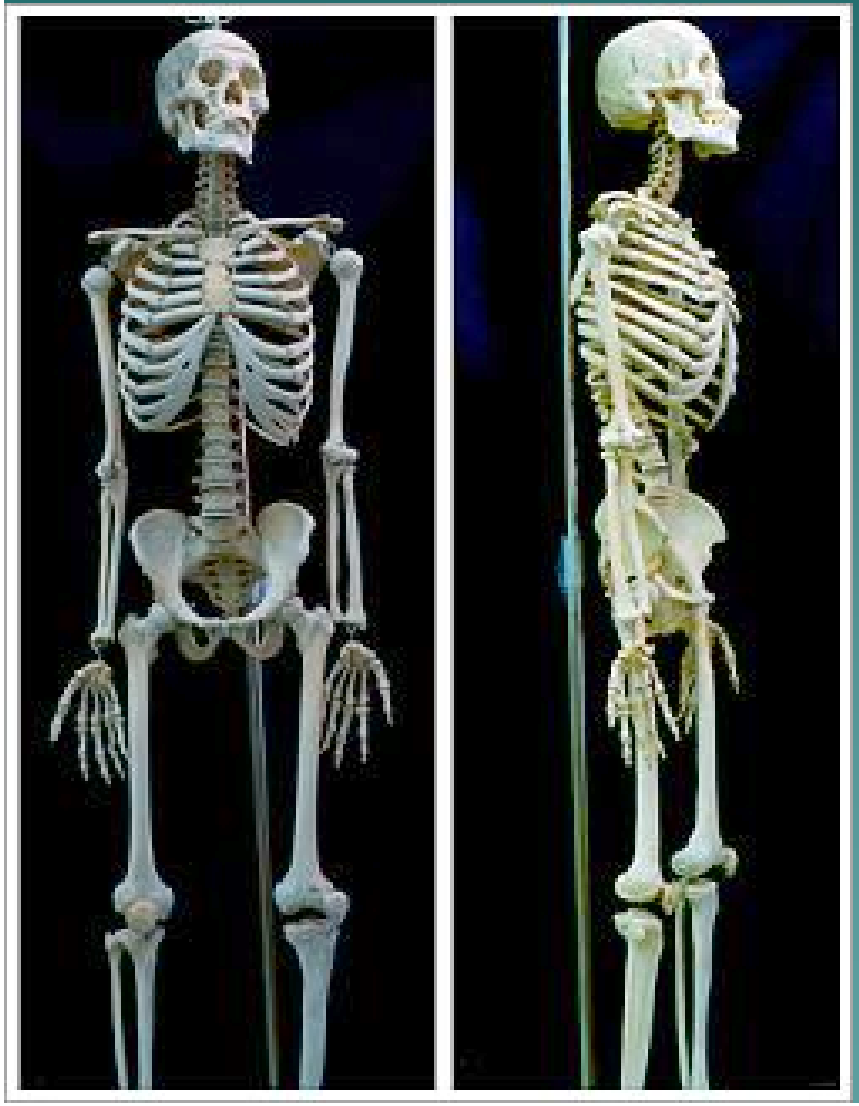
PELVIS I: BONES AND MUSCLES

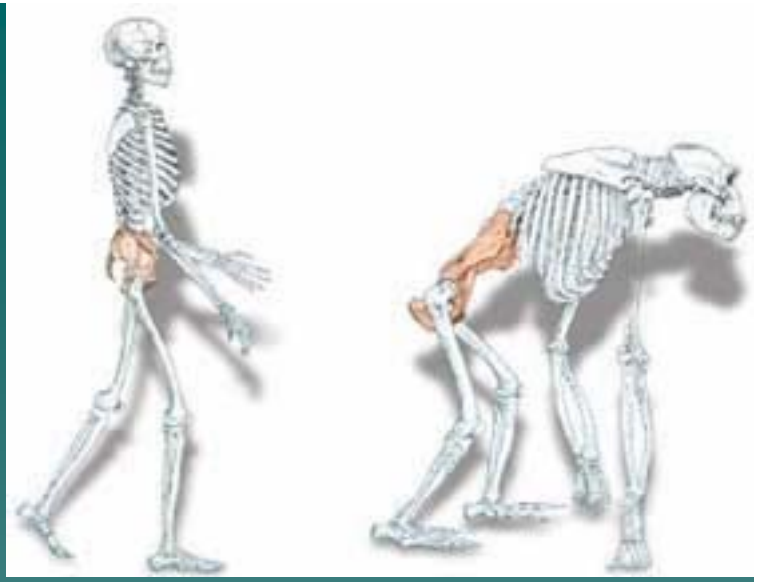
- Introduction--why is pelvis so hard?
- Bony structures of the pelvis
- Muscles of the pelvis--attaching the legs for upright living

