

A close-up photograph of a pregnant woman's midsection. She is wearing a white top and white shorts. Her hands are gently resting on her belly, one above and one below the navel. The background is plain white.


Physical Changes with Pregnancy

**Physiotherapy Department
Cayman Islands
Health Services Authority**



HEALTH SERVICES AUTHORITY
CAYMAN ISLANDS
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Presentation Outline

- Hormonal changes
 - Spine and pelvic anatomy
 - Back and pelvic pain plus other aches/pains
 - Getting comfortable/relaxation techniques
 - TENS and it's application
 - Guidelines for the post-natal period
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Hormonal Changes

- Results in physical and physiological changes
- In collagen and involuntary muscles
- Increase total blood volume
- Growth of the fetus
- Enlargement and displacement of the uterus
- Adaptive changes in the posture
- Change in COG

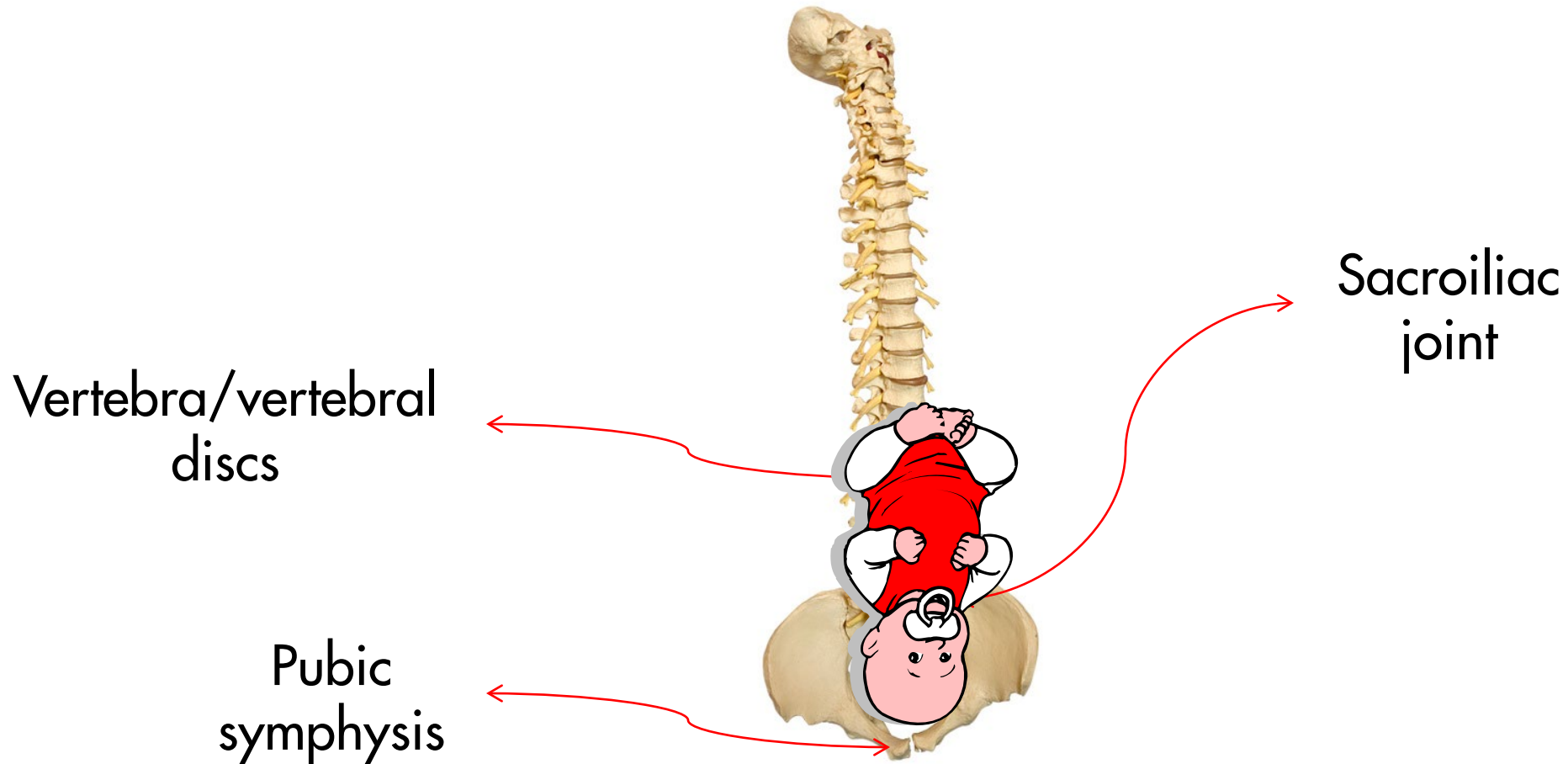
