HIP EXAMINATION

Bone School @ Bangalore

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BANGALORE

HISTORY
SYMPTOMS / CHIEF COMPLAINTS

- PAIN
- SWELLING
- DEFORMITIES
- LIMP
- STIFFNESS

HISTORY

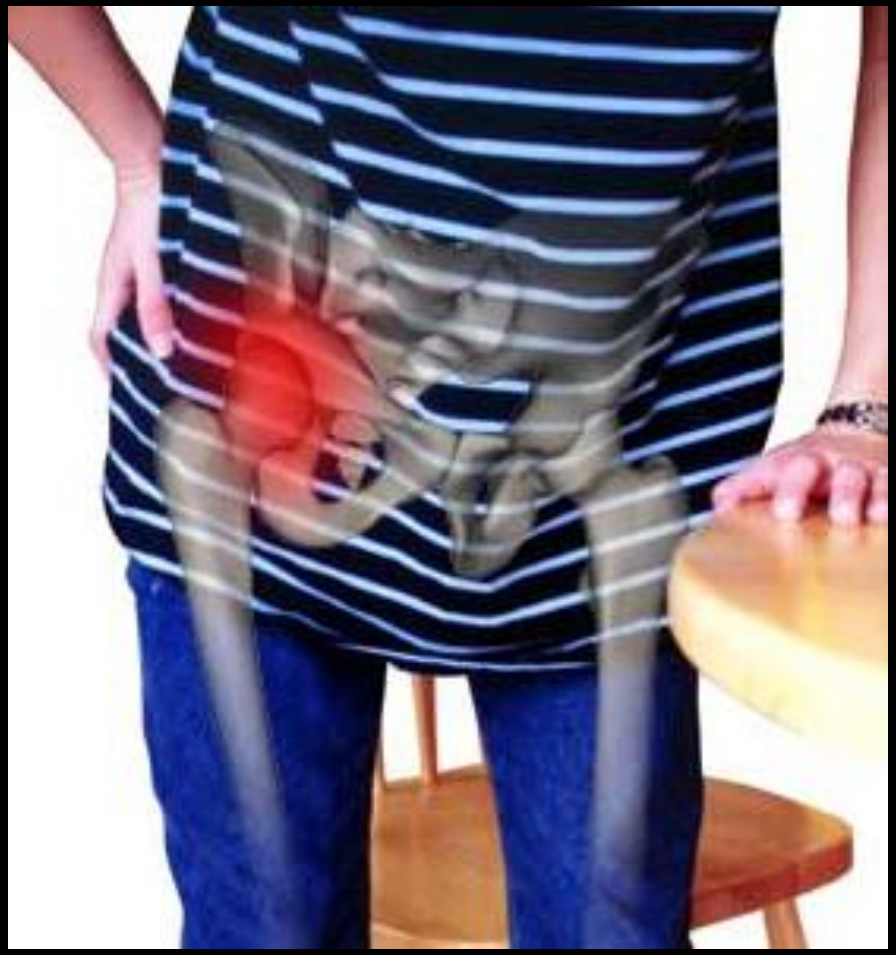
- CHIEF COMPLAINTS
  - DURATTION
  - ONSET
  - PROGRESSION OF THE SYMPTOMS
- PERTAINING TO VARIOUS AETIOLOGY
- CONSTITUTIONAL SYMPTOMS
- COMORBIDITIES
- HABITS
- TREATMENT TAKEN
- OCCUPATION AND RECREATIONAL DEMANDS
- EFFECT ON DAILY ACTIVITIES (ADL)

PAIN

- DURATION
- ONSET
- PROGRESSION
- GRADES OF PAIN
- SITE AND NATURE
- CONTINUITY
- REST PAIN
- NIGHT PAIN

(NOCTURNAL PAIN)

- NIGHT CRY



SWELLING , DEFORMITY , STIFFNES

- DURATION
- ONSET
- PROGRESSION – STATIONARY
  INCREASING
  REGRESSING

LIMP

- DURATION
- ONSET
- PROGRESSION OF LIMP (GRADES)
    - LIMP WITHOUT AID
    - LIMP WITH AID
    - WHEEL CHAIR BOUND
    - BED RIDDEN

SUMMARY OF HISTORY

- ACUTE / CHRONIC
- PROGRESSIVE / NON PROGRESSIVE / REGRESSIVE
- MONOARTICULAR / POLYARTICULAR
- POSSIBLE AETIOLOGY (TRAUMATIC/INFECTIVE/INFLAMMATORY/NEO PLASTIC/DEGENERATIVE/ METABOLIC ETC)
- PATIENT'S DEMAND / EXPECTATION

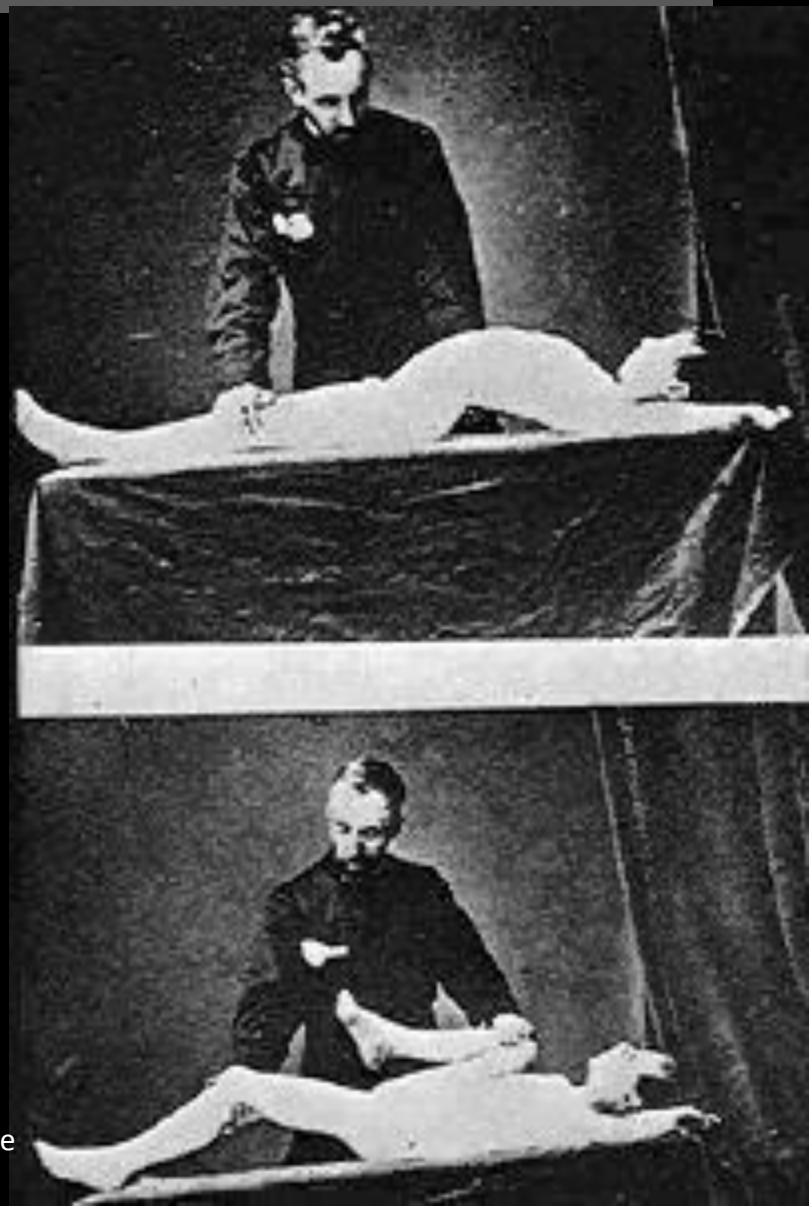
HIP EXAMINATION

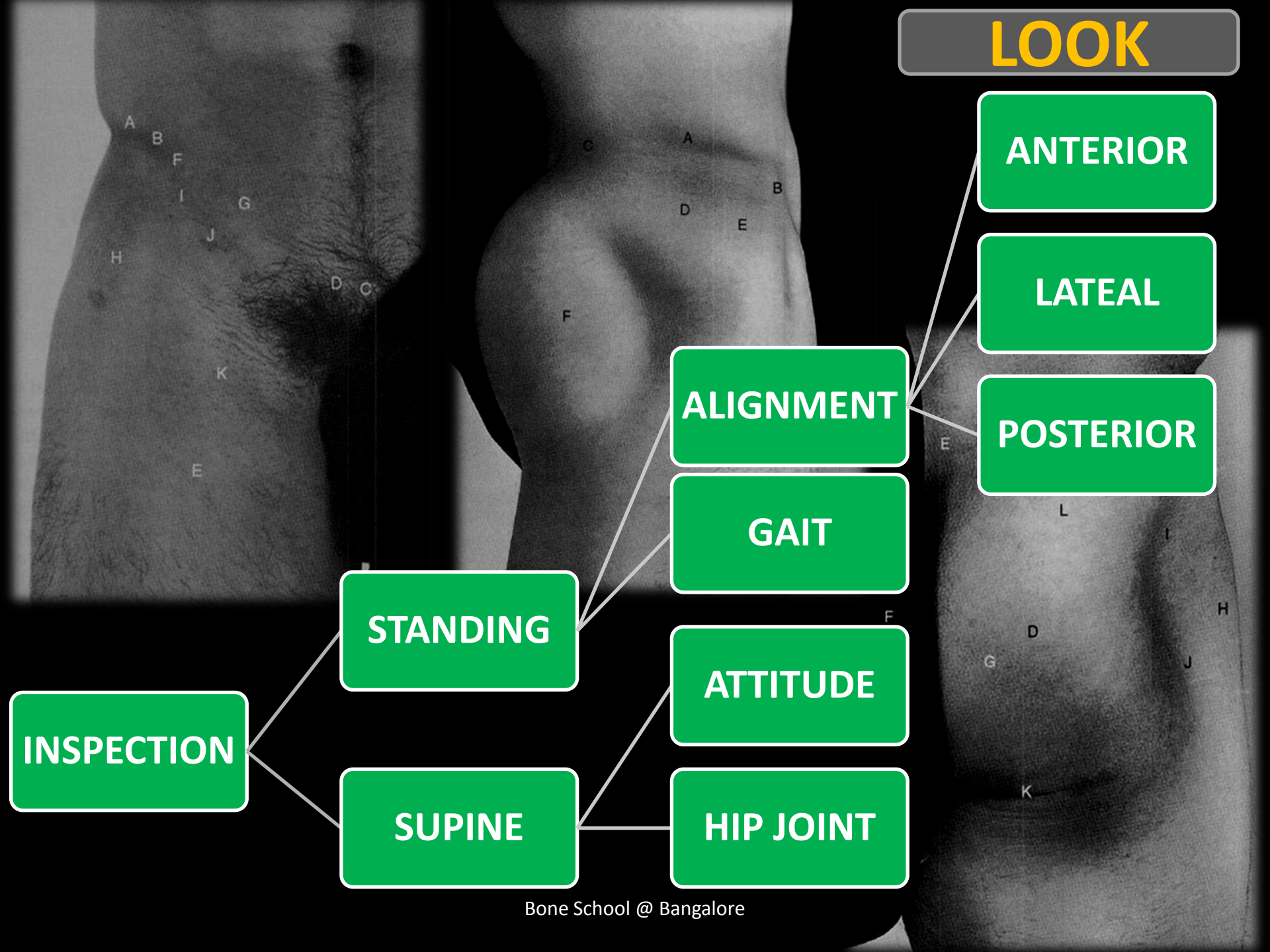
LOOK

FEEL

MOVE

MEASURE




LOOK
ANTERIOR
LATEAL
POSTERIOR
ALIGNMENT
GAIT
STANDING
ATTITUDE
INSPECTION
SUPINE
HIP JOINT

STANDING POSITION : ALIGNMENT

FROM THE FRONT

SHOULDER LEVEL

PELVIC TILT/OBLIQUITY

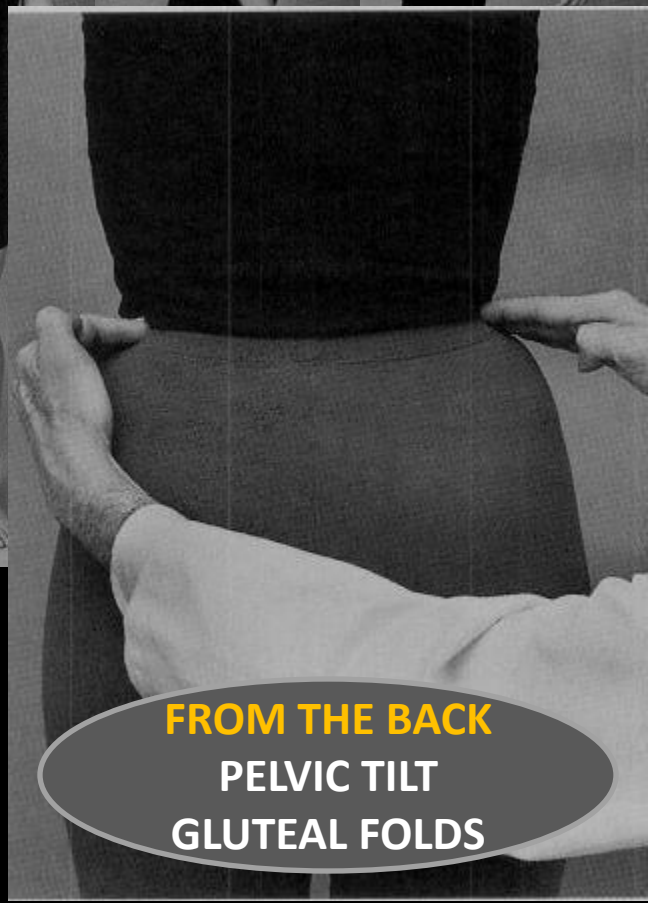
FROM THE SIDE:

SPINE

PELVIC TILT(FLX/EXT)

HIP (FLX/EXT)

KNEE (FLX/RECURVATM)



FROM THE BACK

PELVIC TILT

GLUTEAL FOLDS

GAIT

LIMB

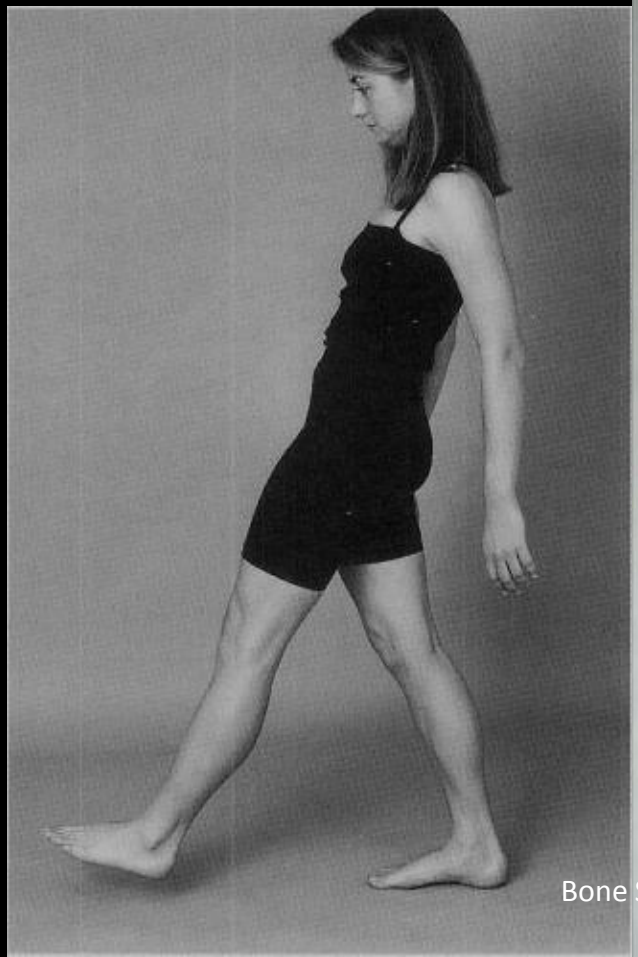
TRUNK

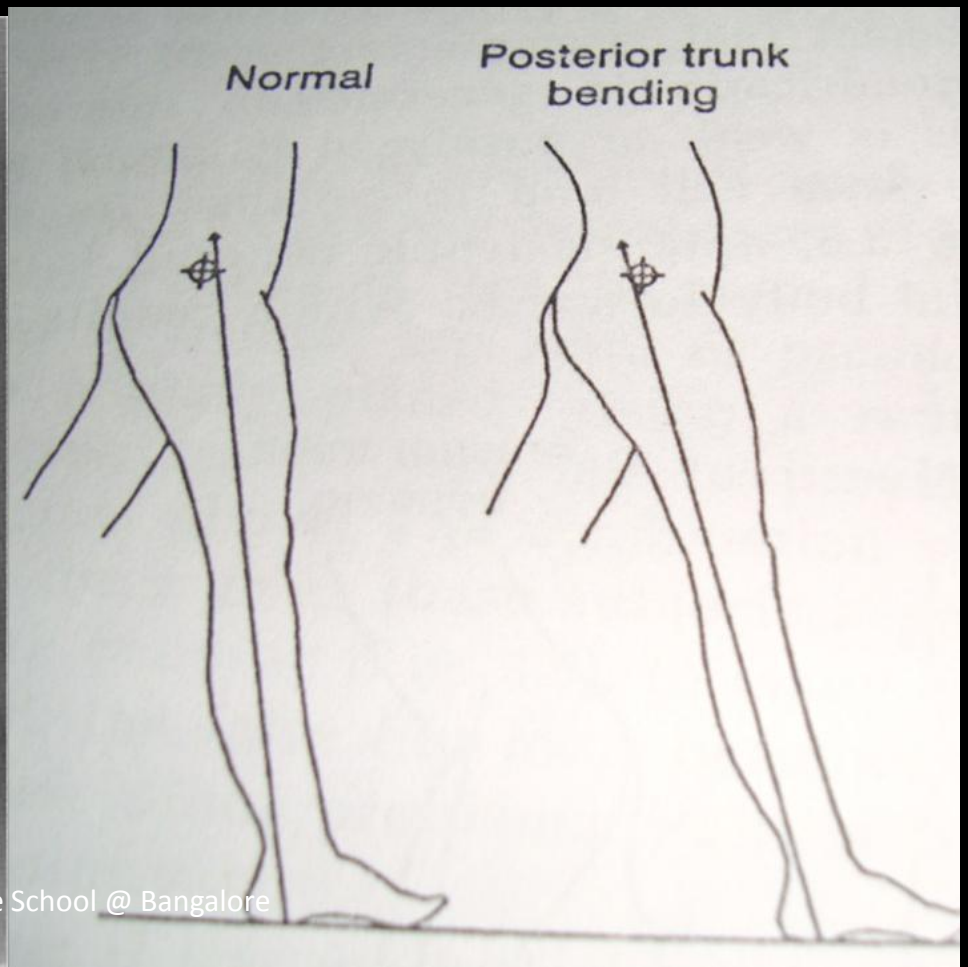
GAIT

POSTRIOR TRUNK BENDING (GLUTEAL LURCH)

