

OSTEONECROSIS (AVASCULAR NECROSIS | ASEPTIC NECROSIS)

BONE DEATH
FROM A TRAUMATIC OR NON-TRAUMATIC ORIGIN

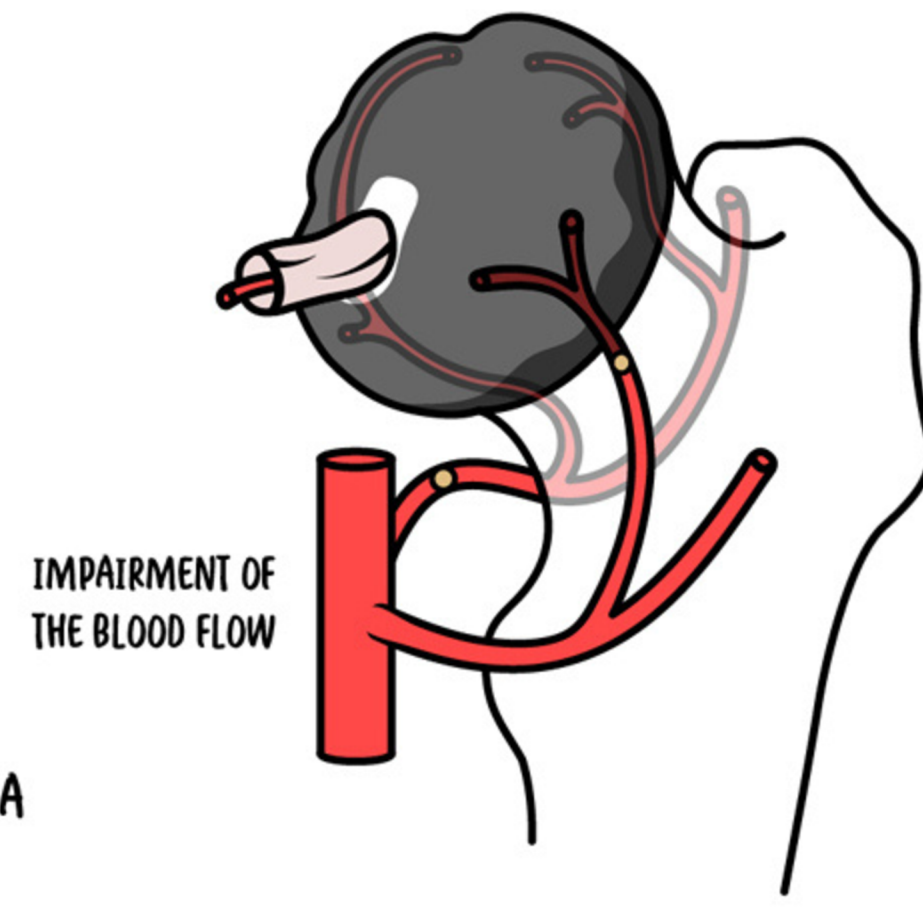
OCCURS IN
HIP JOINT (FEMORAL HEAD), SHOULDERS, KNEE AND ANKLE



NECROSIS OF THE FEMORAL HEAD
IS A LATE COMPLICATION OF HIP TRAUMA

1830, JEAN CRUVEILHIER

20TH CENTURY
NON-TRAUMATIC FACTORS --> OSTEONECROSIS
(CHRONIC ALCOHOL AND STEROID USE)



ANATOMY

HIP IS A BALL AND SOCKET JOINT

FOVEA FOR THE LIGAMENT
OF THE FEMORAL HEAD

PELVIS BONE

ACETABULUM
(SOCKET)