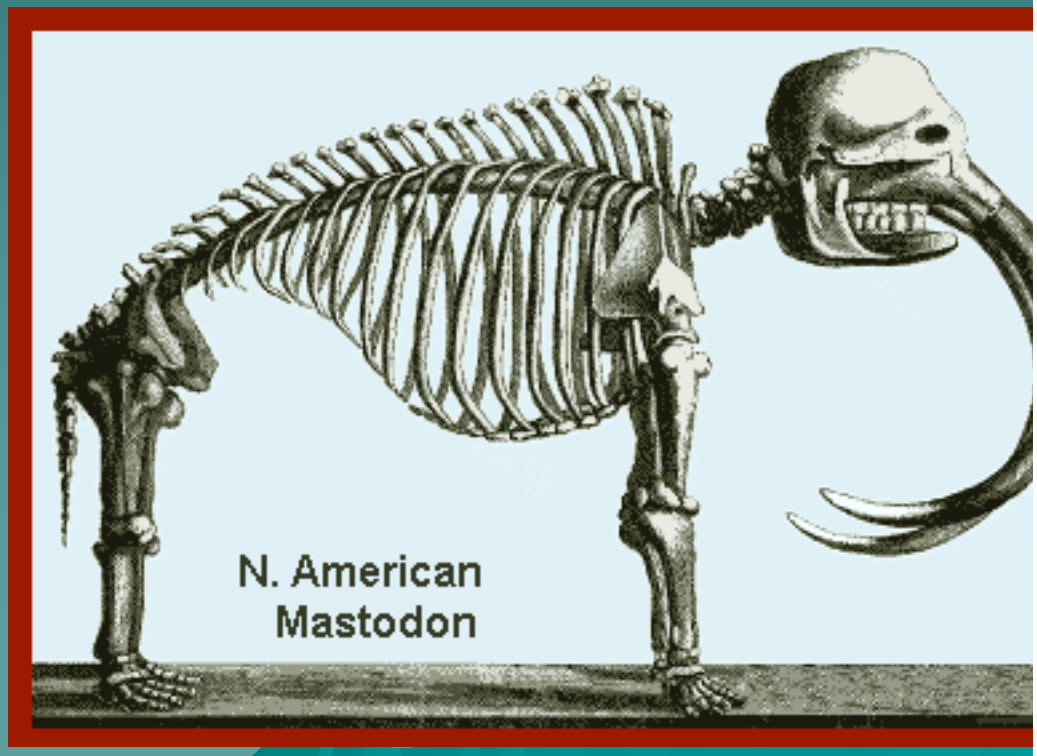
Why is the pelvis hard--#1 upright

- 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

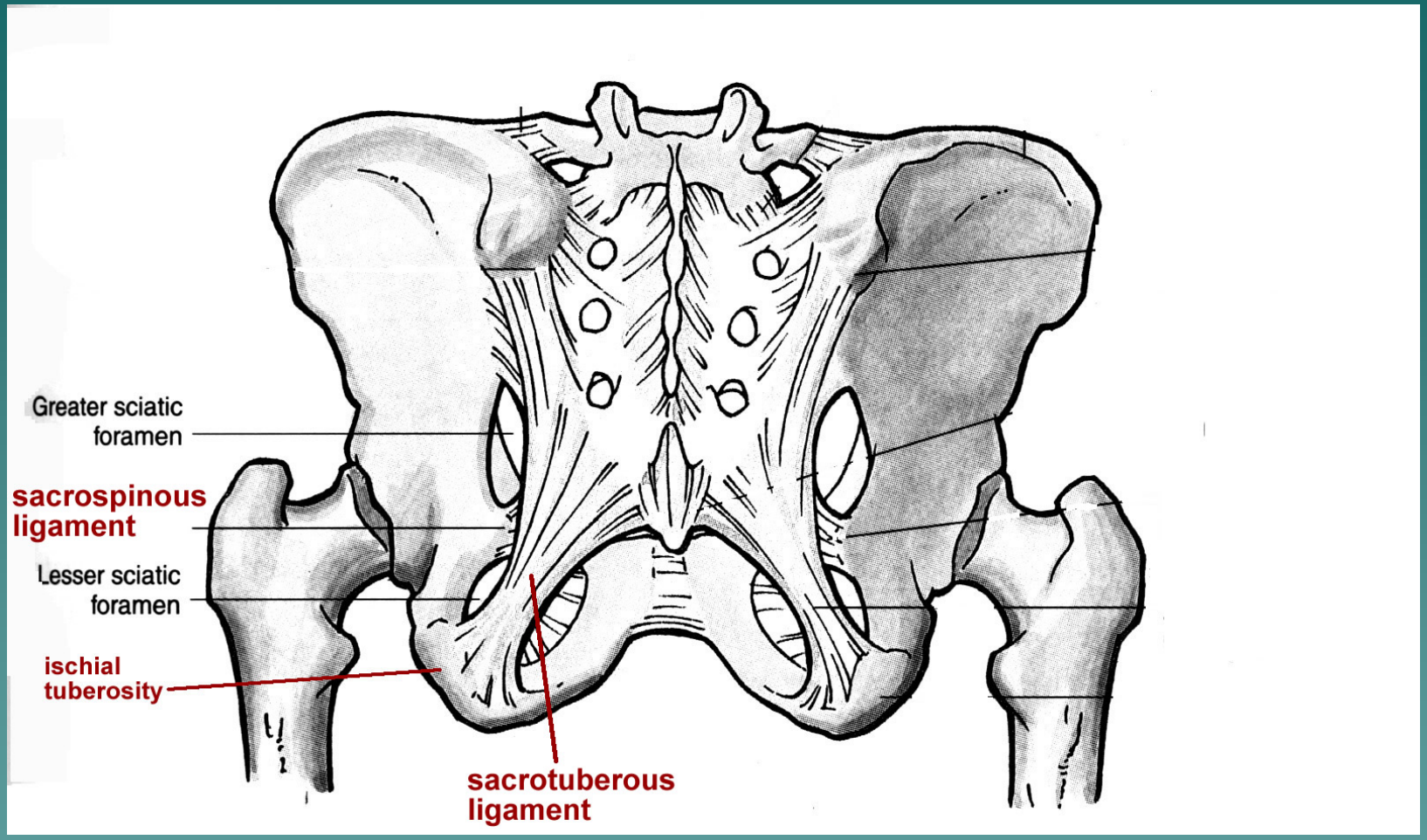
Bony structure of the pelvis

MAIN STRUCTURES