Specific Hormones Involved

- Results in physical and physiological changes
- In collagen and involuntary muscles
- Increase total blood volume
- Growth of the fetus
- Enlargement and displacement of the uterus
- Adaptive changes in the posture
- Change in COG



WARNING
PREGNANCY
HORMONES
AT WORK

General Anatomy of the Spine and Pelvic Girdle



Causes of Back and Pelvic Pain



- Ligamentous laxity in the spine and pelvic girdle
- Increasing weight of baby
- Inappropriate lifting
- Lack of exercise
- Weak abdominal muscles
- Poor posture

Abdominal Strength and Back Pain

- Transversus abdominis (TA) supports spine and pelvis (“the core”)
- Reduces strain on ligaments, lower abdomen, spine and pelvis during movement
- Previous back pain may be evidence of a weak TA

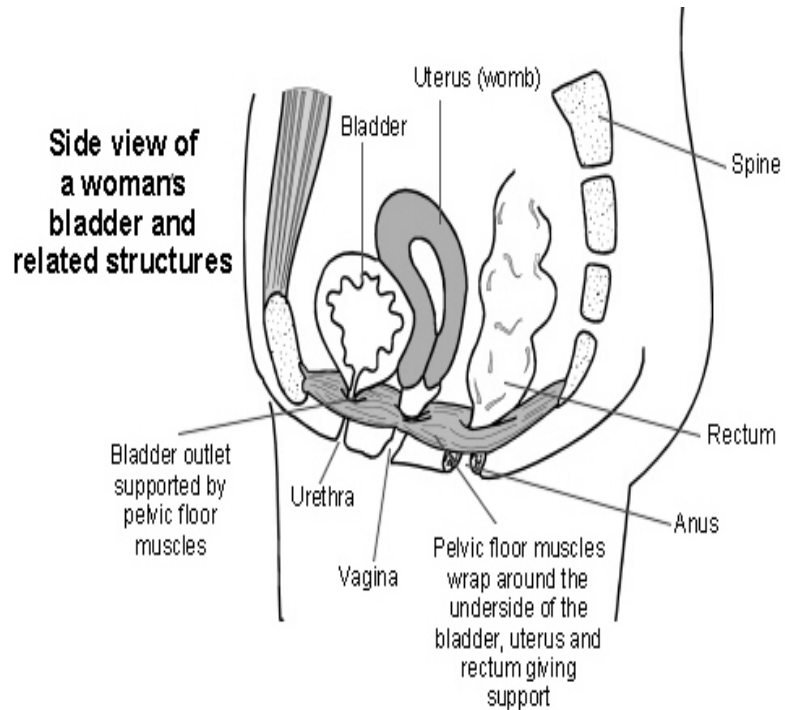


Strengthening the TA

- NOT accomplished through sit-ups
- Strengthening the TA in pregnancy
- Abdominal hollowing exercises
- Ideally begun in early pregnancy to achieve optimal benefits