HIP JOINT PELVIC GIRDLE

LOWER LIMB

HEAD OF THE FEMUR (BALL)
COVERED WITH ARTICULAR CARTILAGE

NON TRAUMATIC CAUSES

ADULTS < 50 YEARS
GENETIC PREDISPOSITIONS

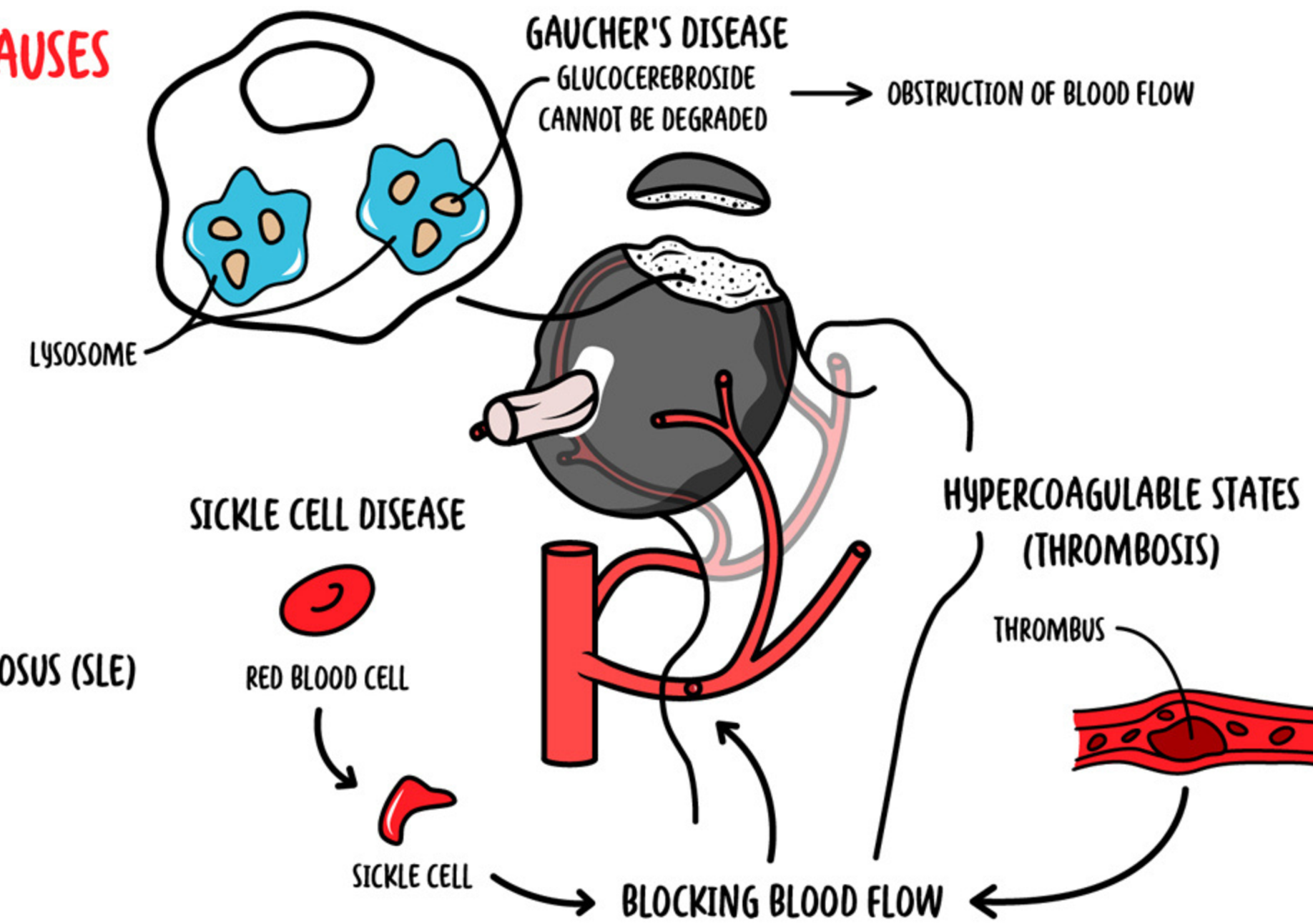
ISCHAEMIA

STERIODS

ALCOHOL

SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