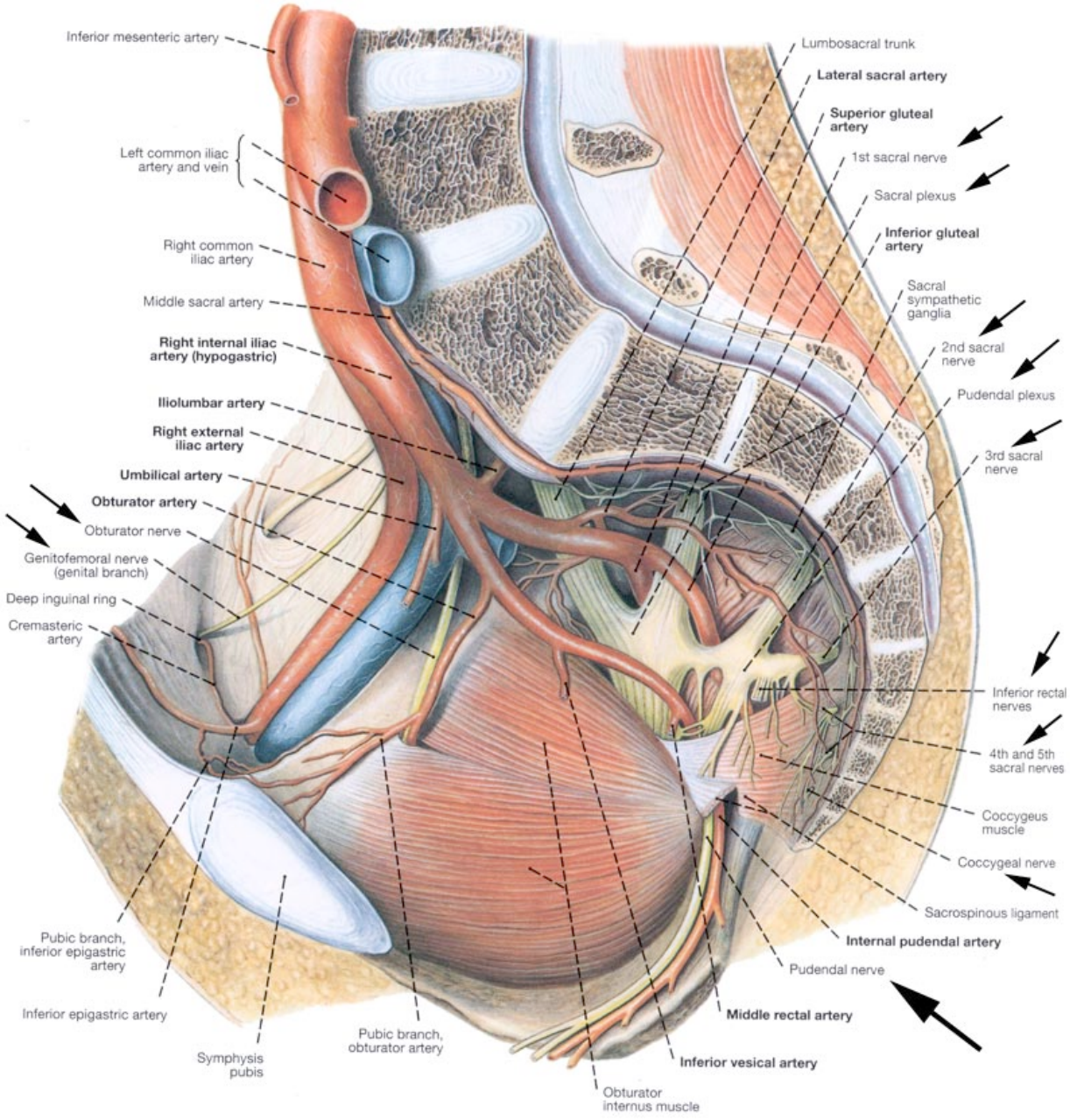
- Hip bone (innominate, os coxae)--fusion of
  - Ilium (“hips”)
  - Ischium (“rear”)
  - Pubis (anterior midline)
- Sacrum and coccyx
- Acetabulum
- Femur--head, neck, greater trochanter

