordination
- Increased relaxation of ligaments in pregnancy = joints are supported less effectively = ensure proper technique



10

## Exercise session organization

Warm-up

Upper limbs / shoulders

Core

Lower limbs

Stretching

- Standing (support) – pelvic tilt
- Sitting
- Cat position
- Lying (side, supine) – head support
  - pelvic tilt, abdominals and buttocks contraction



11

- Warm-up: <https://youtu.be/Ca0uL5f2zQ8> (mf)
- Upper limbs / shoulders
  - <https://youtu.be/BHsjzBppQp0> (arms)
  - <https://youtu.be/XPdJfT3BuhQ> (arms)
- Core
  - <https://youtu.be/dHcyjJ5j2u4> (arms, core, chair)
  - <https://youtu.be/uwvYPWrIPcE> (arms, core, floor)
- Lower limbs
  - <https://youtu.be/ilcUBX1Gmn0> (barre, chair)
  - <https://youtu.be/a7elvHa-s0Q> (barre, chair)
- Balance
  - [https://youtu.be/isX\\_v7AiUpE](https://youtu.be/isX_v7AiUpE) (rsr)
  - <https://youtu.be/CMkoEhCSqA4> (mf)
  - <https://youtu.be/0jG47FIYOnI> (cardio + balance jpf)
- Stretching
  - <https://youtu.be/4XQyxy38E1M> (hands)
  - <https://youtu.be/DiID0v9uQ4o> (neck)
  - <https://youtu.be/ZuOeA7fHN7Q> (sitting)
  - <https://youtu.be/J73FgSWpyaM> (chair - 1st trimester)
  - [https://www.youtube.com/playlist?list=PLKrMI5EsL8Cnc2eNP6vaidF\\_PUuyibDUc](https://www.youtube.com/playlist?list=PLKrMI5EsL8Cnc2eNP6vaidF_PUuyibDUc) (dif. Positions)
- Relaxation/breathing
  - [https://www.youtube.com/playlist?list=PLKrMI5EsL8Cnc2eNP6vaidF\\_PUuyibDUc](https://www.youtube.com/playlist?list=PLKrMI5EsL8Cnc2eNP6vaidF_PUuyibDUc) (dif. positions)
- Mobility/posture (dif positions)
- <https://youtu.be/p2zuZLkqpdw> (jpf)
- Standing (support)
  - <https://youtube.com/shorts/xlZgPzqV6EM?feature=share> (barre, basic)
- Sitting
  - <https://youtu.be/0xqoOWQtcB8> (mf)
  - <https://youtu.be/ORmWzISWKAA> (FITBALL JPF)
  - <https://youtu.be/D-NLrHAPCFw> (POSTURE, BREATH jpf)
- Cat position
  - <https://youtu.be/02zI0rm4MLo> (trunk, outdoors)
  - [https://youtu.be/qT0\\_-fRzpro](https://youtu.be/qT0_-fRzpro) (yoga, jf)
  - <https://youtu.be/O6O7IC5B7pA> (cat, jf)
- Lying (side, supine) – head support
- <https://youtu.be/hzRDfPaaN-w> (REST)

12





## Youtube videos

- ACTIVE PREGNANCY CHANNEL
  - <https://www.youtube.com/channel/UC0Vyookwc0mcQ5T70imtoNA>
- EUROPEACTIVE CHANNEL \_EREPS Heroes:
  - <https://www.youtube.com/playlist?list=PLFUrvAeSMiT09e7T4s26zEmqpBjFuWw9>
    - Sandra Cañas - Pilates Session 1 - <https://www.youtube.com/watch?v=e4jmf--kcys&list=LLEUWdoBeh5rgfM0kZOn9Xtg&index=7>
    - Ioanna Vaporidi Pre Natal Yoga Session - <https://youtu.be/Zow3Ecy99FE>
- ESDRM FACEBOOK
  - <https://fb.watch/cLDnt2gtiD/> (barre)
- ACTIVE AT HOME CHANNEL
  - <https://www.youtube.com/channel/UCEUWdoBeh5rgfM0kZOn9Xtg>

MUSIC:

<https://www.youtube.com/channel/UCWRB3qU2pV4MqF8OXTXN/PqA/videos>



13



## References

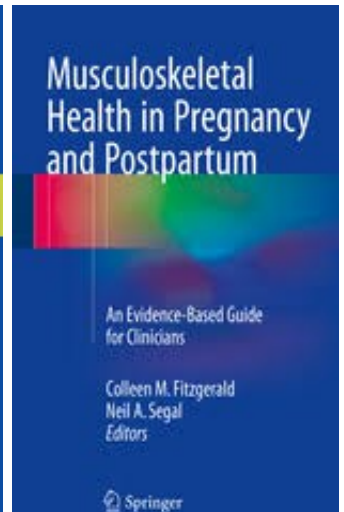
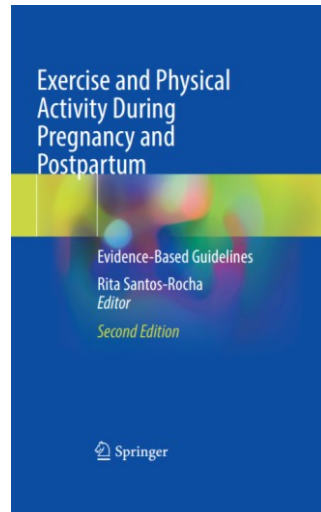
- MedlinePlus [Internet]. Bethesda (MD): National Library of Medicine (US); [updated Jun 24; cited 2020 Jul 1]. Available from: <https://medlineplus.gov/>.
- <https://www.sutterhealth.org/health/pregnancy/posture>
- Santos-Rocha R, Corrales-Gutierrez I, Szumilewicz A, Pajaujiene S. Exercise testing and prescription during pregnancy. In R. Santos-Rocha, Editor, Exercise and Physical Activity during Pregnancy and Postpartum. Evidence-Based Guidelines. 2 ed. Switzerland: Springer International Publishing; 2022, Ch.8.
- Szumilewicz A and Santos-Rocha R. Exercise selection during pregnancy. In Santos-Rocha, Editor, Exercise and Physical Activity during Pregnancy and Postpartum. Evidence-Based Guidelines. 2 ed. Switzerland: Springer International Publishing; 2022, Ch.9.



14

# Exercise adaptations during pregnancy

## • Textbooks



15

## • Rita Santos Rocha

- Portugal
- RitaSantosRocha@esdrm.ipsantarem.pt



16