TRANSPLANT PATIENT



TRAUMATIC CAUSES

ISCHAEMIA



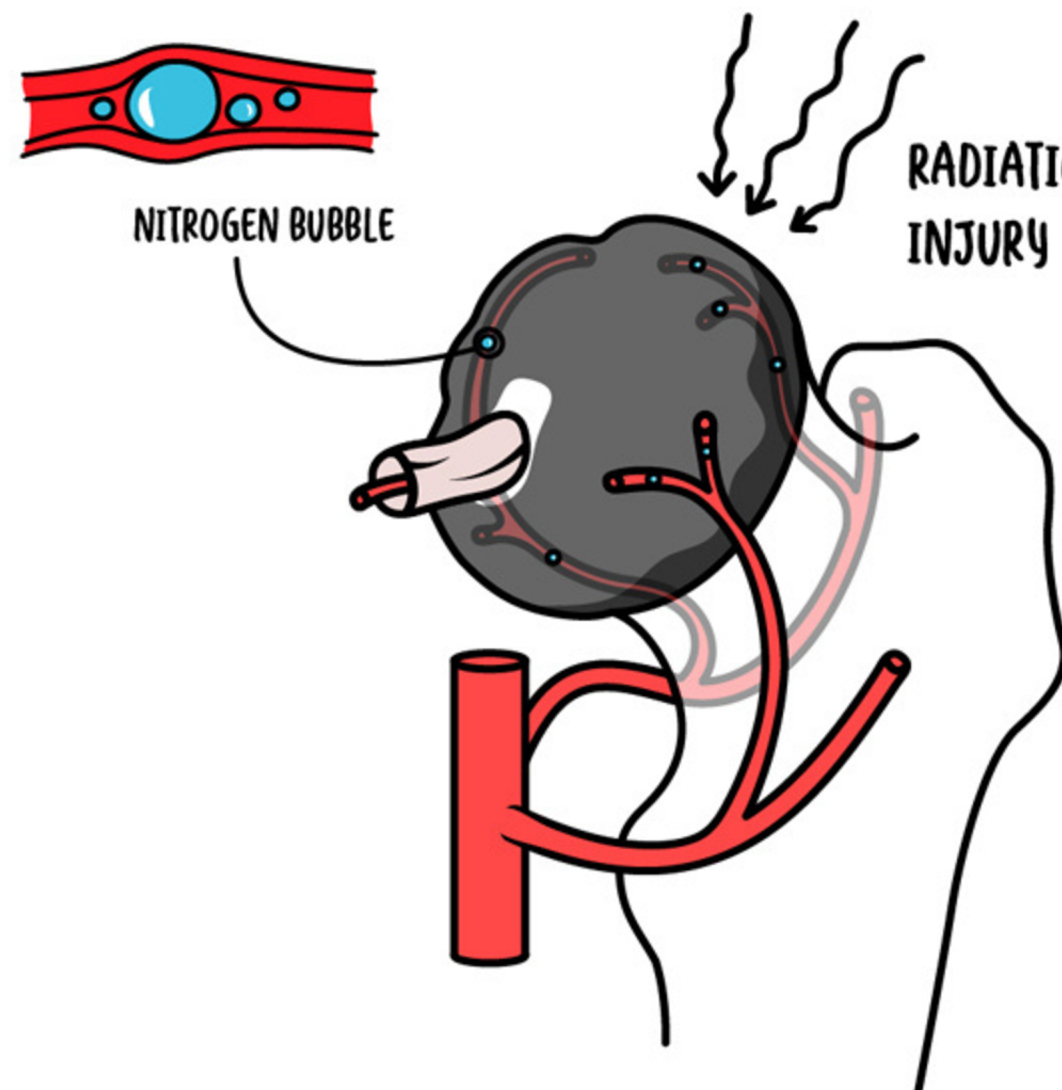
FEMORAL NECK FRACTURES OR DISLOCATIONS

CAISSON DISEASE



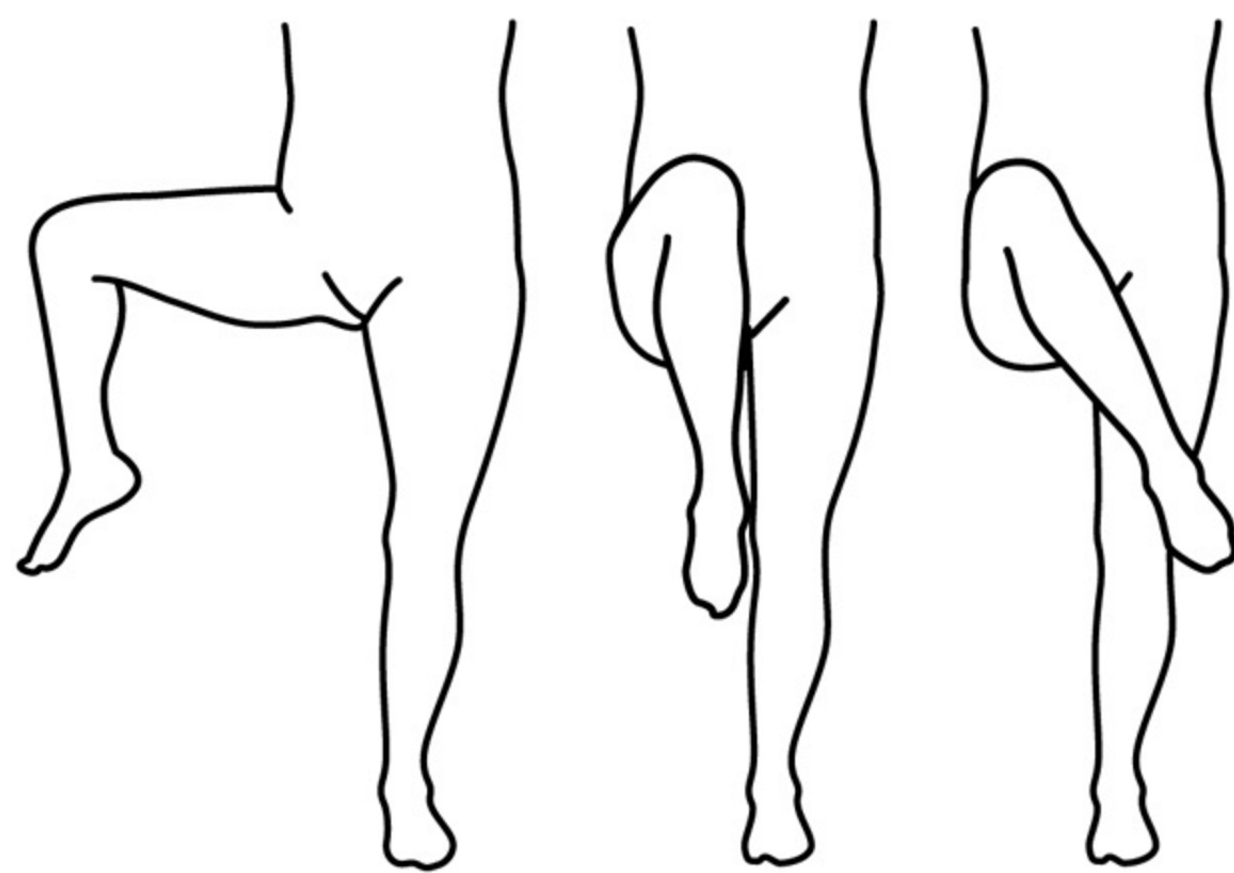
NITROGEN BUBBLE

RADIATION
INJURY