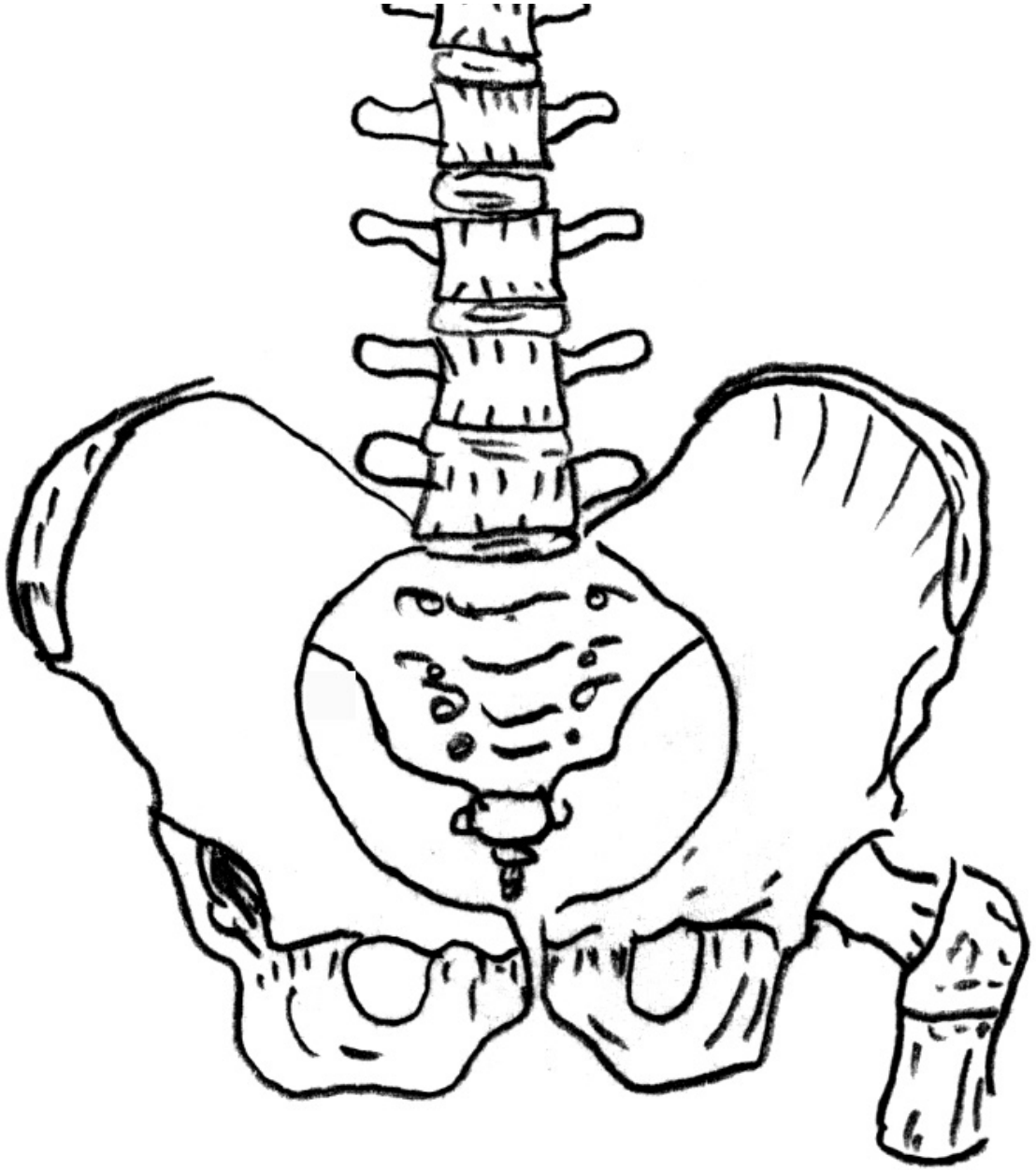
HOLES

- 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
sacrotuberous ligament

Pelvic Wall Blood Vessels and Nerves Male or Female