Causes : gluteus maximus weakness

Mechanism : to augment hip extension at terminal stance to accelerate forward

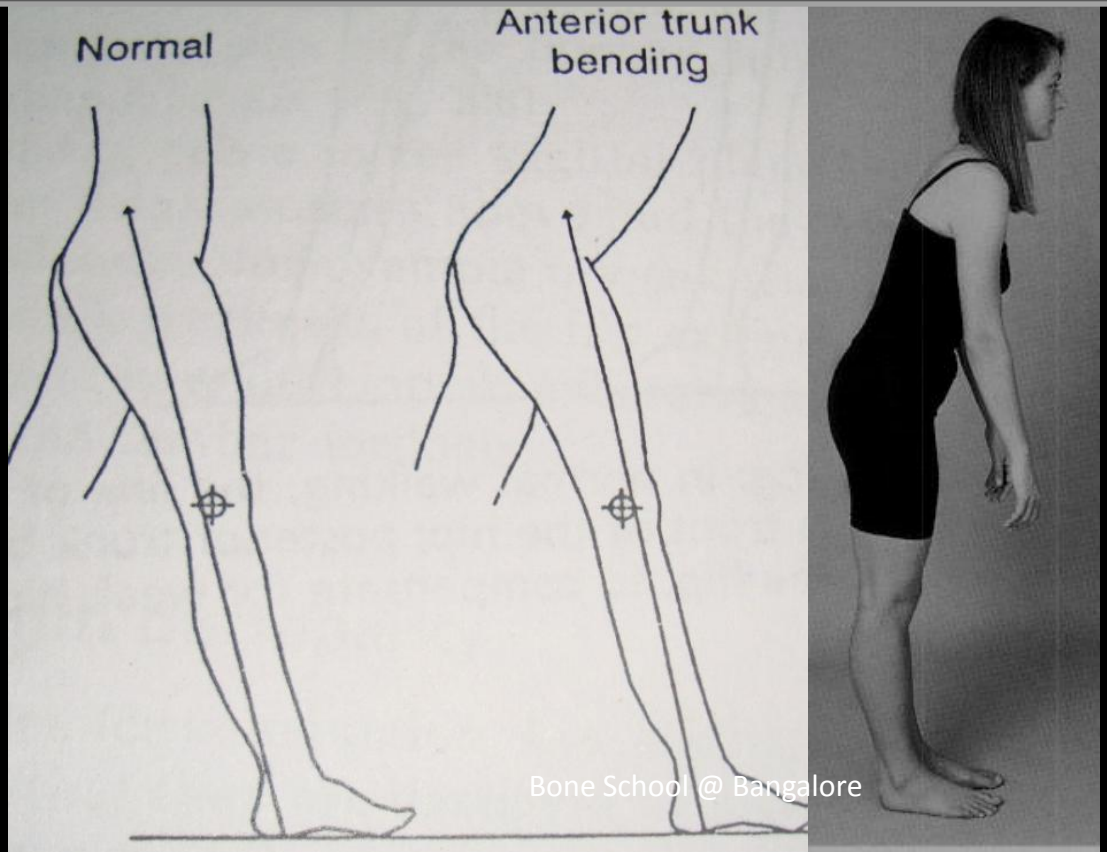




ANTERIOR TRUNK BENDING

CAUSES: -QUADRICEPS WEAKNESS
-EQUINUS DEFORMITY
-HIP FLEXOR WEAKNESS
-HIP FLEXION CONTRACTURE

TRUNK –HIP-KNEE EXTENDED AND STRAIGHT IN TERMINAL STANCE PERIOD. THE VERTICAL VECTOR LIES POSTERIOR TO THE KNEE AXIS FROM LOADING RESPONSE TO PRESWING PERIOD-CREATING IEM-DEMANDING GOOD QUADRICEPS POWER. IN QUADRICEPS WEAKNESS BODY COLLAPSES-HENCE THE TRUNK GOES FOR ANTERIOR BENDING TO SHIFT THE VERTICAL VECTOR ANTERIOR TO THE KNEE TO BALANCE



LATERAL TRUNK BENDING (TRENDLENBURG GAIT)

IN DOUBLE STANCE FORCES DISTRIBUTED EQUALLY OVER TWO HIPS

IN SINGLE STANCE FORCES INCREASES 6 FOLD BECAUSE

[FORCES OF THE TRUNK NOT SHARED + WEIGHT OF THE SWING PHASE LIMB + CONTRACTION OF ABDUCTORS]