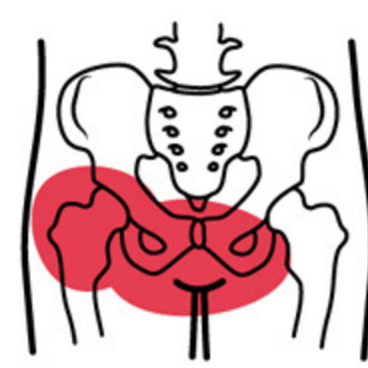


EARLY DISEASE (PRE COLLAPSE)

HIP JOINT HAS GOOD RANGE OF MOTION



MOVING THE HIP JOINT IS PAINFUL



DULL ACHES
OR THROBBING PAIN

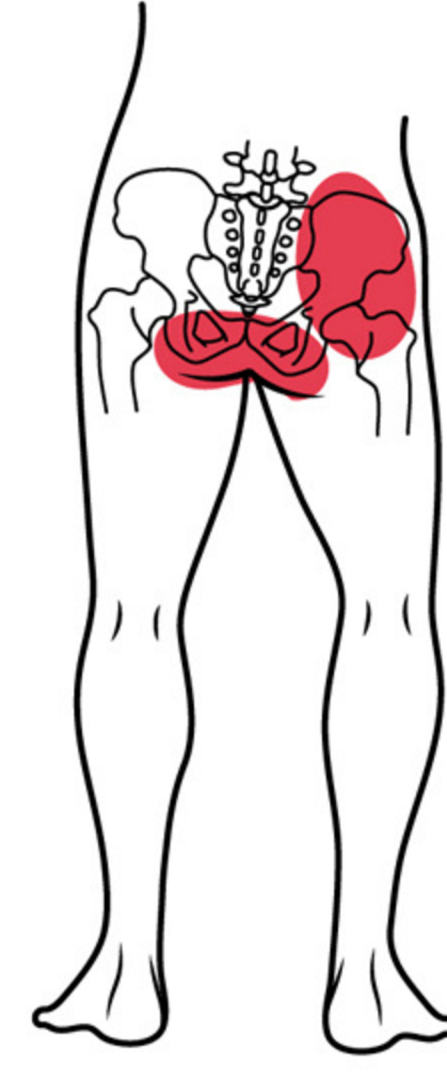
DIFFICULTY STANDING
PUT WEIGHT ON THE AFFECTED HIP