Pelvic Floor Muscles



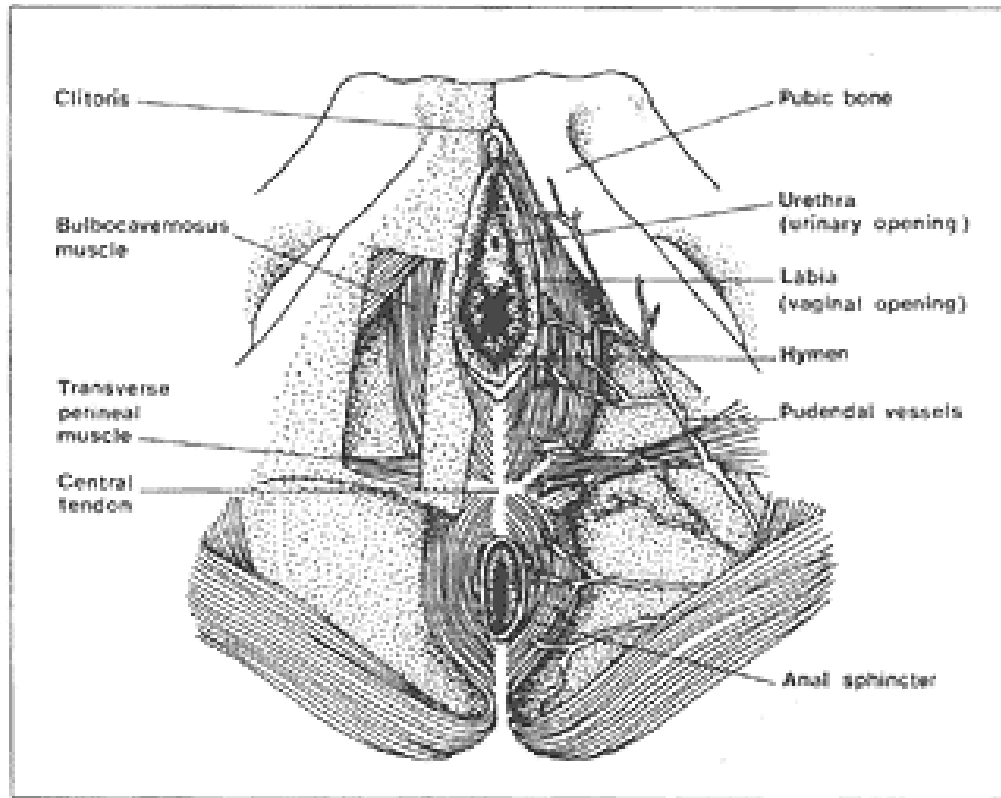
Can become weakened secondary to

- Lack of use
- Straining to use bowels or empty bladder
- Heavy lifting
- Carrying extra weight

During pregnancy become more weakened secondary to

- Weight of the fetus
- Stretching of muscles during childbirth

Strengthening the Pelvic Floor



- Kegels
 - 'The basic exercise'
 - 'The elevator'
- Why bother?
 - Increases circulation to the muscles and increases elasticity
 - Reduces the risk of urinary incontinence after childbirth

Other Aches and Pains

- Varicose veins
- Muscle spasms
- Carpal tunnel syndrome



Getting Comfortable

Lying

- Sidelying is best
- Avoid laying on back after 1st trimester

Sitting, standing, and walking

- Keep natural curve in spine

Bending and lifting

- Same as above
- Heavy lifting should be avoided or shared
- Keep feet apart for a stable base, load close to body, and avoid twisting



Benefits of Transcutaneous Electrical Nerve Stimulation (TENS)

- Non-invasive pain control
- No known side effects
- Enhances the body's natural pain relief systems
 - Minimizes the use of drugs



Using TENS

- Placement of electrodes
- Bridging the spine
- Length and frequency of use
- As early as possible during labor
- Can be used the entire time

Hiring a TENS unit

- Can be rented up to 2 weeks before delivery
- \$20 per week from the Physiotherapy Department (will be billed to patient)
- A therapist will assist you with setup



The Postnatal Period

Can take up to a year for the body to return to “normal”