Muscles of the pelvis--attaching legs for upright posture

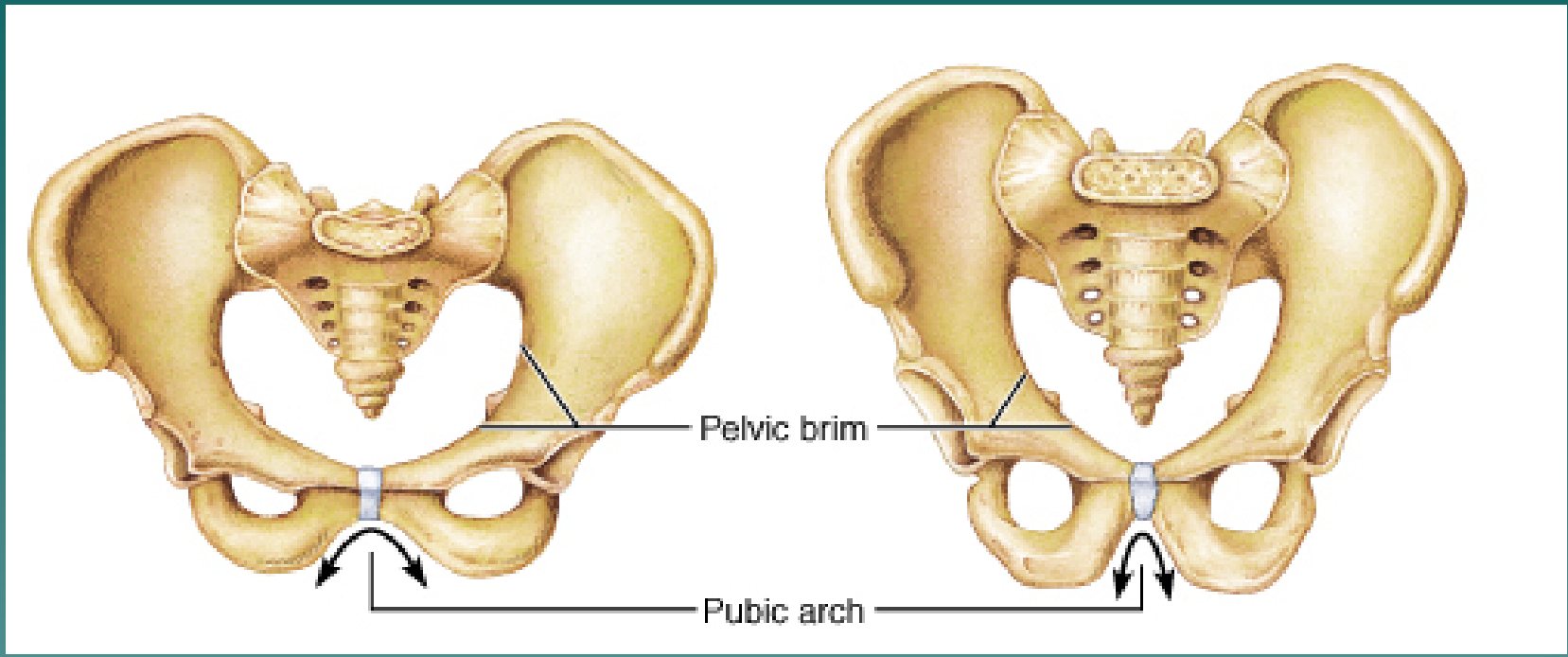
- Iliopsoas (from abdomen)
- Gluteus maximus (smaller in cat)
- Gluteus minimus (bigger in cat)
- Lateral rotators (not important in cat)