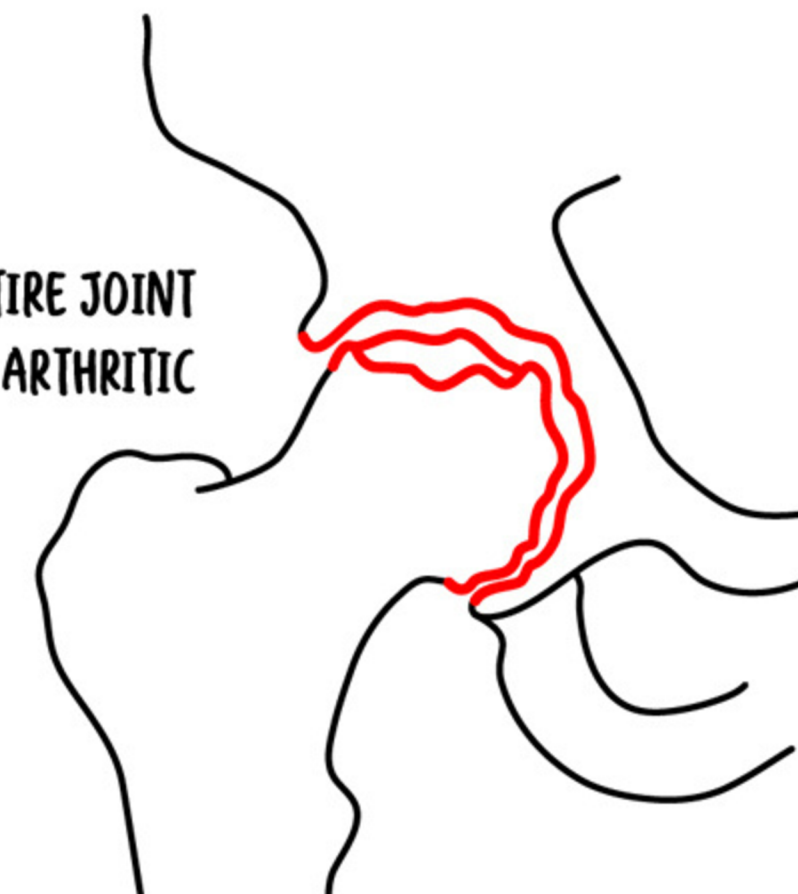
LATE DISEASE (POST COLLAPSE)