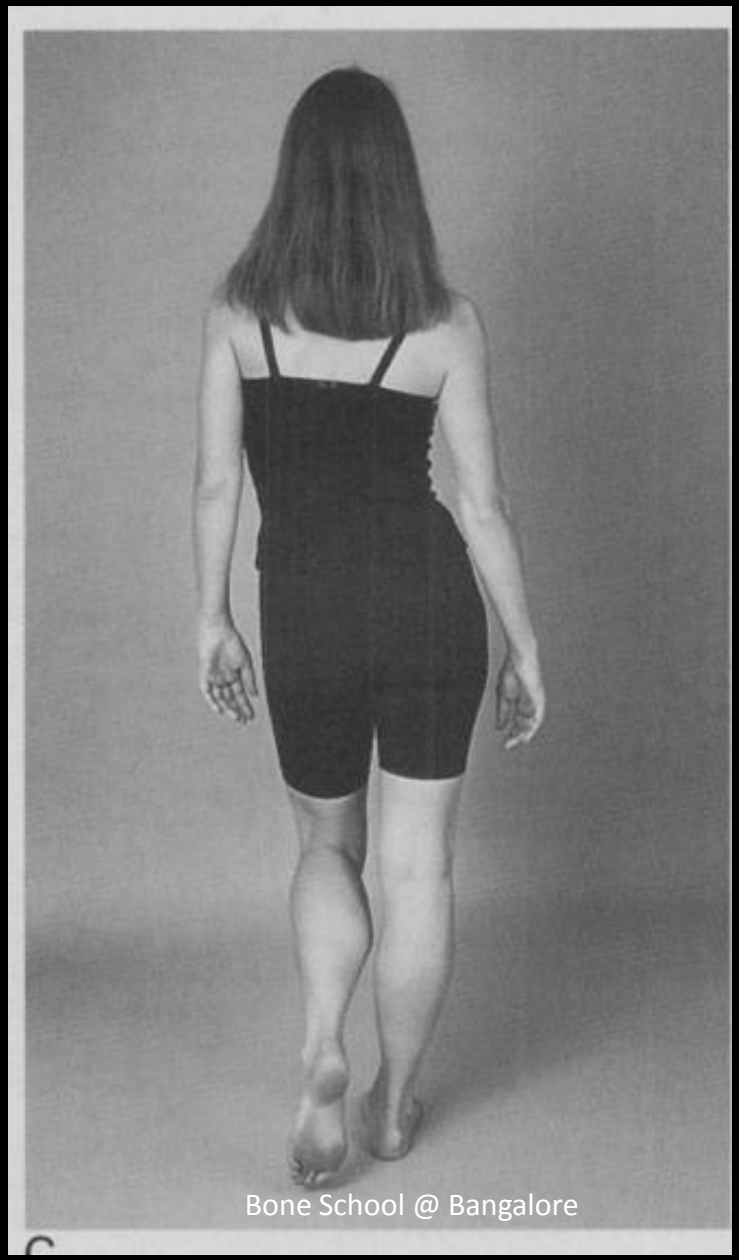
CAUSES: -PAINFUL JOINT DISORDERS

-ABDUCTOR WEAKNESS

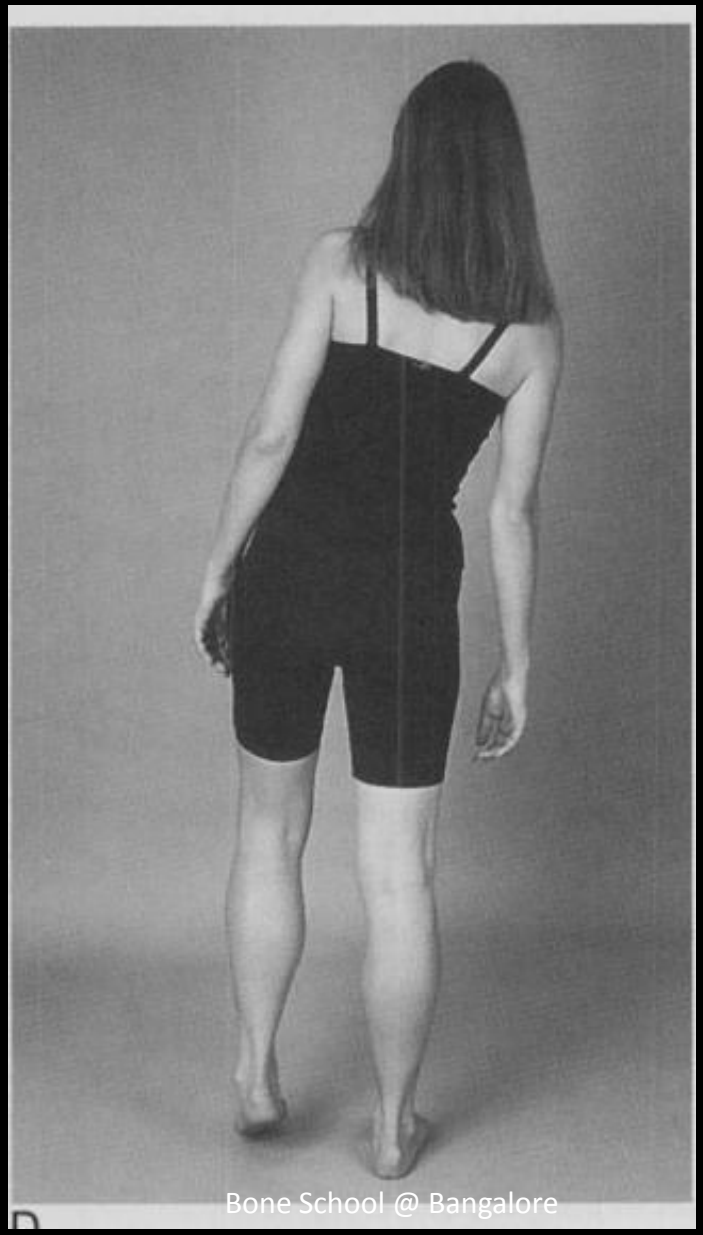
-LEVER DISORDERS

-UNEQUAL LEG LENGTH

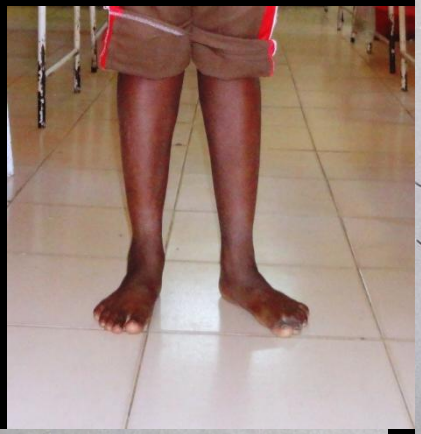
TRENDLENBURG GAIT

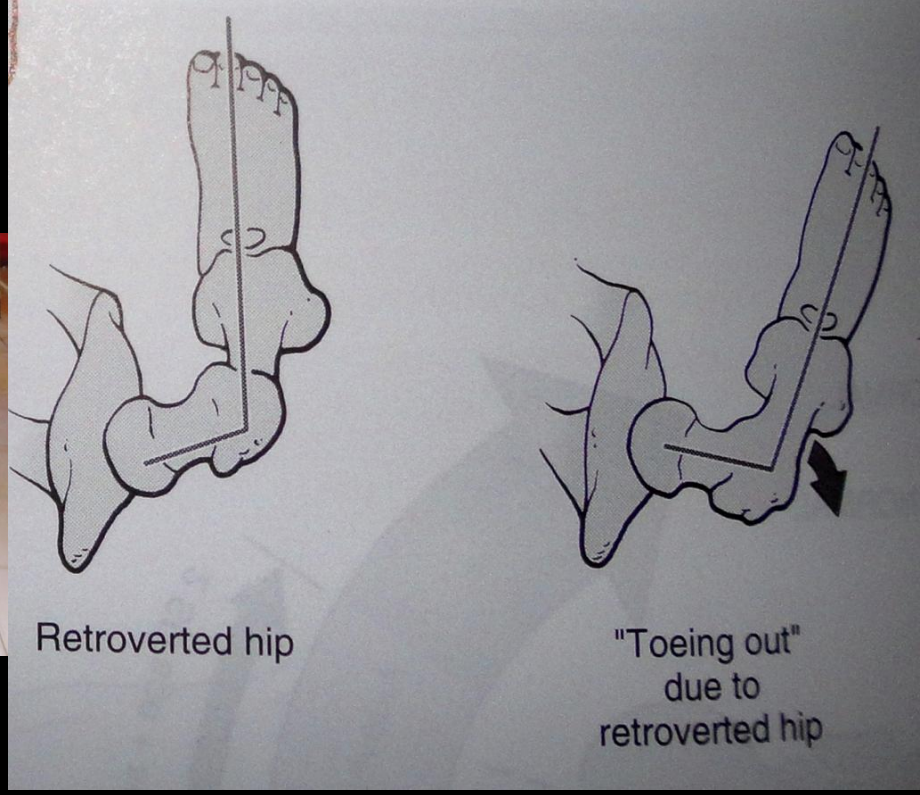


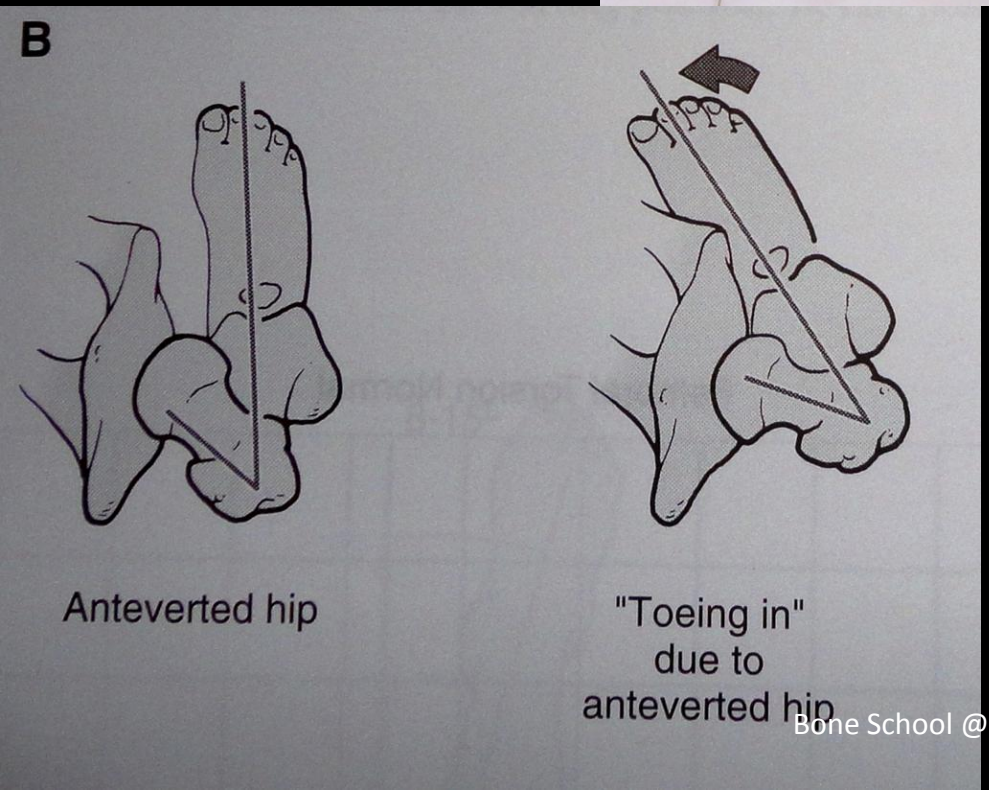
TRENDLENBURG GAIT



IN-TOEING GAIT
OUT-TOEING GAIT



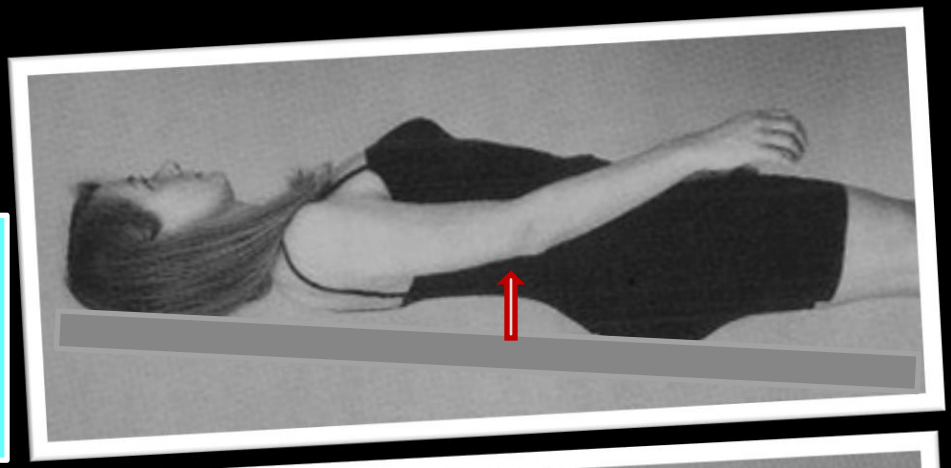




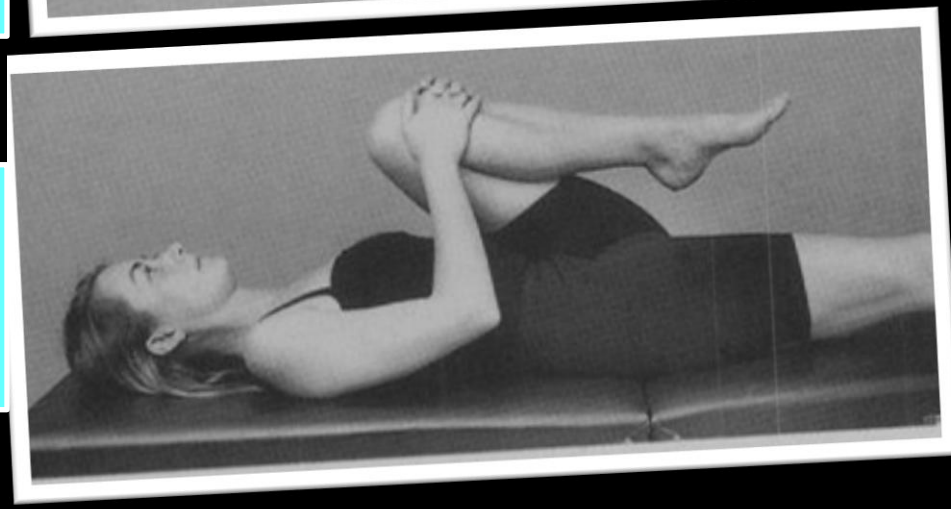
INSPECTION : SUPINE

LOOK FROM THE SIDE FOR

Exaggerated lumbar lordosis



Concealed Fixed flexion deformity

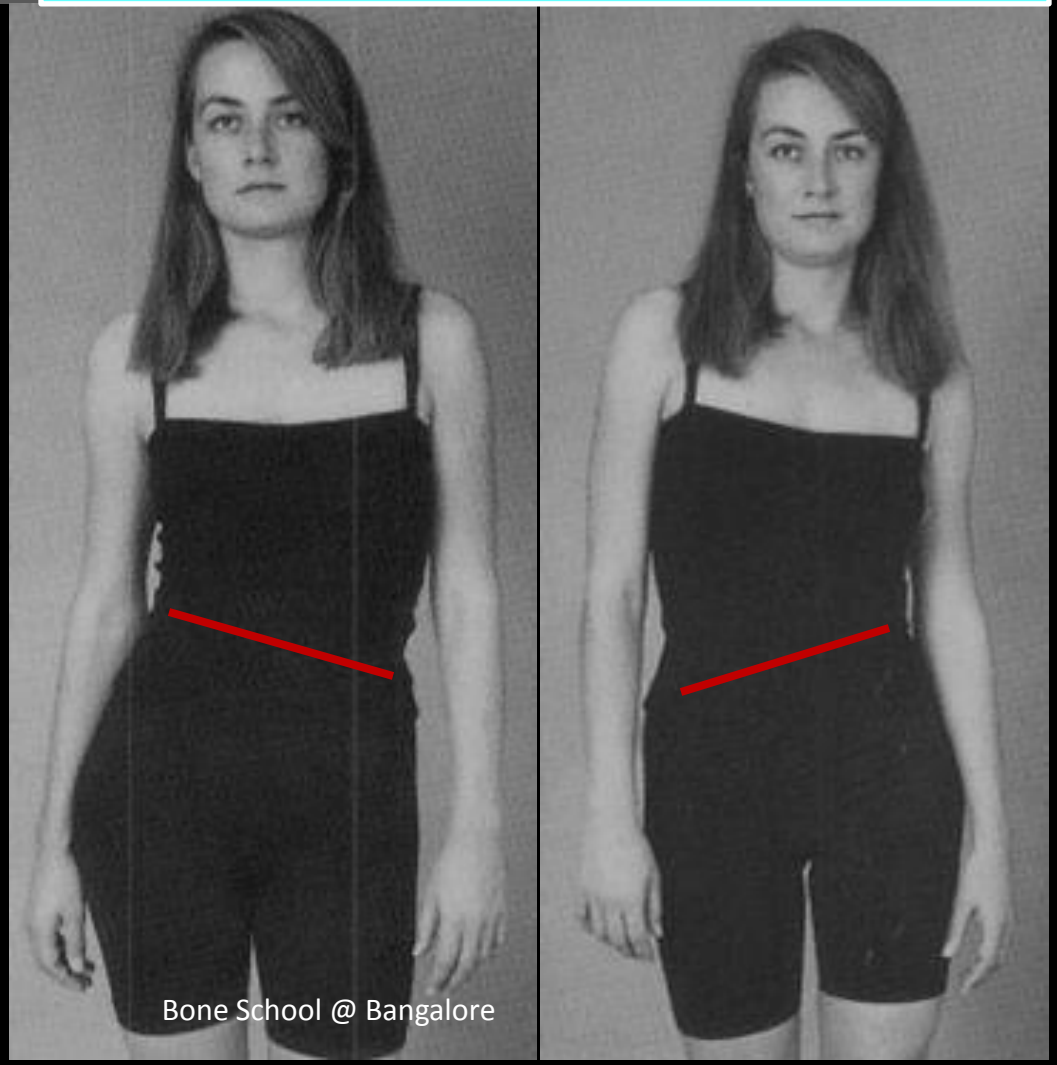


LOOK FROM THE FRONT FOR

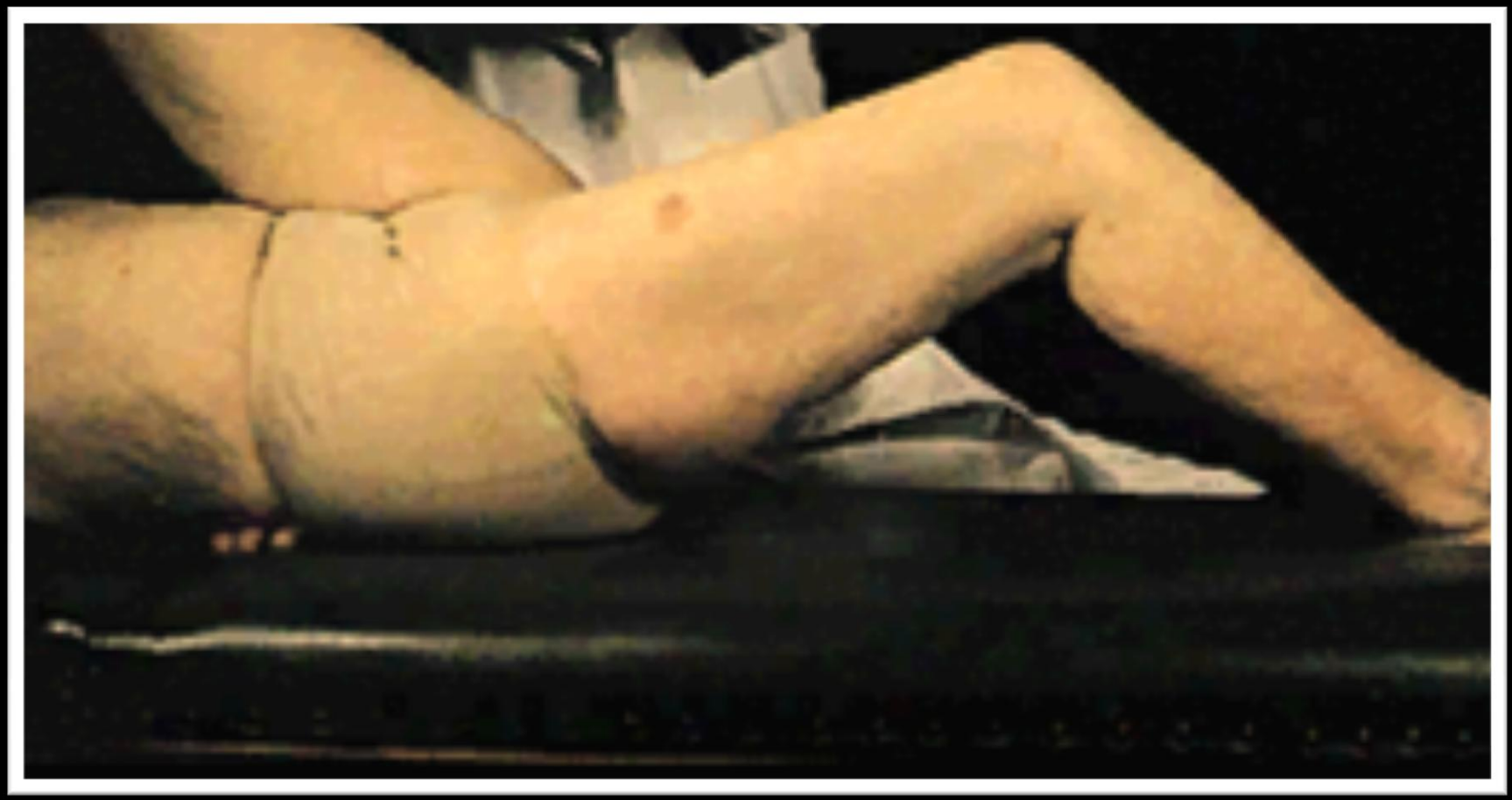
PELVIC OBLIQUITY

Concealed FIXED / NONFIXED

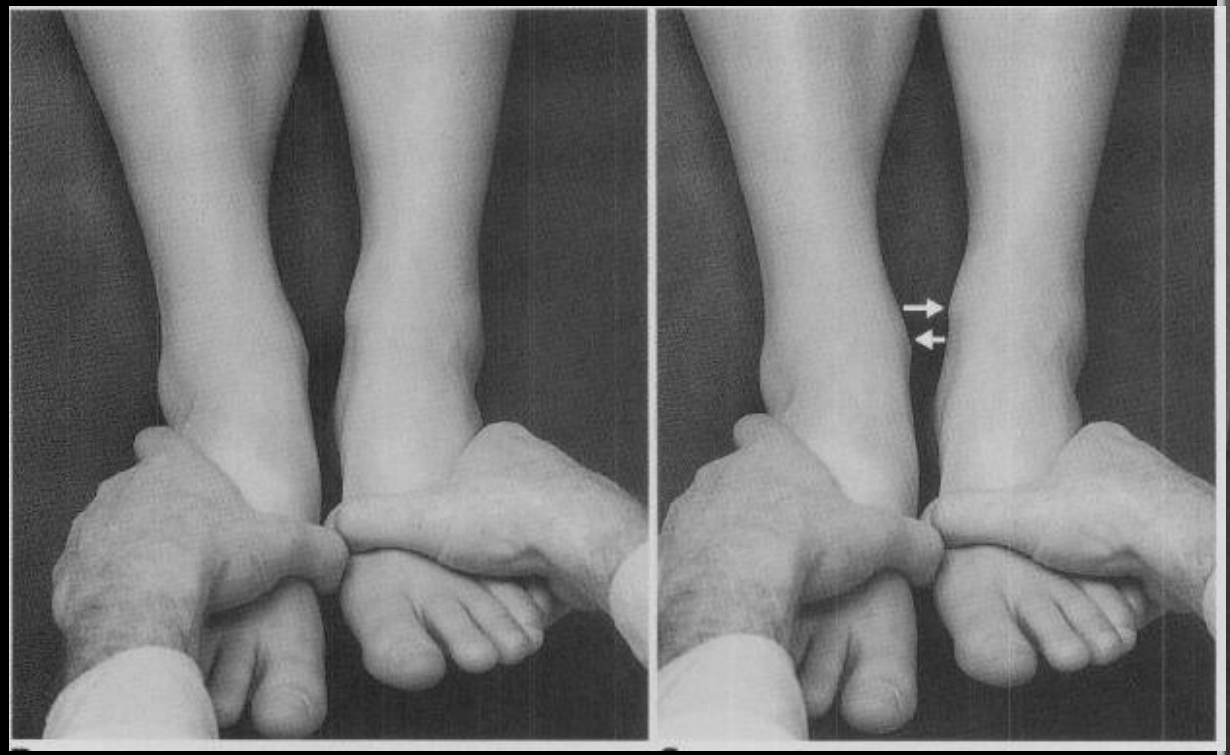
ASIS depressed- Fixed ABD def	ASIS elevated- Fixed ADD def

