PELVIS I: BONES AND MUSCLES

- Introduction--why is pelvis so hard?
- Bony structures of the pelvis
  - Muscles of the pelvis--attaching the legs for upright living
Why is the pelvis hard--#1 upright

- Pelvic tilt or how we got to be upright
  - Compare with quadruped (cat for instance)

- Bowl concept
  - Pelvis spills forward
  - Hernia
  - “Beer belly”
  - In human minor pelvis is behind (posterior) to guts and abdominal cavity
Human pelvis still has quadruped orientation.
Why is the pelvis hard #2 (fig leafs)

- “Private parts” don’t uncover except in most intimate setting (or medical setting!)
- Not comfortable seeing or talking about (except jokes)
- Now serious—many medical issues
- Realize and confront, not dehumanize—develop professional manner and language—starts with anatomy
Bony structure of the pelvis

**MAIN STRUCTURES**
- Hip bone (innominate, os coxae)--fusion of
  - Ilium ("hips")
  - Ischium ("rear")
  - Pubis (anterior midline)
- Sacrum and coccyx
- Acetabulum
- Femur--head, neck, greater trochanter

**HOLES**
- False and true pelvis (major, minor pelvis)
- Pelvic inlet, pelvic outlet
- Sacrotuberous ligament
- Sacrospinous ligament
- Greater, lesser sciatic foramen
- Obturator foramen
Greater sciatic foramen
sacrospinous ligament
Lesser sciatic foramen
ischial tuberosity
sacrotauberous ligament
Pelvic Wall Blood Vessels and Nerves
Male or Female
Muscles of the pelvis--attaching legs for upright posture

- Iliopsoas (from abdomen)
- Gluteus maximus (smaller in cat)
- Gluteus minimus (bigger in cat)
- Lateral rotators (not important in cat)
## Muscle tables--example

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORIGIN</th>
<th>INSERTION</th>
<th>ACTION</th>
<th>INNERV</th>
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<tbody>
<tr>
<td>Iliopsoas</td>
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<td>Lateral rotators</td>
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</tbody>
</table>
- Cavity is broad, shallow
- Pelvic inlet oval + outlet round
- Bones are lighter, thinner
- Pubic angle larger
- Coccyx more flexible, straighter
- Ischial tuberosities shorter,

- Cavity is narrow, deep
- Smaller inlet + outlet
- Bones heavier, thicker
- Pubic angle more acute
- Coccyx less flexible, more curved
- Ischial tuberosities longer, face more medially
The pelvic floor

**MAIN STRUCTURES**
- Ischial tuberosity
- Pubic symphysis
- Coccyx
- Sacrotuberous ligament
- Ischipubic ramus
- Perineal body
- Anus
- External urethral opening
- Vaginal opening

**MUSCULAR FLOOR AND SPHINCTERS**
- Transverse perineal m.
- Anal triangle and urogenital triangle
- Levator ani m.
- Urogenital diaphragm

**EXTERNAL GENITALIA**
- Clitoris or penis
- Ischiocavernosus m.
- Bulbospongiosus m. (and labia majorum)
M&M, Fig. 26.14
Blood supply to the pelvis and lower limb

- Aorta ends by splitting into right, left common iliac aa.
- Each common iliac splits into internal and external iliac aa.
- External iliac passes under inguinal ligament to lower limb.
- Internal iliac a. enters pelvis and supplies muscles, viscera.
- Umbilical a. comes off of internal iliac in M&M, Fig. 19.14.
Branches of internal iliac a.

**SOMATIC BRANCHES -- TO MUSCLES**
- Gluteal aa. (to gluteal mm.)
- Internal pudendal (to pelvic floor, external genitalia)

**VISCERAL BRANCHES**
- Vesicular aa. (to bladder)
- Uterine (to uterus)