HIP AND GROIN PAIN
WITH ACTIVITY AND REST

REDUCED RANGE OF MOTION
AND STIFFNESS



ENTIRE JOINT
BECOMES ARTHRITIC



Armando H. Faigl

PATHOPHYSIOLOGY

TRAUMATIC CAUSES

NON TRAUMATIC CAUSES

ISCHAEMIA

DISRUPTION OR COMPROMISED BLOOD FLOW AS THE INITIATION OF BONE DEATH

FICAT AND ARLET CLASSIFICATION

IT USES PLAIN RADIOGRAPHS, MRI, AND CLINICAL FEATURES

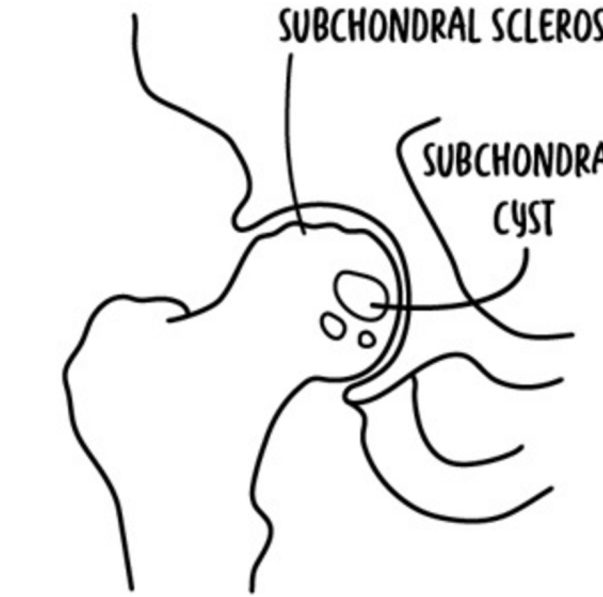
PRE COLLAPSE OF FEMORAL HEAD

POST COLLAPSE OF FEMORAL HEAD



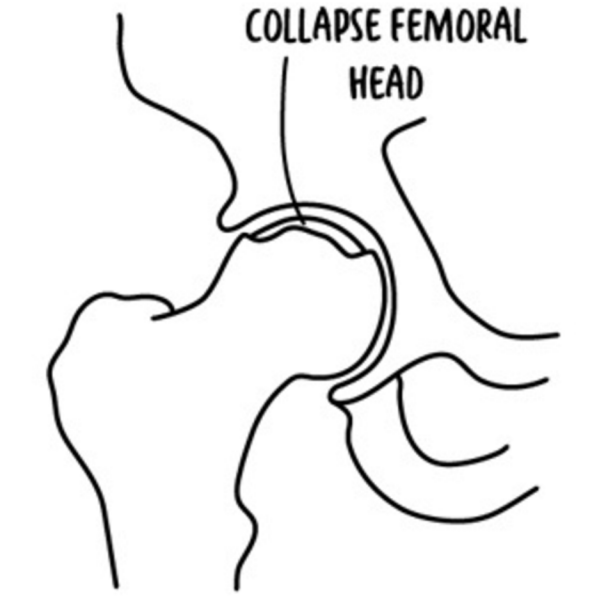
