The Hip Joint

HIP JOINT 1

Ball and socket
Synovial
Ligamentum teres in fovea

ANGLE OF NECK
ON SHAFT

CHILD  MALE  FEMALE
160°  120°  100°
HIP JOINT 5

ANTERIOR

LIGAMENTS

POSTERIOR

ISCHIOFEMORAL

Weak, from posteroinferior margin of acetabulum

PUBOFEMORAL

Iliopectineal eminence & superior pubic ramus

Rectus femoris

ILIOFEMORAL

Strong ++
From low on anterior inferior iliac spine to intertrochanteric line
Y shaped (triangular ligament of Bigelow)
Note on Psoas/iliacus: Despite some opinions it is probable from recent experiments that these muscles act purely as flexors of the hip and not rotators. However, in the presence of a fractured neck of femur the line of axis changes and they produce external rotation.

RIGHT GLUTEAL REGION

Gluteus maximus & inferior gluteal nerve (L5,S1,2) & vessels

Gluteus medius

Gluteus minimis

Tensor fasciae latae

Superior gluteal artery & nerve (L4,5,S1)

Sacrotuberous ligament

Internal pudendal artery & nerve (S2,3,4)

Ischial tuberosity

Semitendinosus

Semimembranosus

Gracilis

Piriformis

Biceps femoris

Greater trochanter

Cutaneous nerves

Cut lower end of gluteus maximus

Sciatic nerve

Adductor magnus

1  Gemellus superior, obturator internus, gemellus inferior
2  Obturator externus
3  Quadratus femoris

HIP JOINT 6

HIP MOVEMENTS

**Abduction**
Gluteus medius, gluteus minimus, tensor fasciae latae
(+/- piriformis)

**Adduction**
Adductors brevis, longus, magnus (pectineus, gracilis, iliopsoas)

**Flexion**
Psoas, iliacus, rectus femoris, sartorius, (pectineus, tensor fasciae latae). Note soft tissue limitation

**Extension**
Gluteus maximus, semitendinosus, semimembranosus, adductor magnus, long head biceps femoris. Note capsule & ligaments limitation

**External rotation**
Gluteus maximus, (piriformis, obturators internus & externus, gemelli, quadratus femoris

**Internal rotation**
Anterior fibres of gluteus medius & minimis
**BURSAE**

- Psoas may communicate into hip joint
- Trochanteric
- Ischial

**NERVES**

- Femoral (because of rectus femoris)
- Sciatic (because of quadratus femoris)
- Obturator - posterior division

**RELATIONS**
HIP JOINT 3

CAPSULE

Strong ++
Anterior: Covers whole neck to intertrochanteric line
Posterior: Covers neck half way to intertrochanteric crest
Reflects: Back as retinaculum which carries the blood supply

1. Superior gluteal to trochanteric anastomosis only
2. Inferior gluteal
6. Art to head of femur

Trochanteric anastomosis

HIP ARTERIAL ANASTOMOSES

3,4. Lateral & medial circumflex femoral off profunda femoris supplying both anastomoses
5. Ascending branch of 1st perforator to cruciate anastomosis only

2 ANASTOMOSES
Trochanteric (at greater trochanter):
Descending superior gluteal
Inferior gluteal
Ascending branches of medial & lateral circumflex femoral

Cruciate (at lesser trochanter):
Transverse branches of medial & lateral circumflex femoral
Descending branch of inferior gluteal
Ascending branch of 1st perforating artery

Mnemonic:
Upper anastomosis does not receive branch from lowest artery,
lower anastomosis does not receive branch from highest artery.
BLOOD SUPPLY TO HEAD AND NECK OF FEMUR

Blood supply to head and neck of femur

Sites of femoral neck fracture

Loss of blood supply to head of femur with a subcapital fracture

Intact blood supply to head of femur in pertrochanteric fracture