Residual effects of hormones

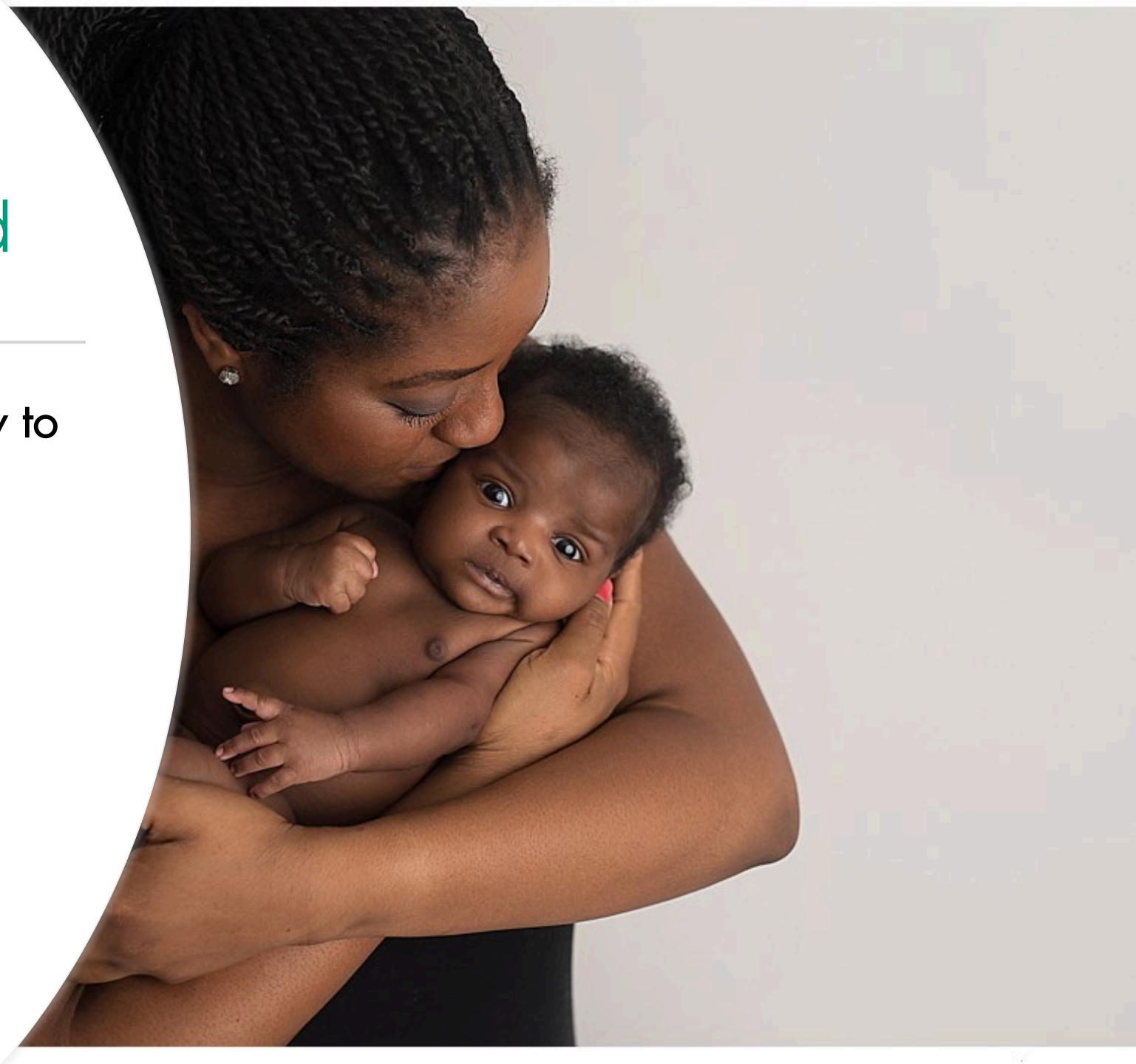
Longer with breastfeeding

Continue Kegels

Monitor Rectus Diastasis

Gradual return to exercise

Discussed further later in series



Questions