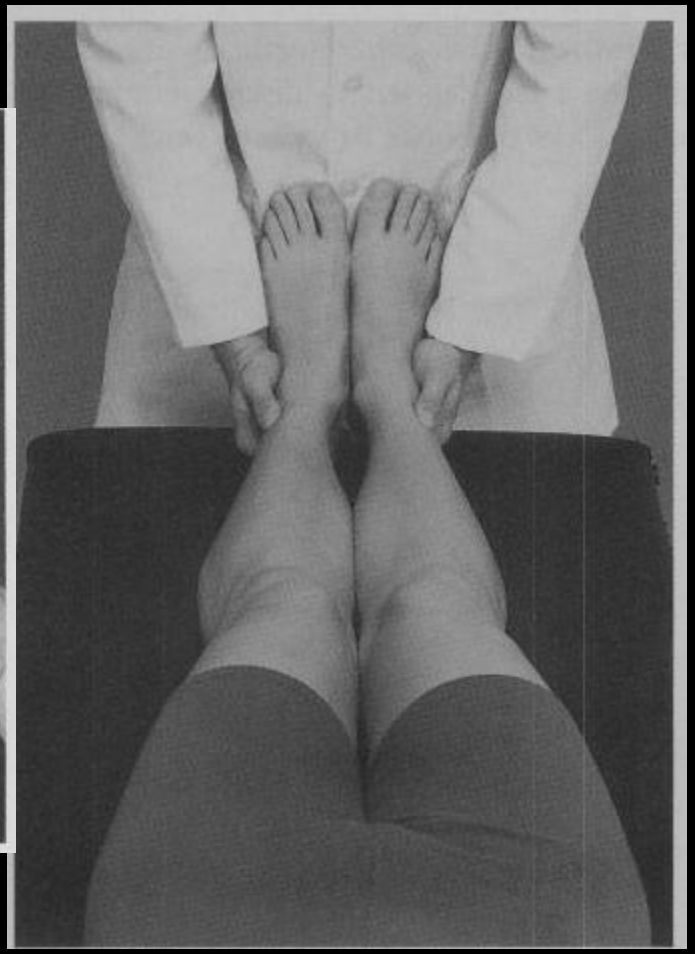


LOOK FOR APPARENT DFORMITIES @ HIP , KNEE , ANKLE JTS



LOOK FOR LIMB LENGTH DESCREPANCY

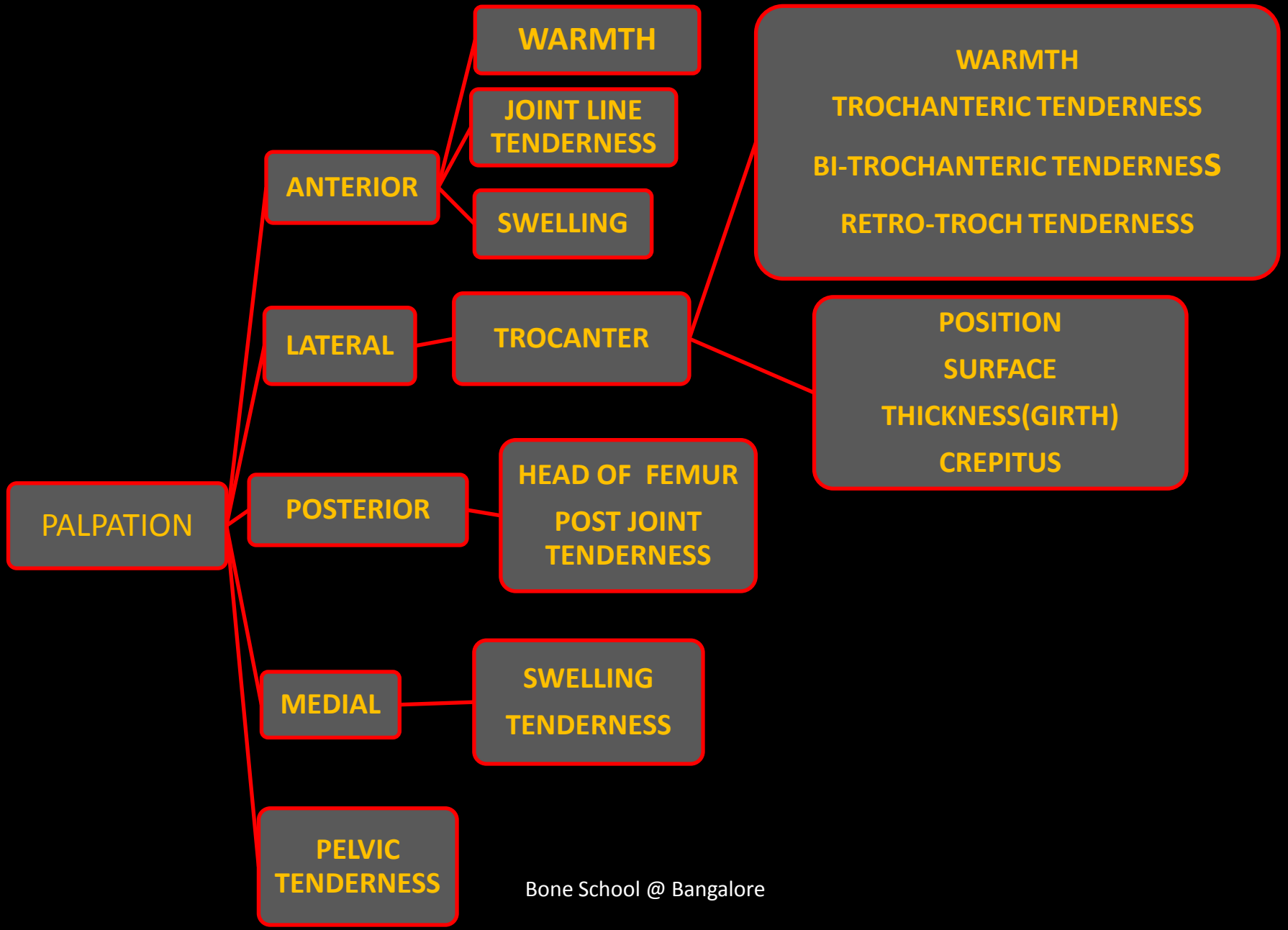




HIP JOINT

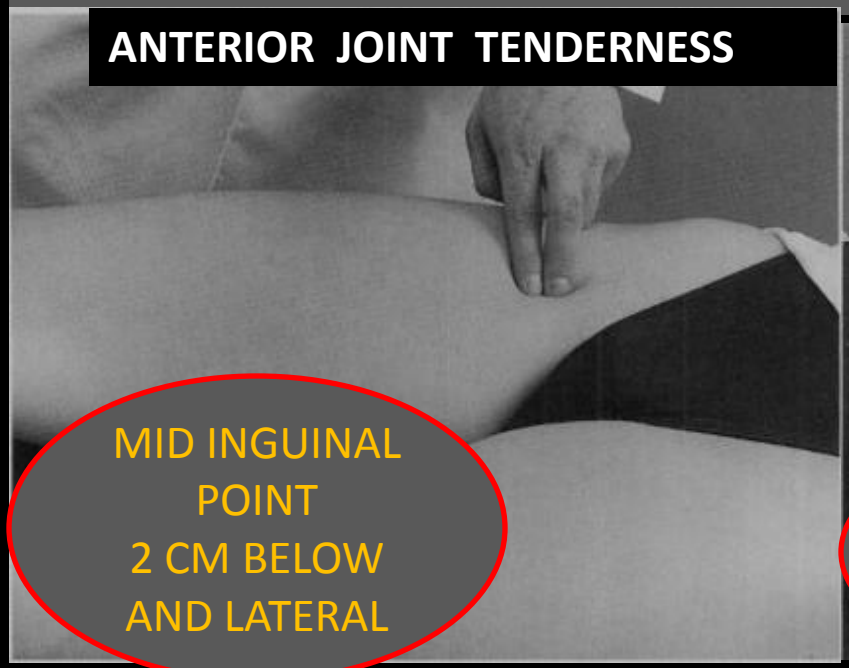
- SWELLING / FULLNESS OVER SCARPAS TRIANGLE
- SINUSES / ULCERS
- PULSATIONS / ENGORGED VESSELS
- FOSSAE AROUND TROCANTER

FEEL (PALPATION)