Muscle tables--example

NAME	ORIGIN	INSERTION	ACTION	INNERV.
Iliopsoas				
Gluteus maximus				
Gluteus minimus				
Lateral rotators				

Female

Male



- 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

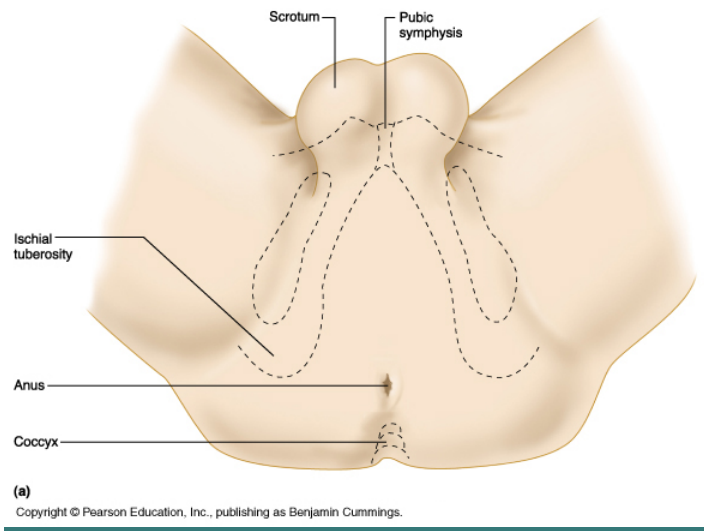
- Ischial tuberosity
- Pubic symphysis
- Coccyx
- Sacrotuberous ligament
- Ischipubic ramus
- Perineal body
- Anus
- External urethral opening
- Vaginal opening

MUSCULAR FLOOR AND SPHINCHTERS

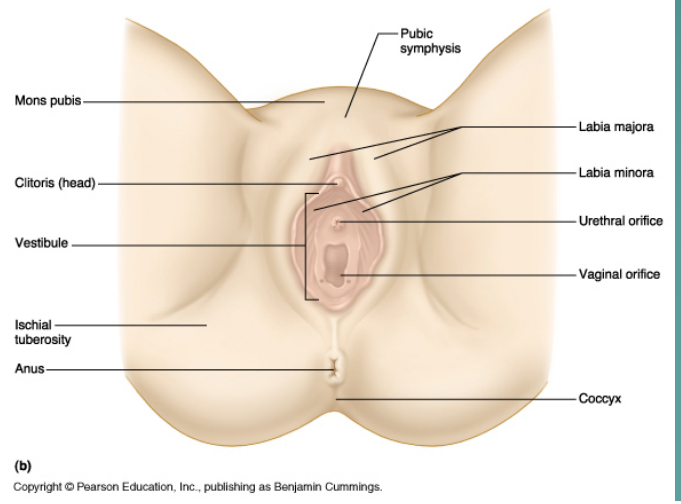
- transverse perineal m.
- Anal triangle and urogentical triangle
- Levator ani m.
- Urogenital diaphragm