STAGE I

NORMAL OR
MINOR OSTEOPENIA



STAGE II

SCLECTIC OR
CYSTIC LESIONS



STAGE III

EVENTUAL CORTICAL
COLLAPSE



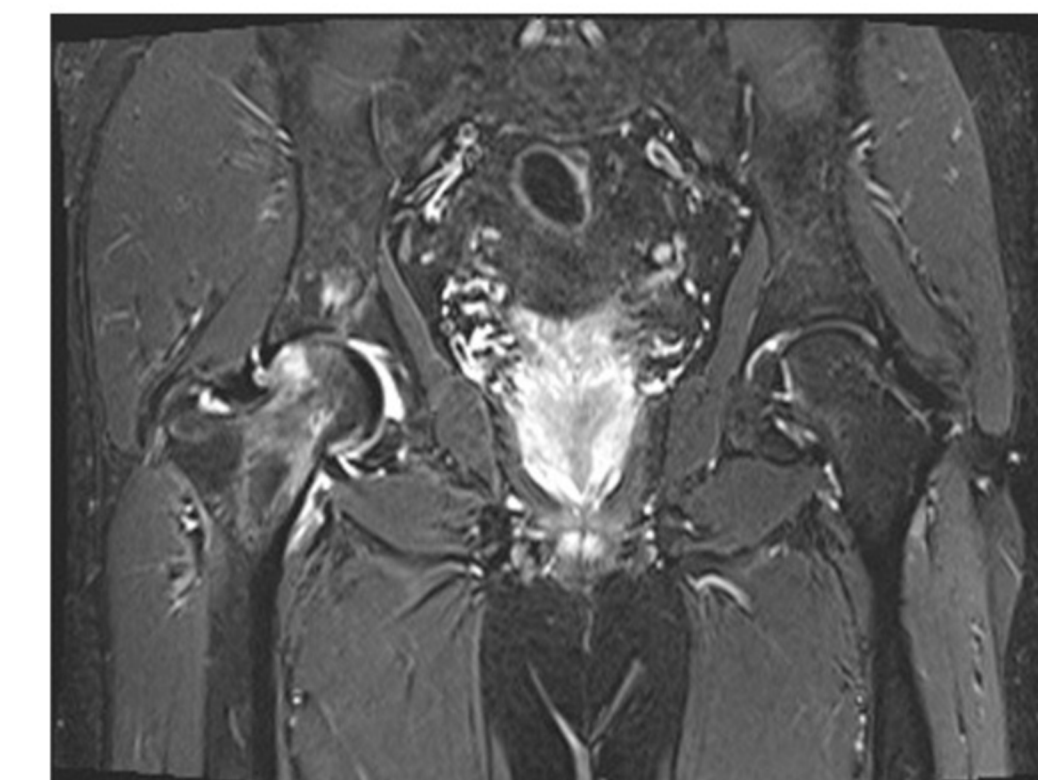
STAGE IV

END-STAGE WITH EVIDENCE
OF SECONDARY DEGENERATIVE CHANGE

INVESTIGATIONS

MRI - GOLD STANDARD

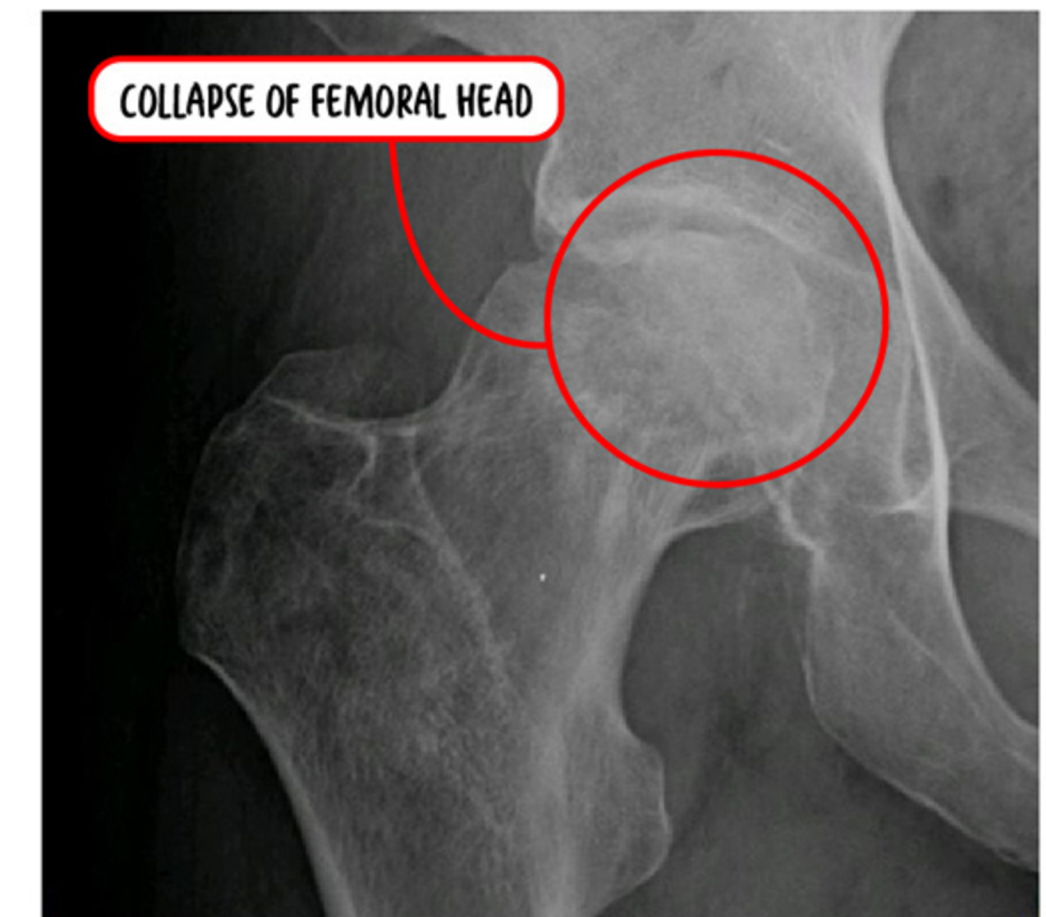
EARLY OSTEONECROSIS
DIFFERENTIAL DIAGNOSIS



CASE COURTESY OF UTKARSH KABRA, RADIOPAEDIA. ORG

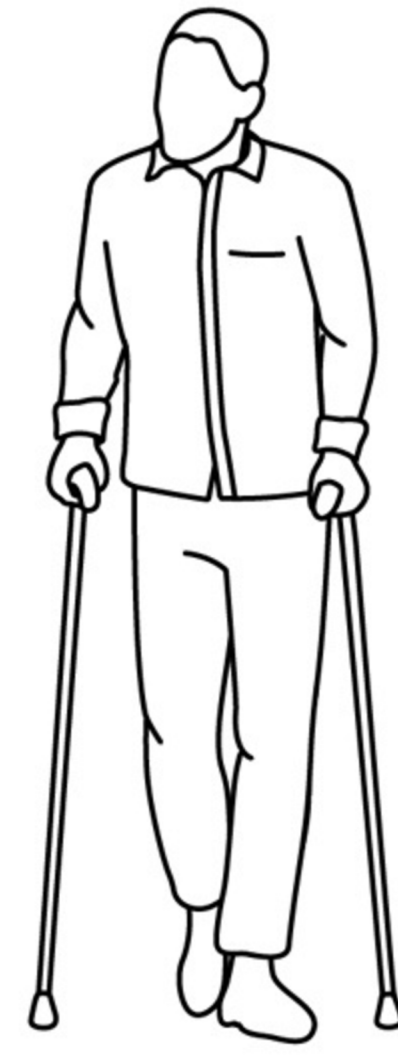
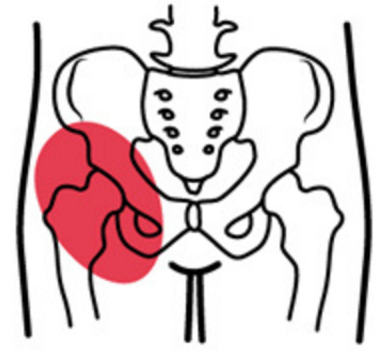
PLAIN RADIOGRAPHS