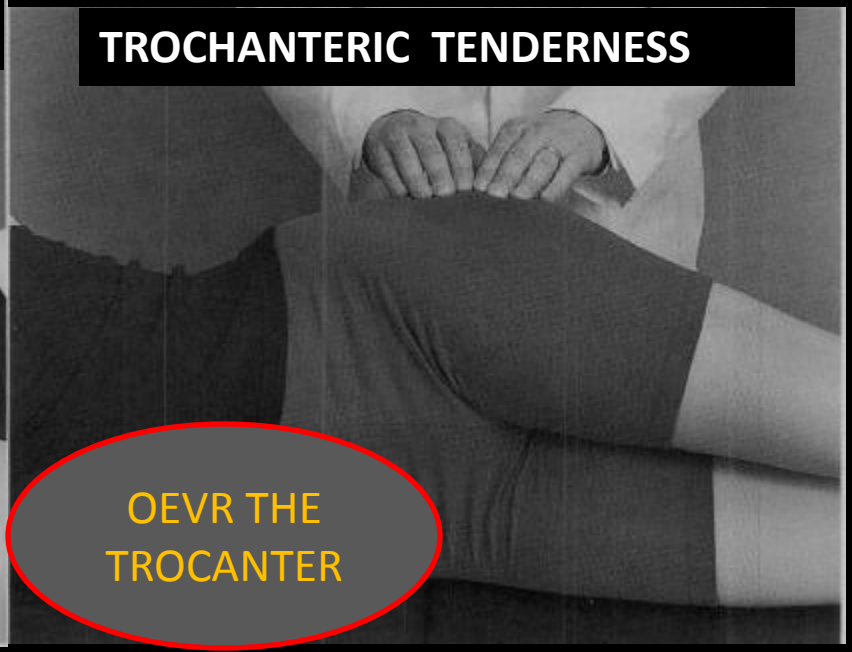


FEEL THE TENDERNESS

ANTERIOR JOINT TENDERNESS



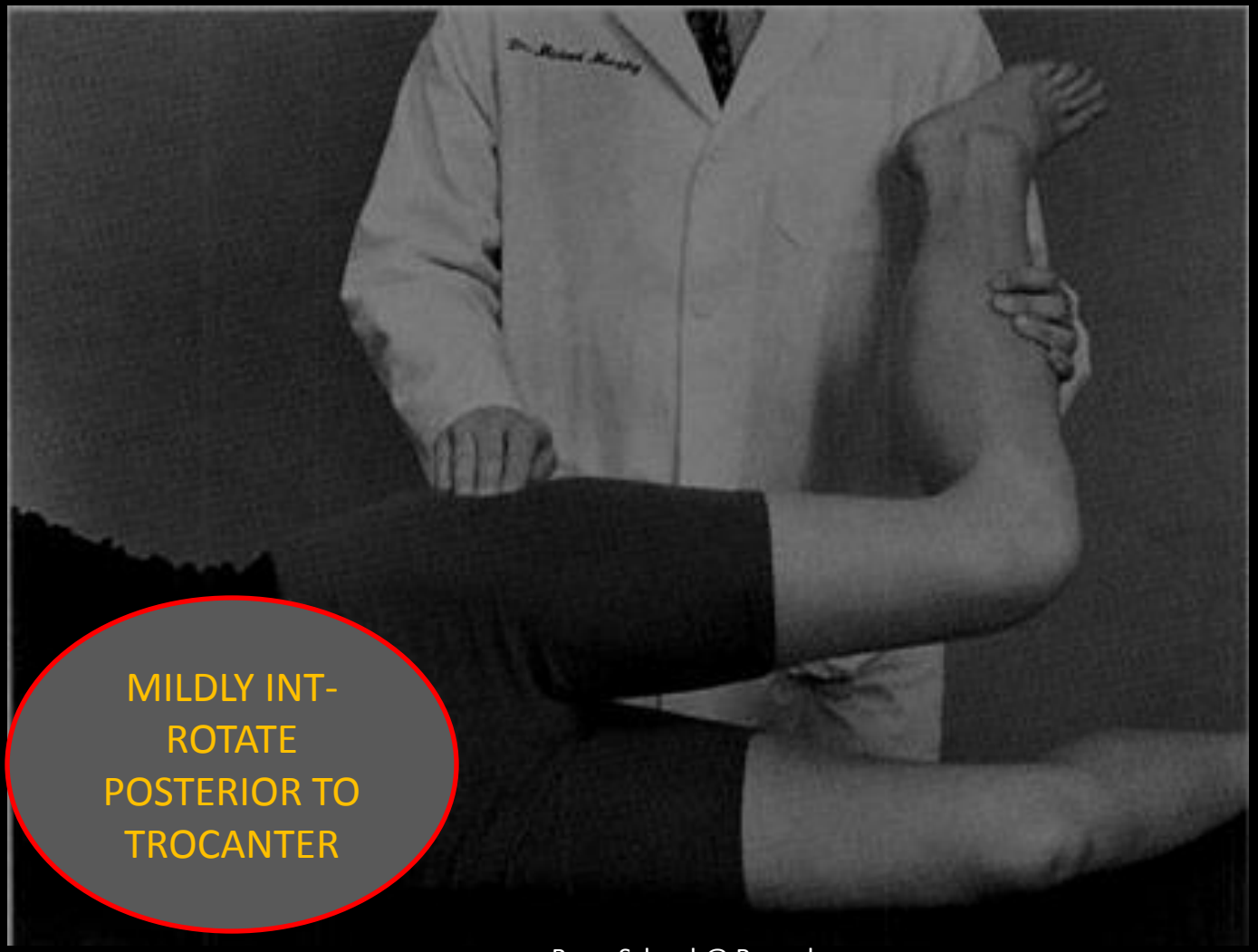
TROCHANTERIC TENDERNESS



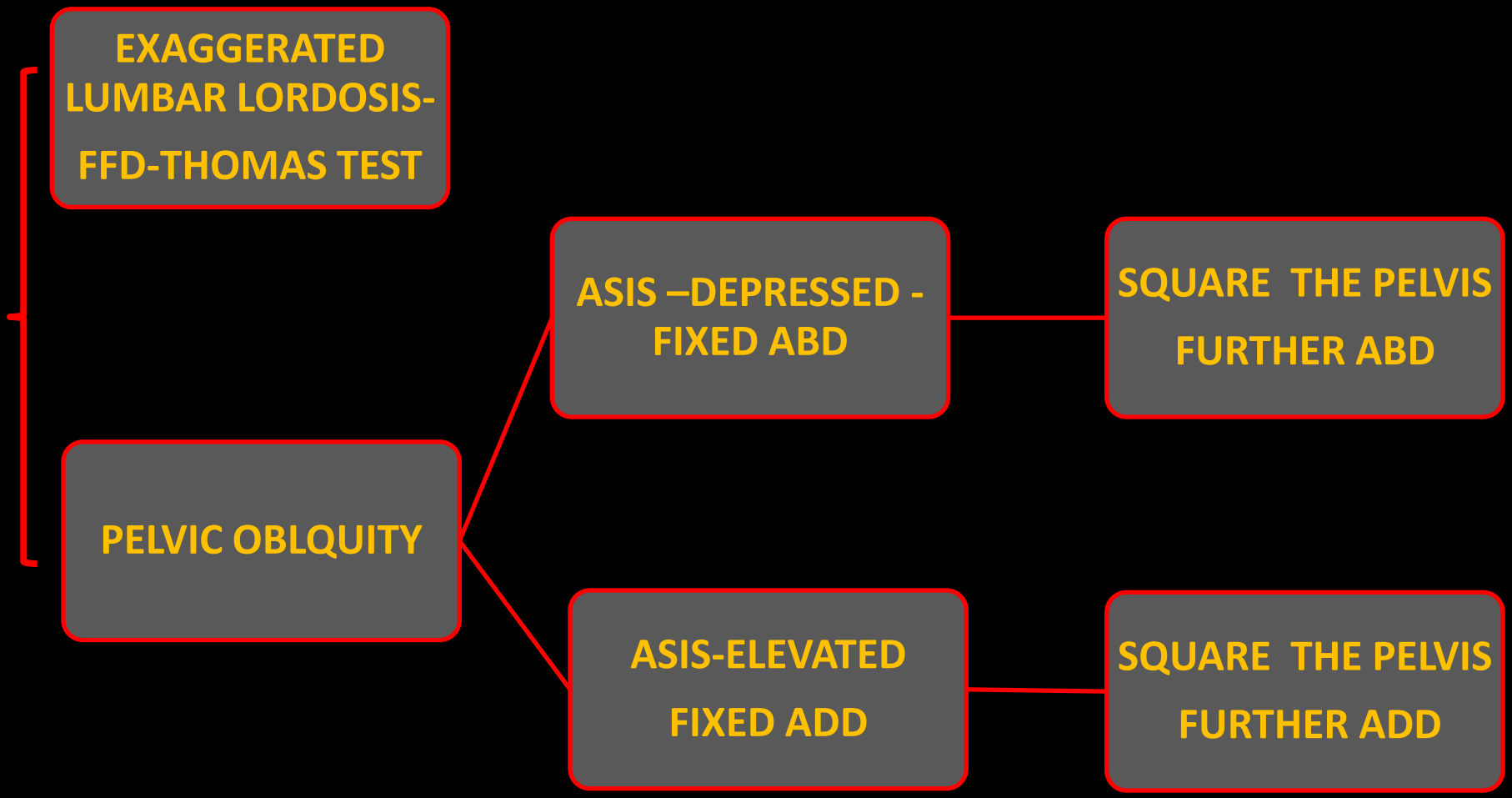
FEMORAL PULSE

MEDIAL JOINT TENDERNESS

RETRO-TROCHANTERIC TENDERNESS

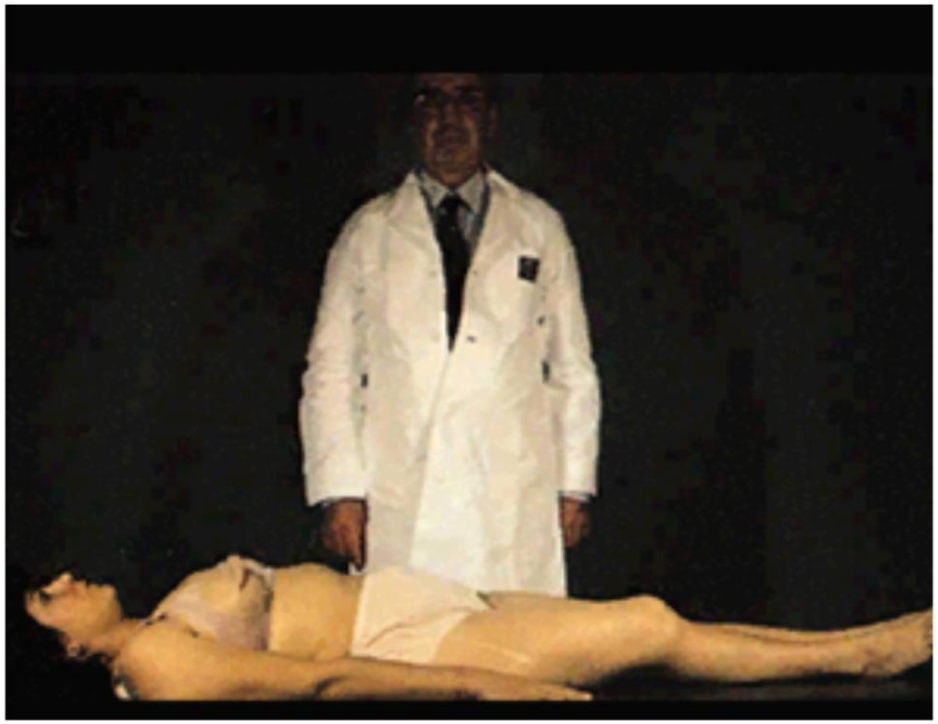


ASSESSMENT OF DEFORMITY



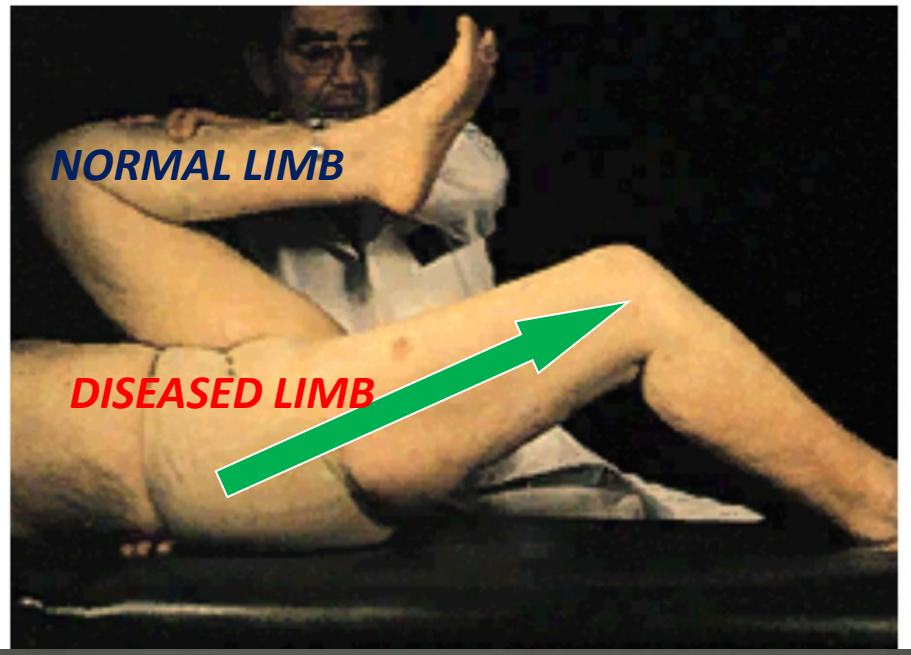
HIP EXAMINATION

THOMAS TEST

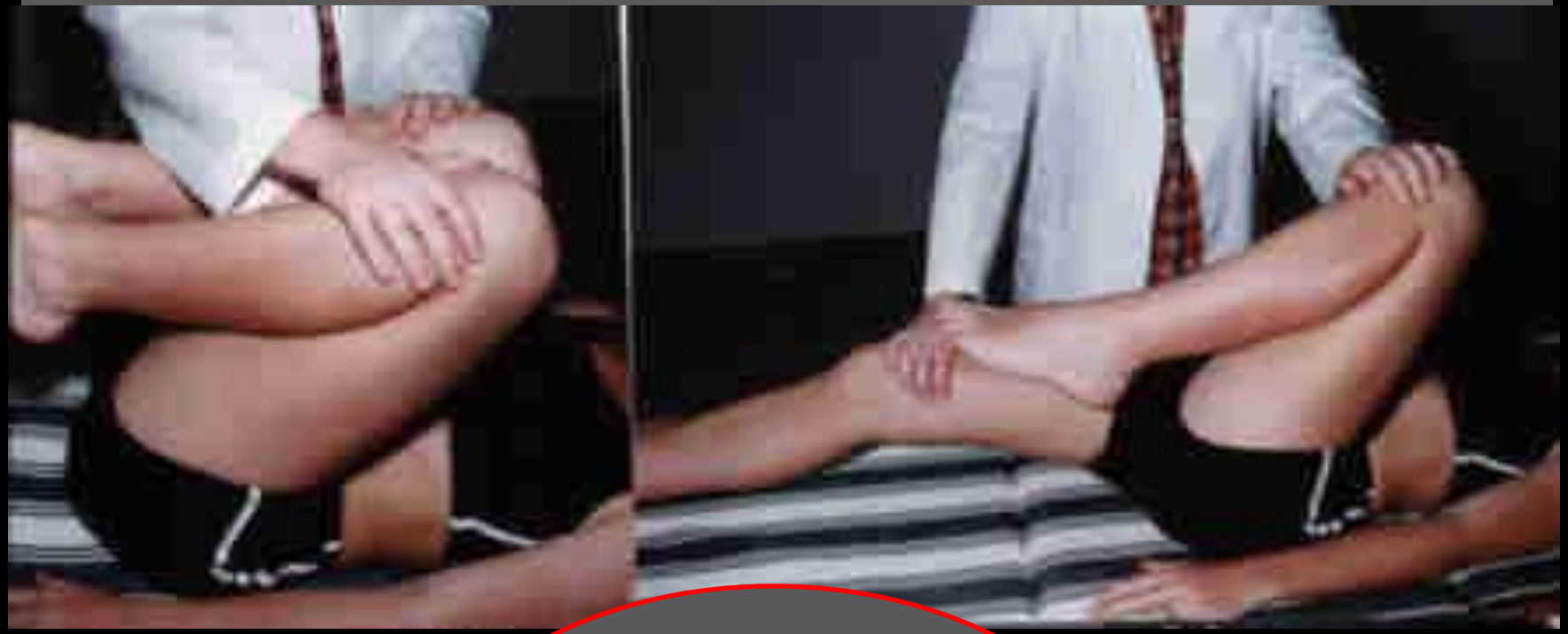


ONE HAND FEELS THE LORDOSIS
OTHER HAND FLEXES THE NORMAL HIP TILL THE OBLITERATION OF L.L.

Flexion deformity



BILATERAL FFD



FLEX BOTH HIPS TILL THE L .L. OBLITERATED.

WITH ONE HIP FLEXED, EXTEND THE OTHER TILL L.L. REAPPEARS

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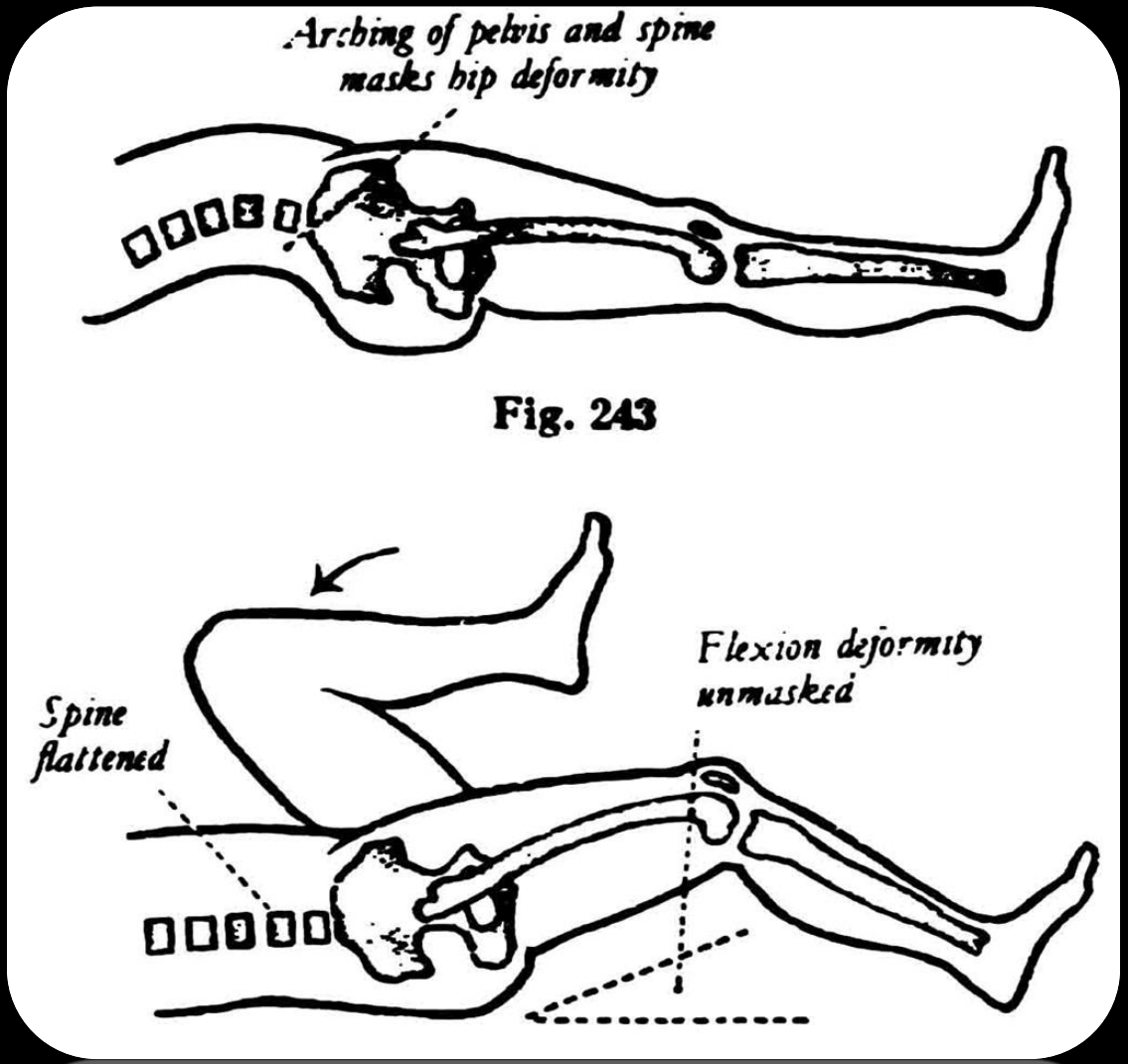
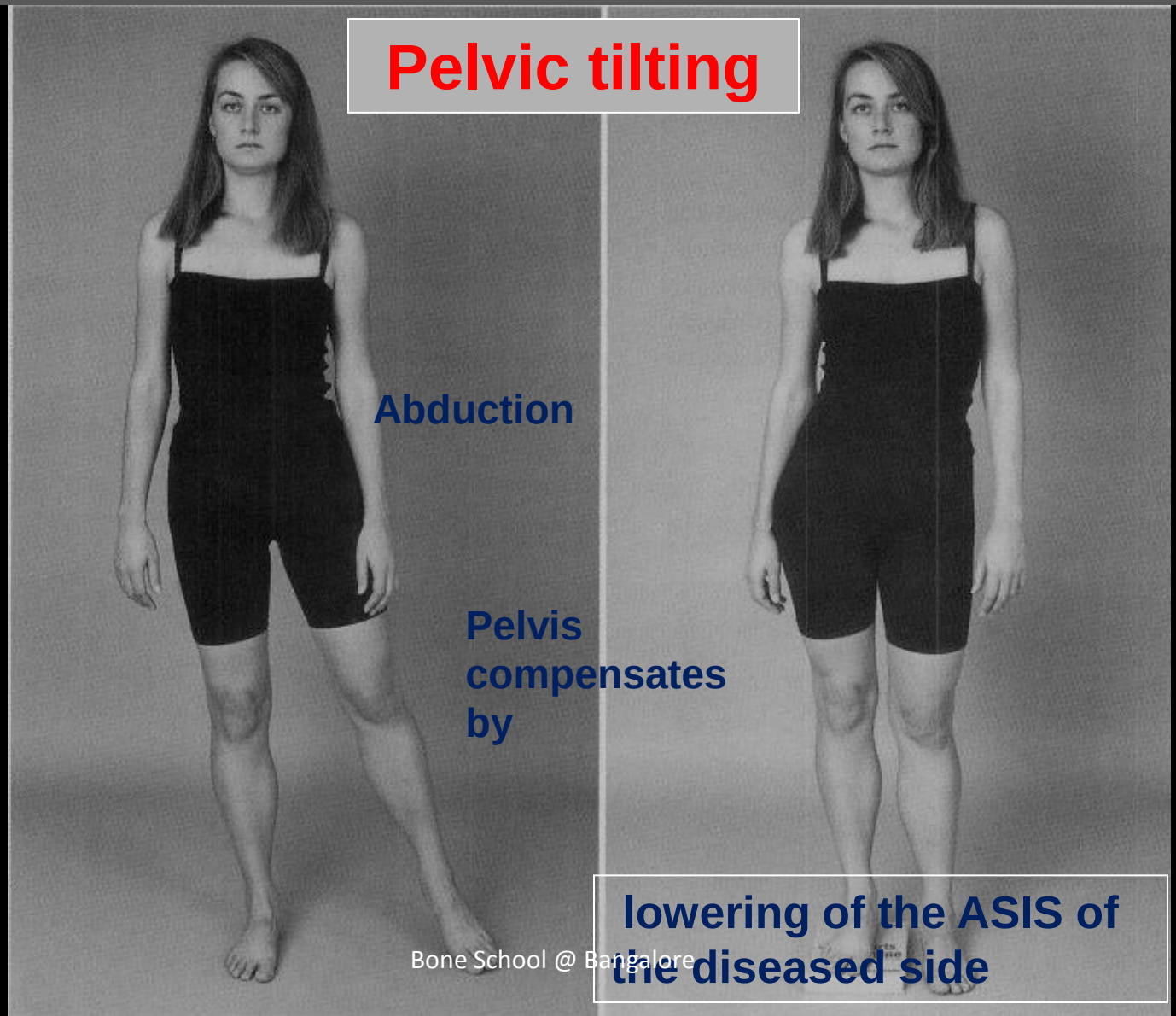
Thomas test:

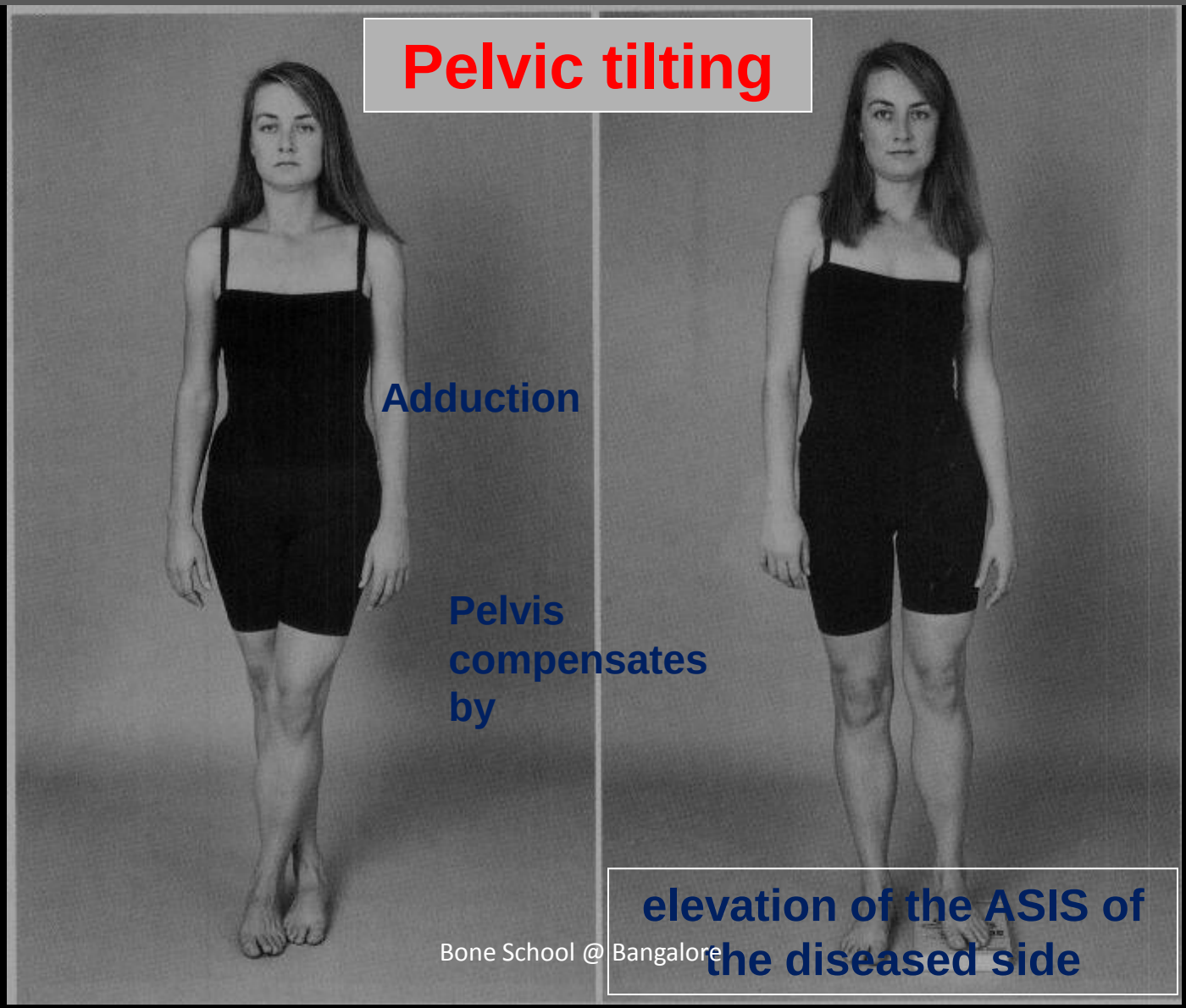
This test is used to diagnose fixed flexion deformity of the hip. The examiner blocks the pelvis by bringing the contralateral sound hip into maximal flexion. This eliminates lumbar lordosis that can be used to compensate for the hip flexion contracture of the affected hip. The leg to be examined is then brought into maximal extension with the hip in neutral adduction and rotation.