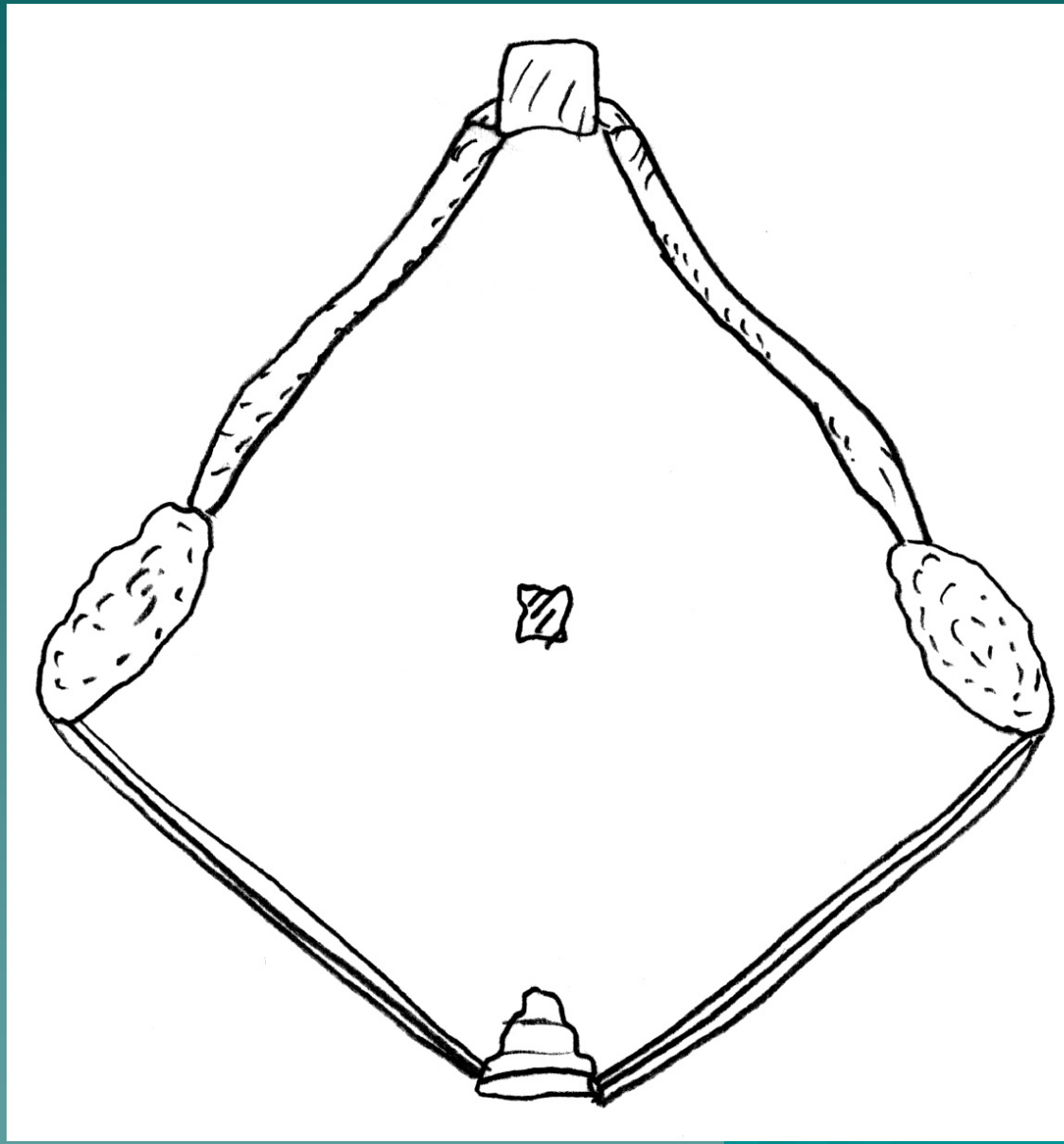
EXTERNAL GENITALIA

- Clitoris or penis
- Ischiocavernosus m.
- Bulbospongiosus m. (and labia majorum)