MODERATE/LATE DISEASE



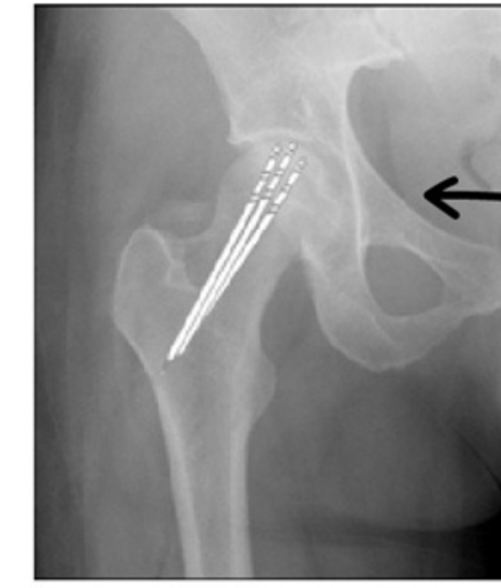
TREATMENT

NON SURGICAL
LIFESTYLE CHANGES
ANALGESIA

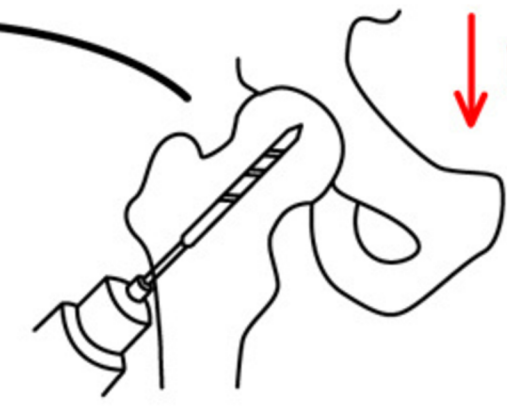


SURGERY

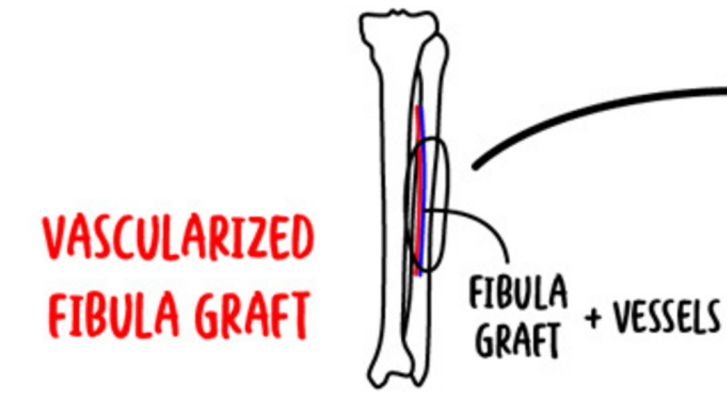
EARLY DISEASE - HIP PRESERVATION SURGERY



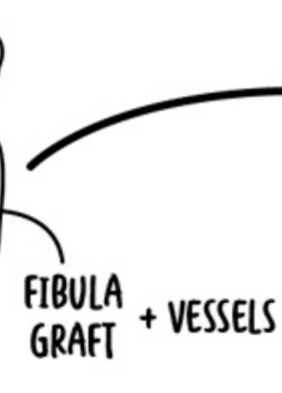
CORE DECOMPRESSION



PRESSURE



**VASCULARIZED
FIBULA GRAFT**



**ARTERY AND VEIN
ARE REATTACHED**

TREATMENT

LATE DISEASE
TOTAL HIP REPLACEMENT



Armando H. Faigl