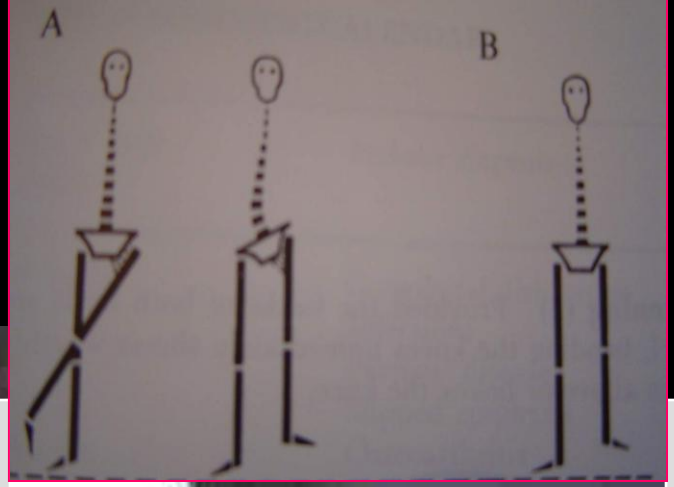
FIXED ABDUCTION



FIXED ADDUCTION



CORONAL DEFORMITY



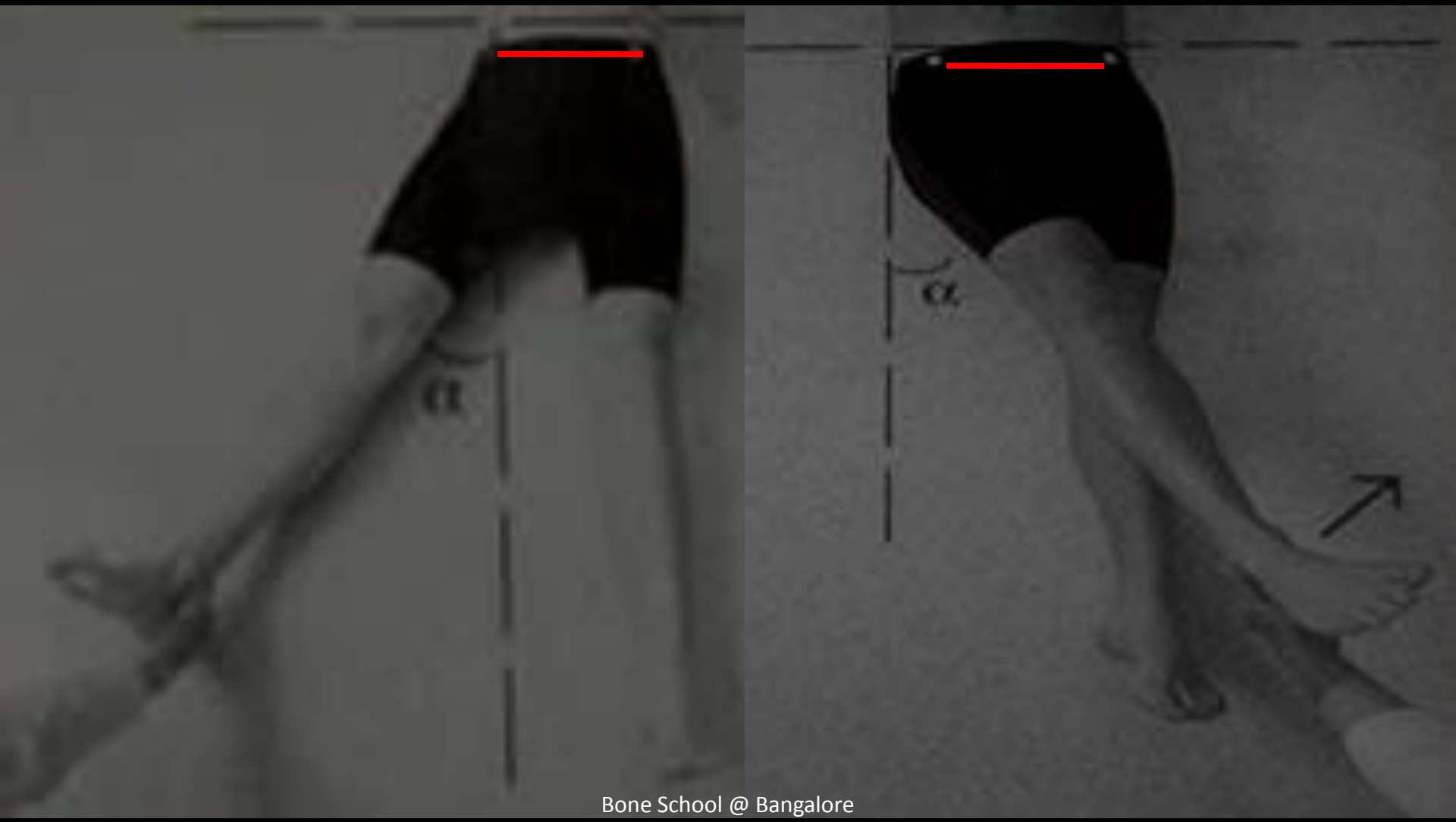
ASIS-ELEVATED - FIXED ADDUCTION

ASIS –DEPRESSED – FIXED ABDUCTION

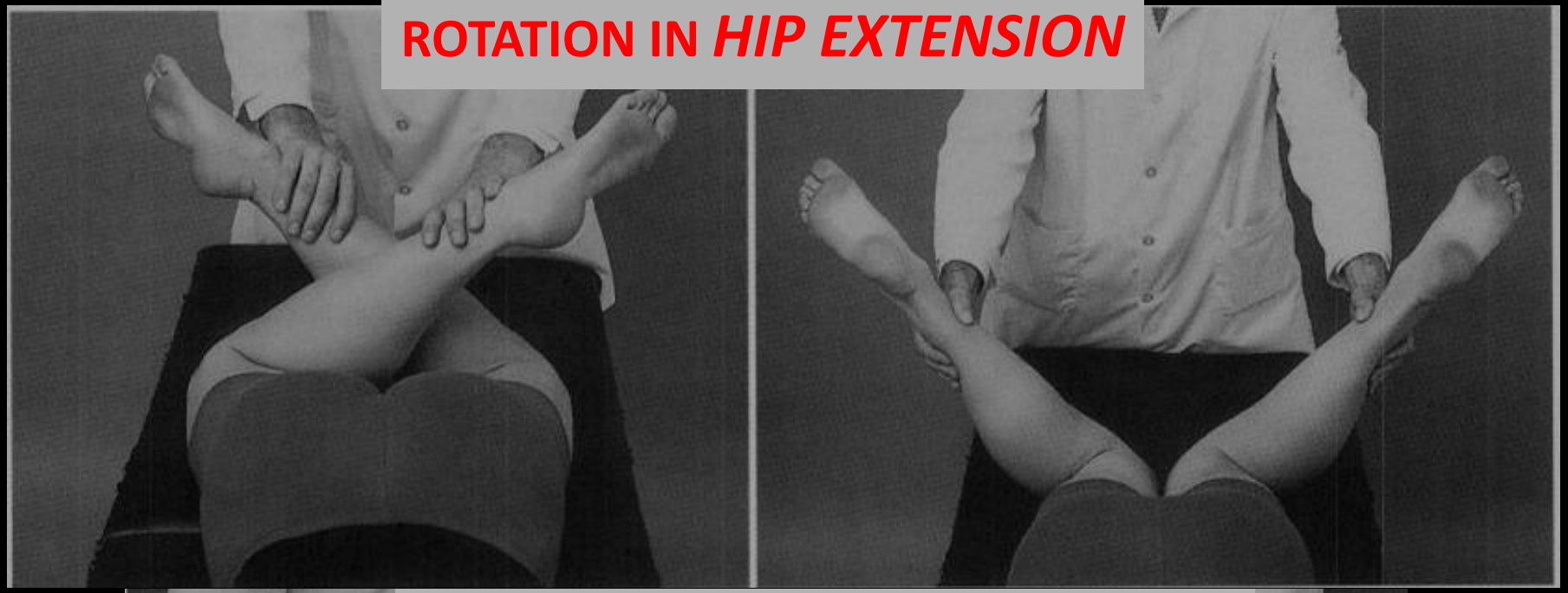
SQUARE THE PELVIS BY FURTHER ADDUCTION

SQUARE THE PELVIS BY FURTHER ABDUCTION

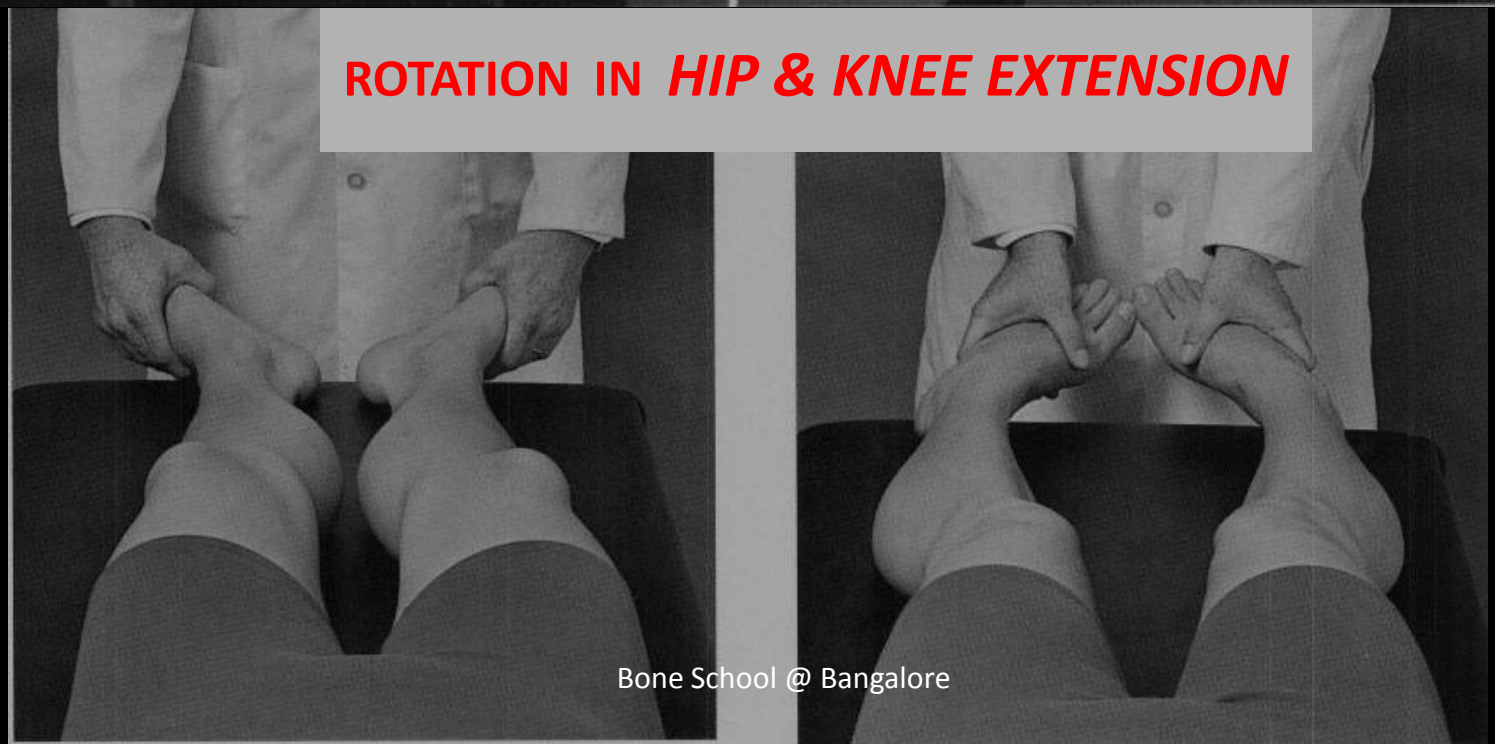
FIXED ABDUCTION – ADDUCTION DEFORMITY



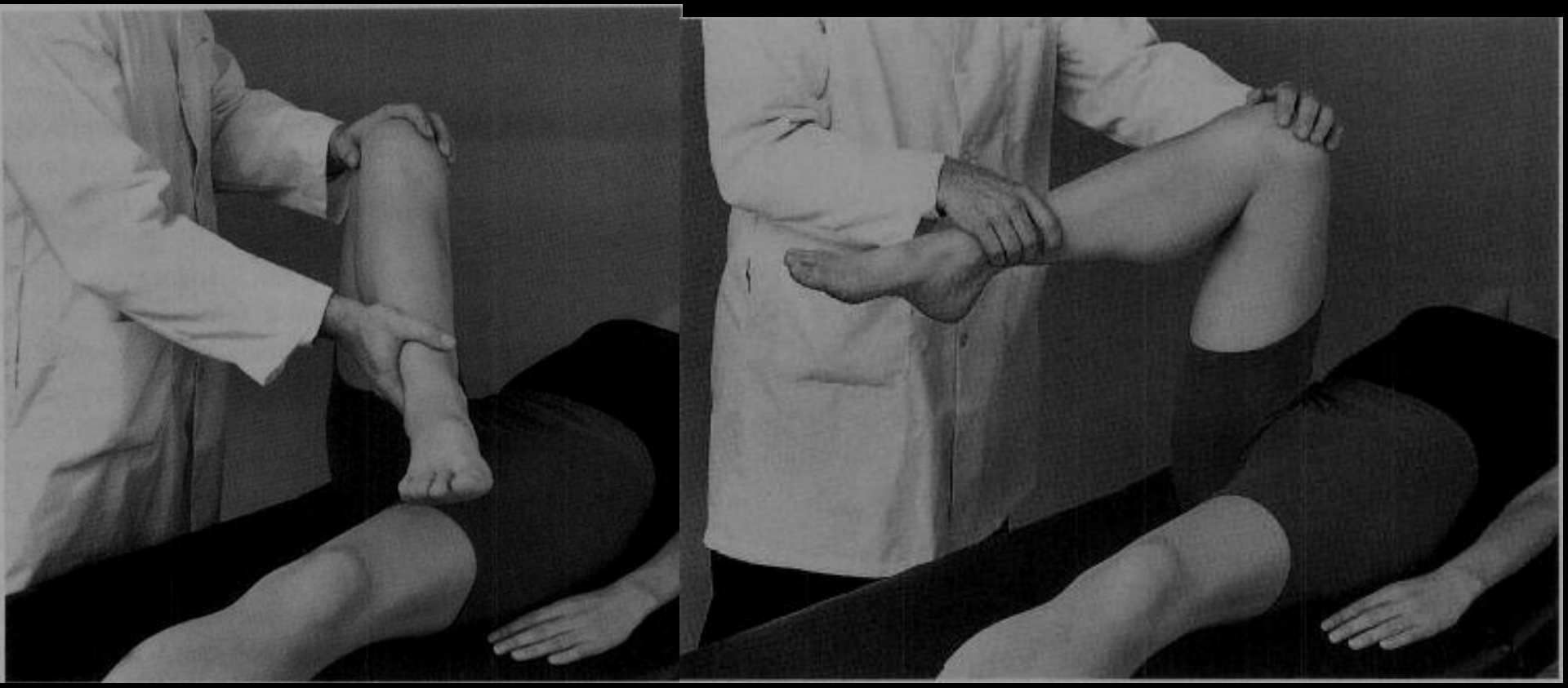
ROTATION IN *HIP EXTENSION*



ROTATION IN *HIP & KNEE EXTENSION*



ROTATION IN *HIP FLEXION*



MOVE

- FLEXION : 0 – 120^0
- EXTENSION : 0 – 20^0
- ABDUCTION : 0 – 45^0
- ADDUCTION : 0 – 30^0
- EXT. ROTATION : 0 – 45^0
- INT. ROTATION : 0 - 25^0