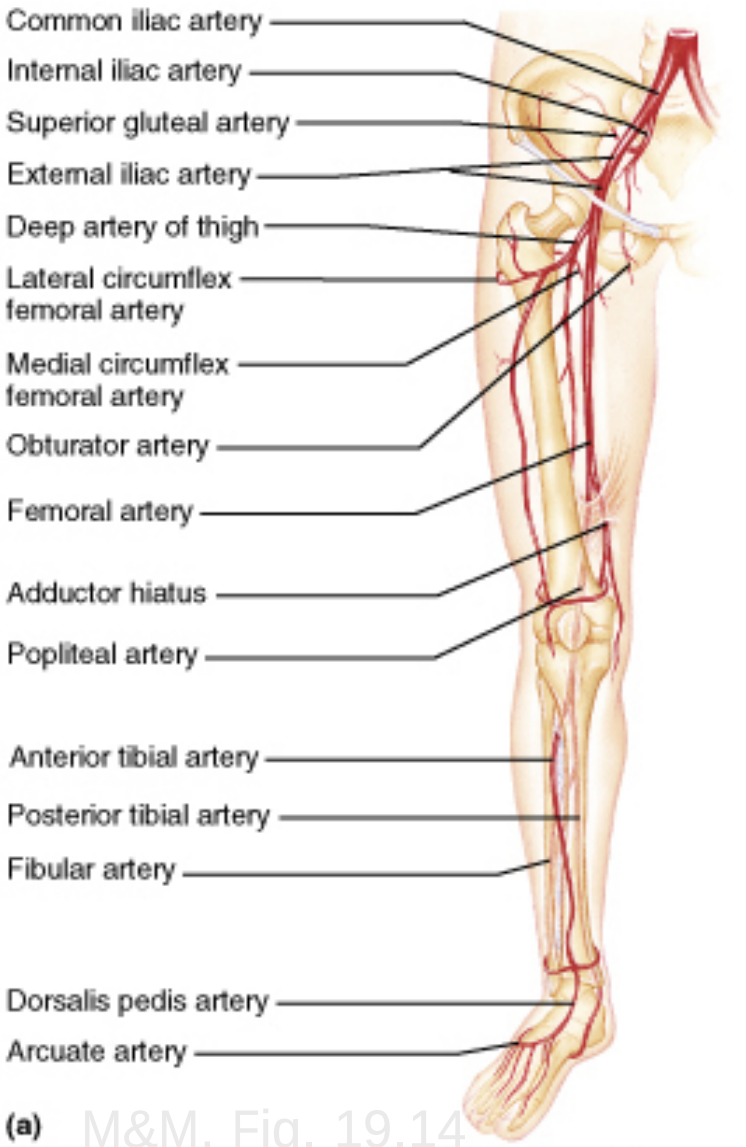
M&M, Fig. 26.14





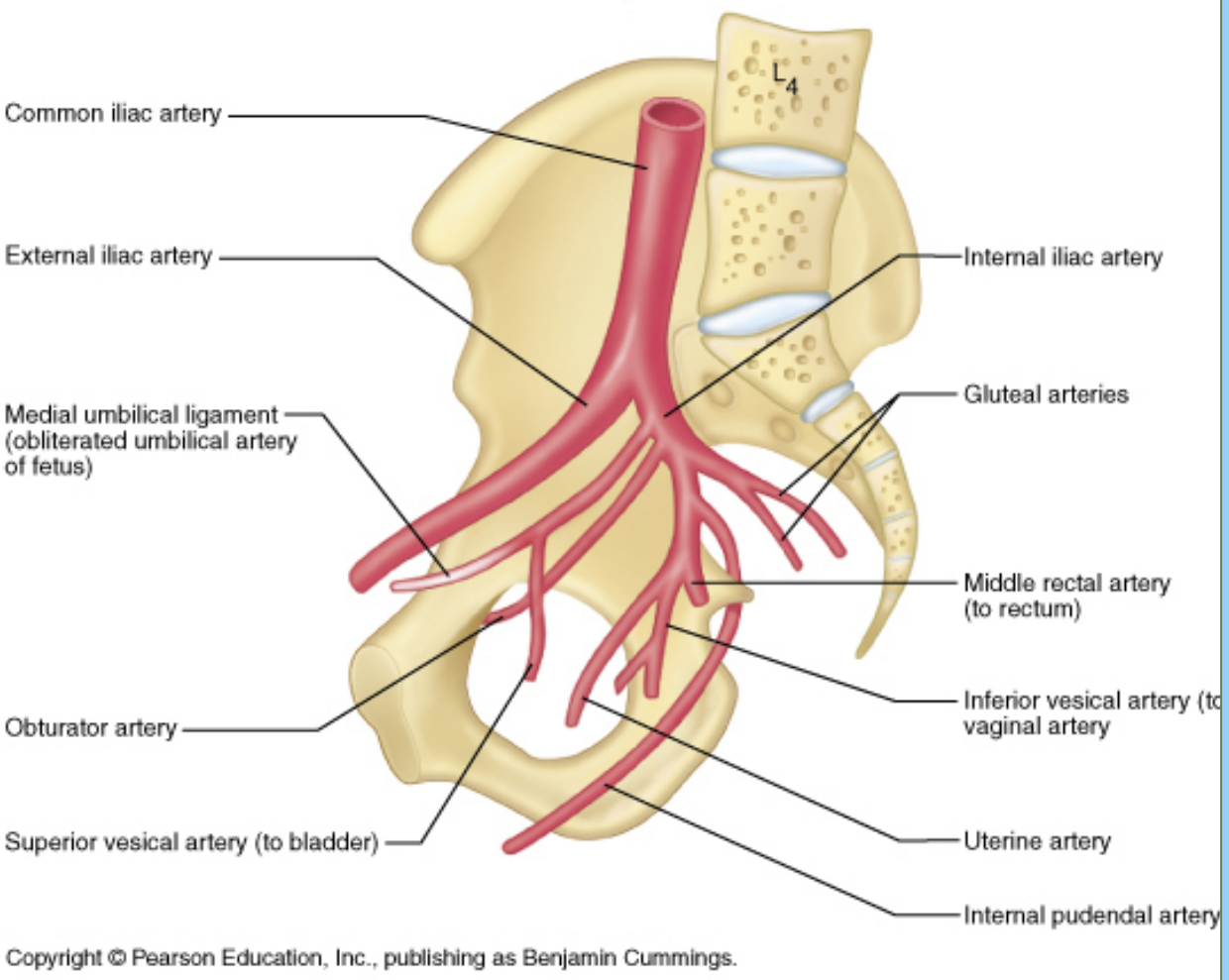
Blood supply to the pelvis and lower limb

- 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.



M&M, Fig. 19.15

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)