MOVEMENTS

ACTIVE AND PASSIVE

PASSIVE : RANGE

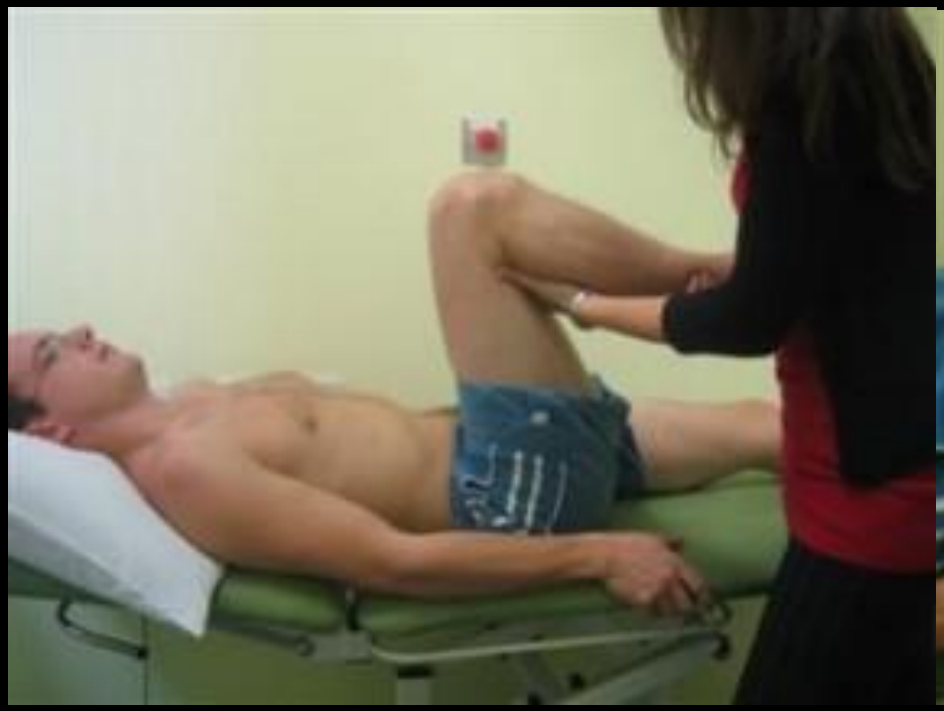
ASSOCIATED PAIN

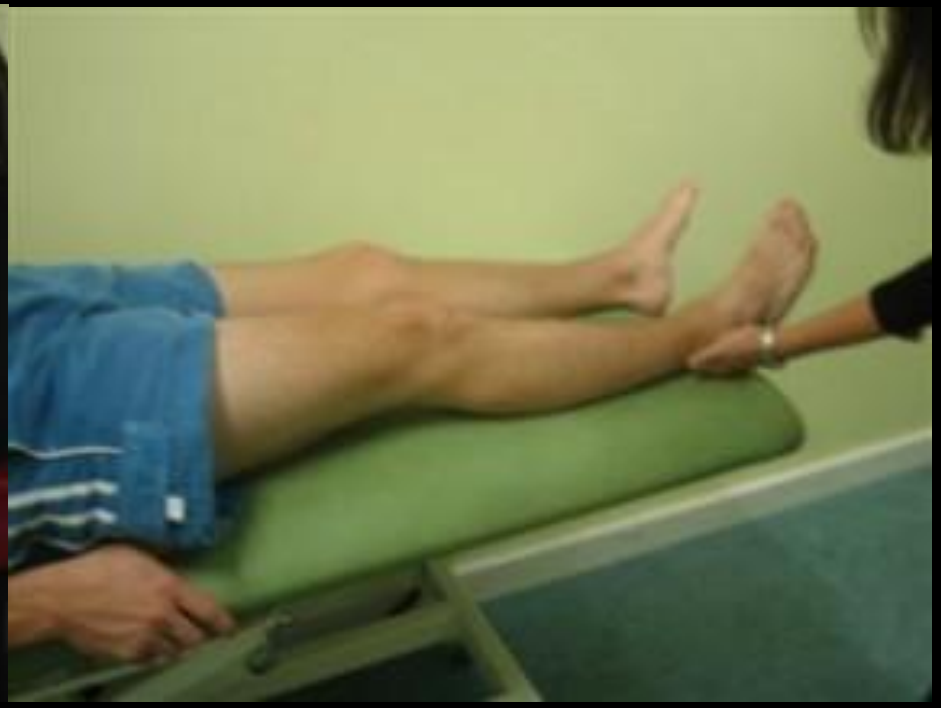
MUSCLE SPASM

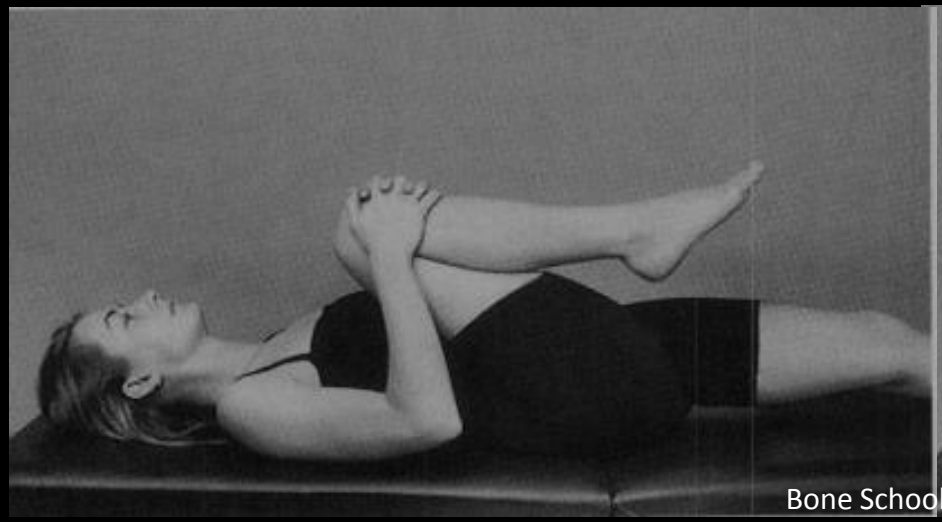
CREPITUS

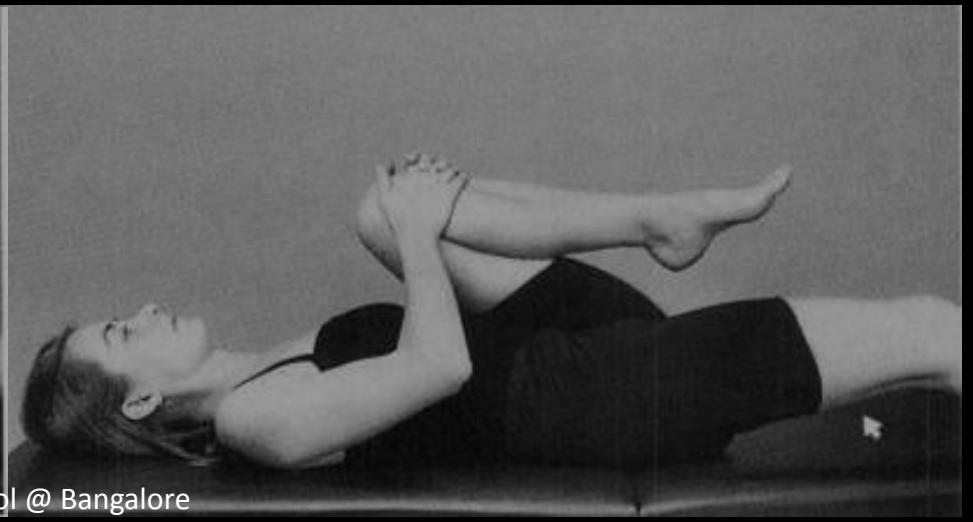
INSTABILITY

FLEXION

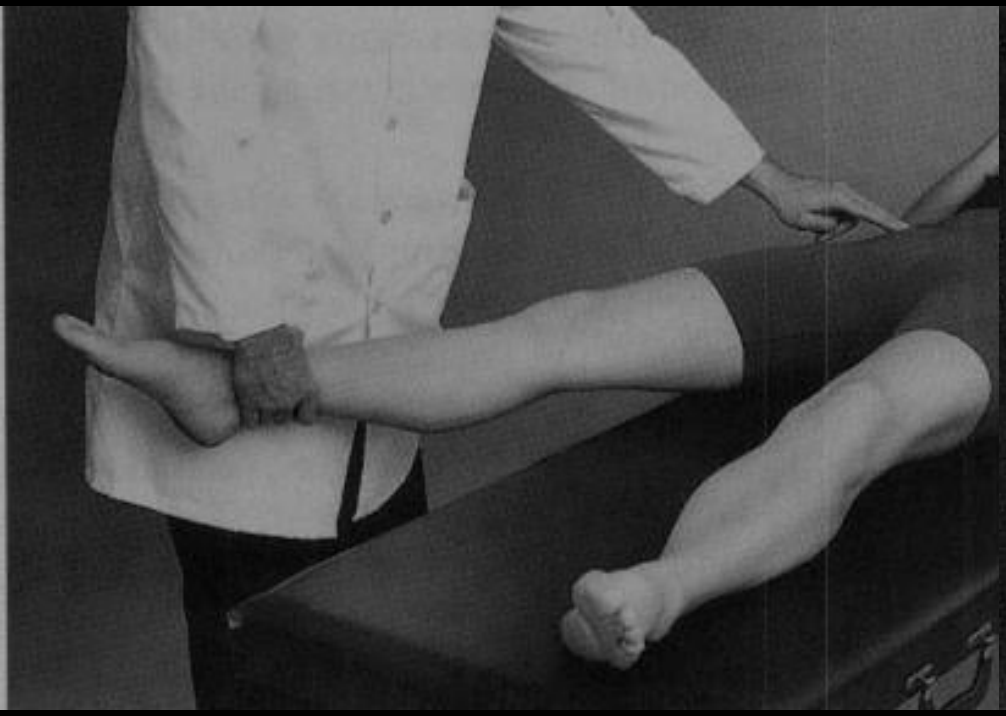




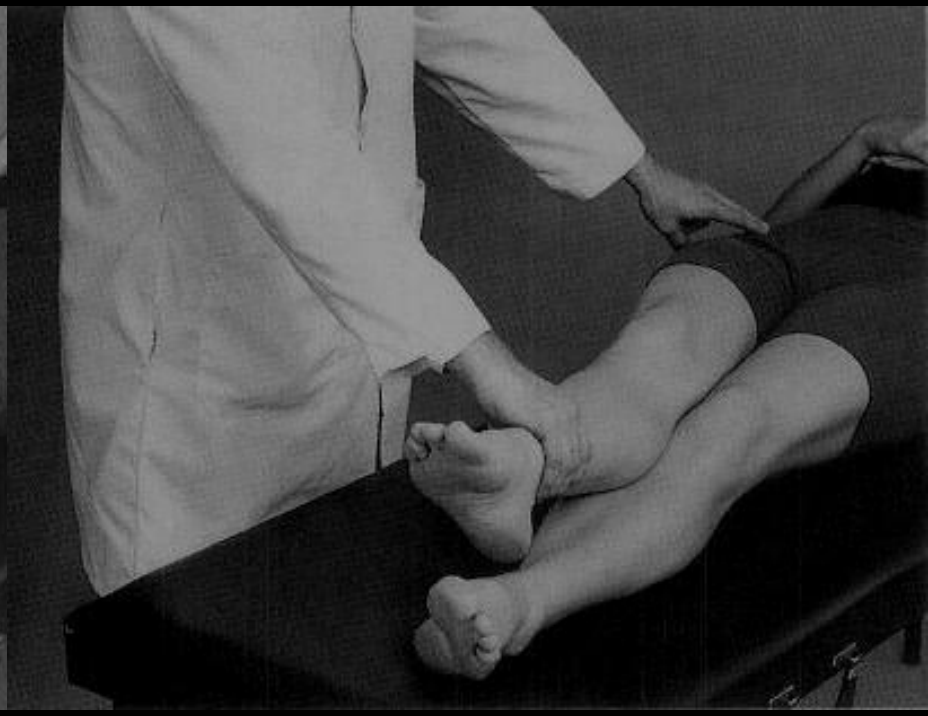




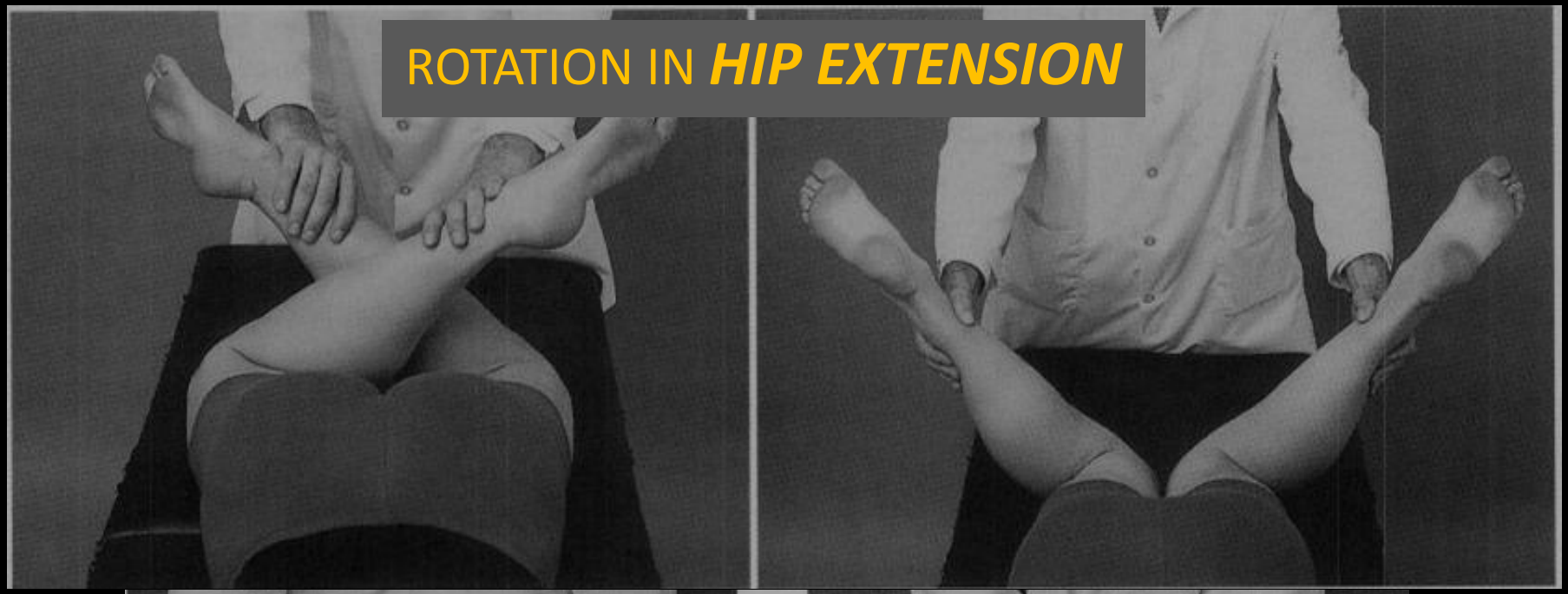
ABDUCTION

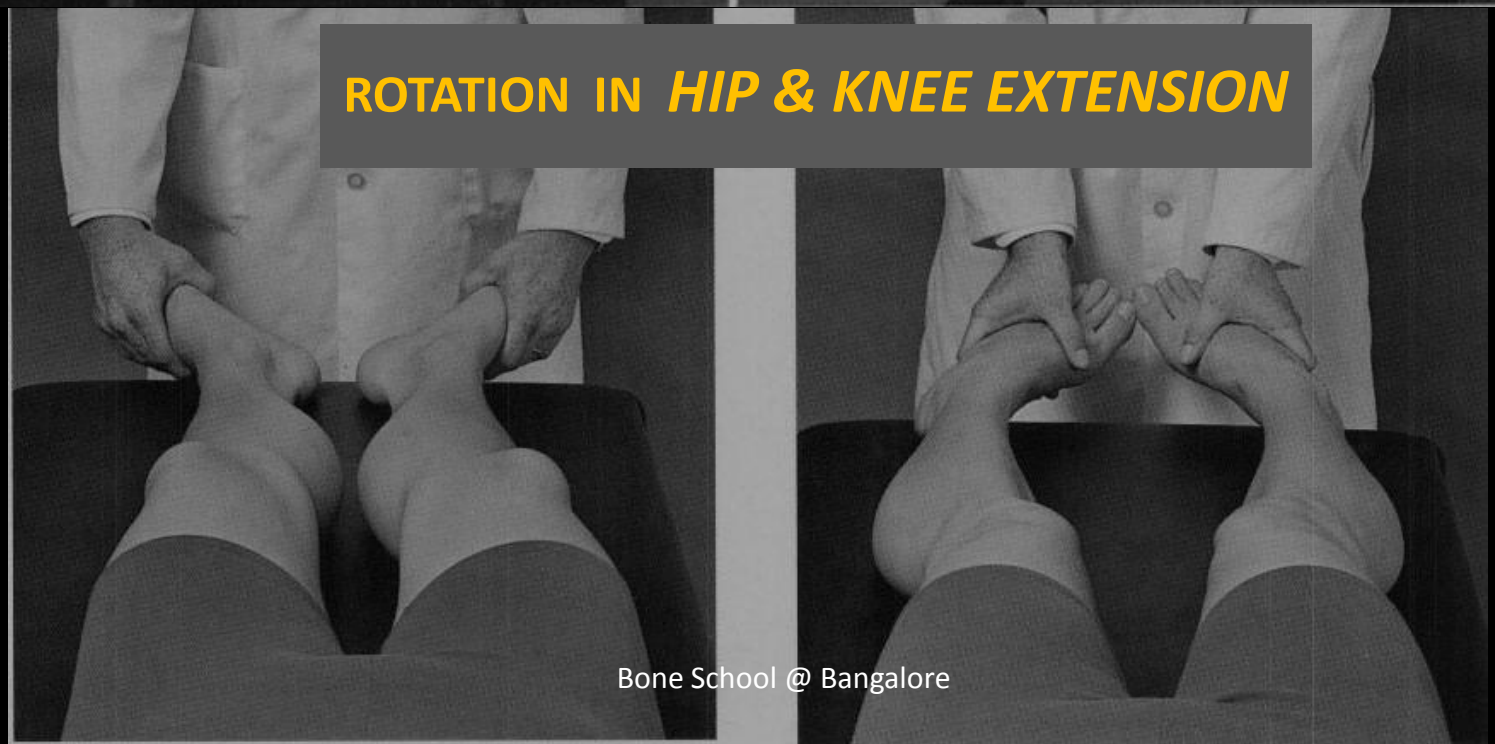


ADDUCTION

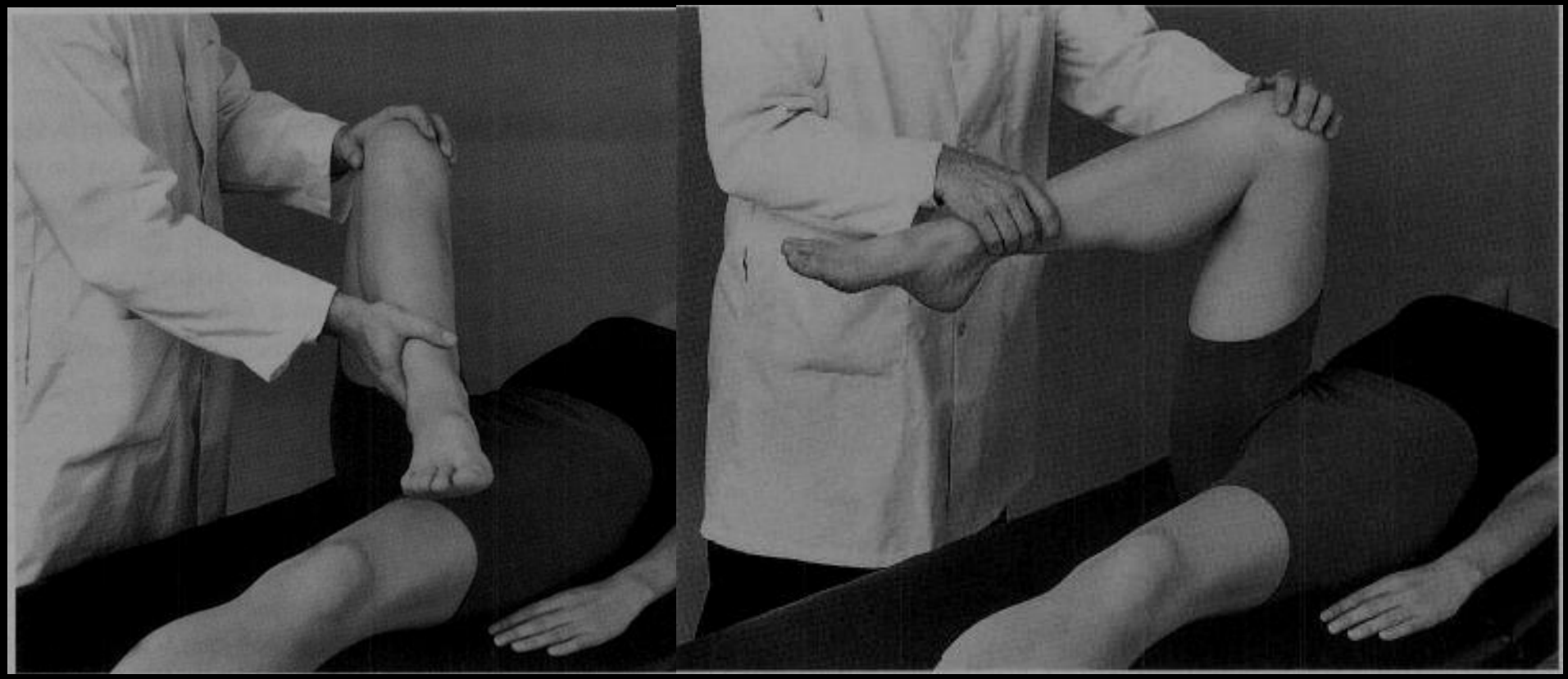


EXTENSION


ROTATION IN *HIP EXTENSION*

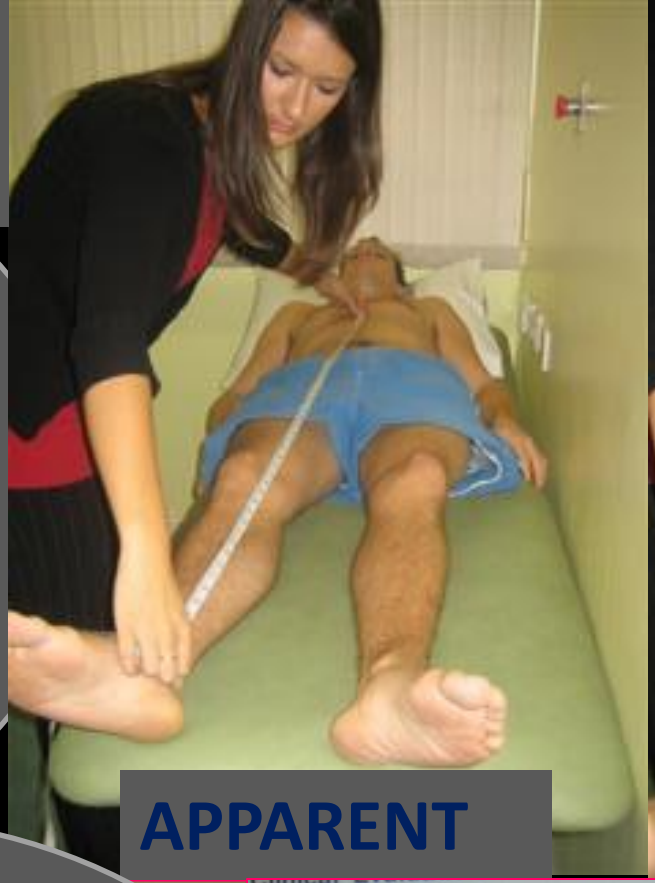

ROTATION IN *HIP & KNEE EXTENSION*

ROTATION IN *HIP FLEXION*

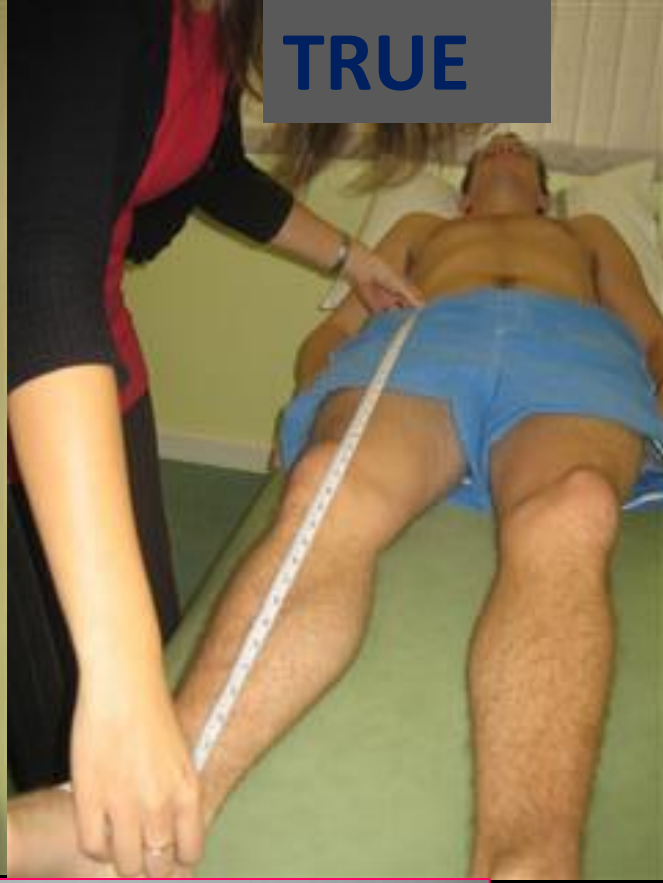


LOWER LIMB LENGTH

- TRUE LENGTH
- ANATOMICAL LENGTH
- PATIENT IN STRAIGHAT LINE AND DEFORMITIES CORRECTED AND THE LIMBS ARE KEPT IN IDENTICAL POSITION
- MEASURED FROM THE ASIS TO MEDIAL MALLEOLUS

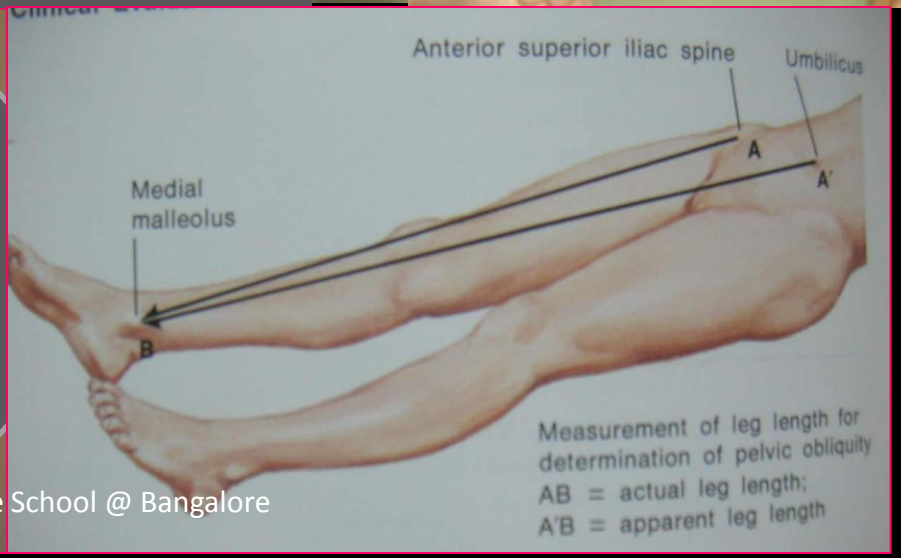


TRUE

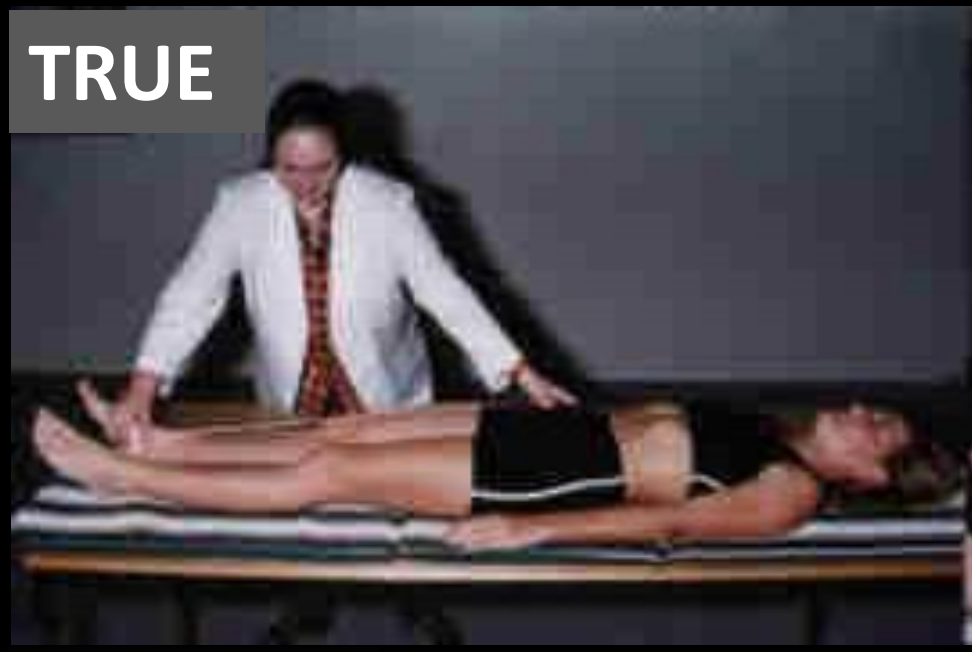


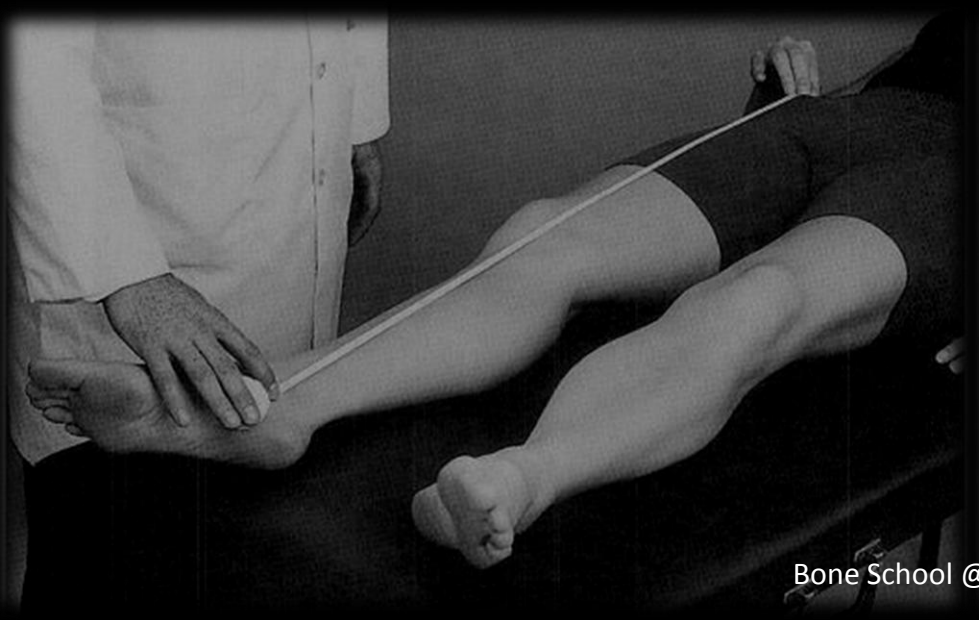
APPARENT

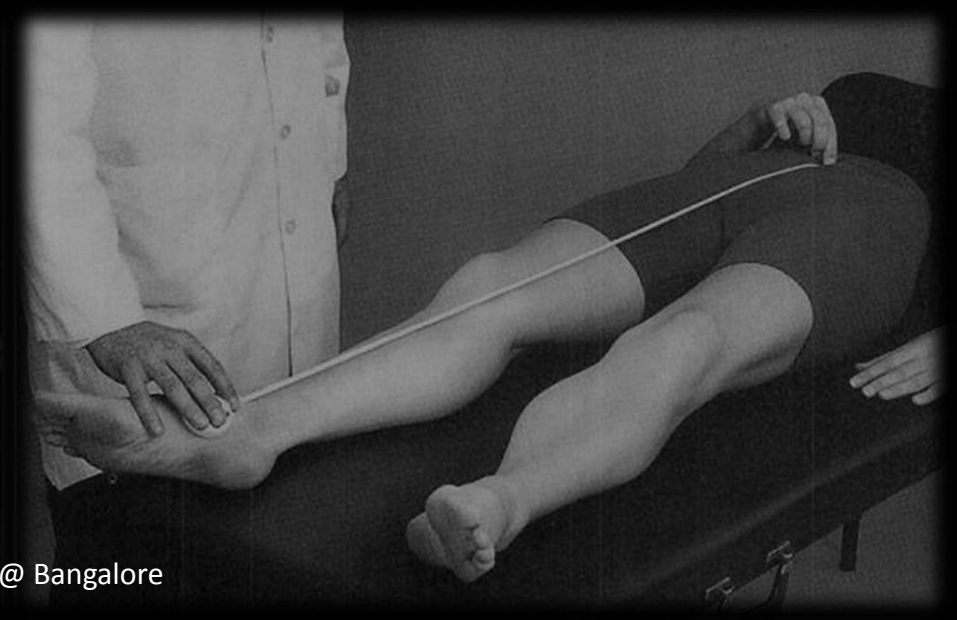
- APPARENT LENGTH
- FUNCTIONAL LENGTH
- PATIENT IN STRA IGHT LINE AND LIMBS PARELLEL, DEFROMITIES NOT CORRECTED
- FROM THE FIXED MIDPOINT TO THE MEDIAL MALLEOLUS



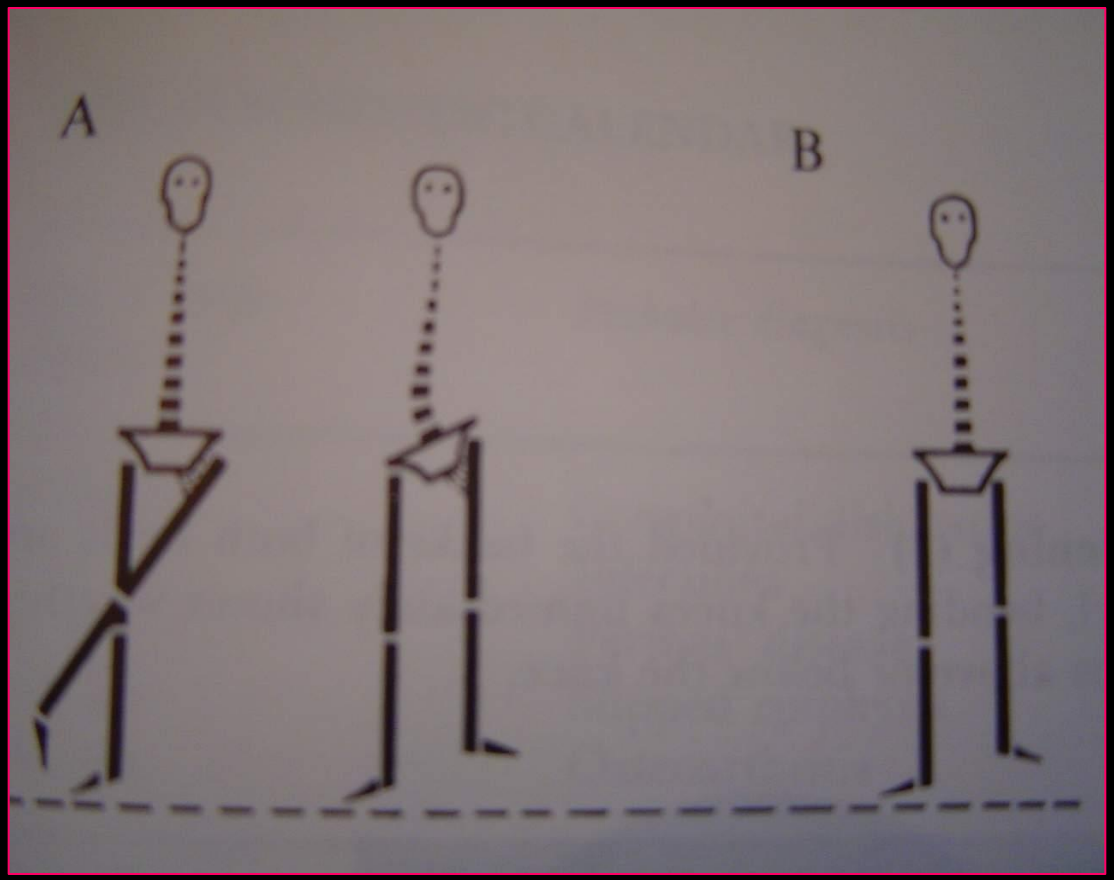
MEASURE







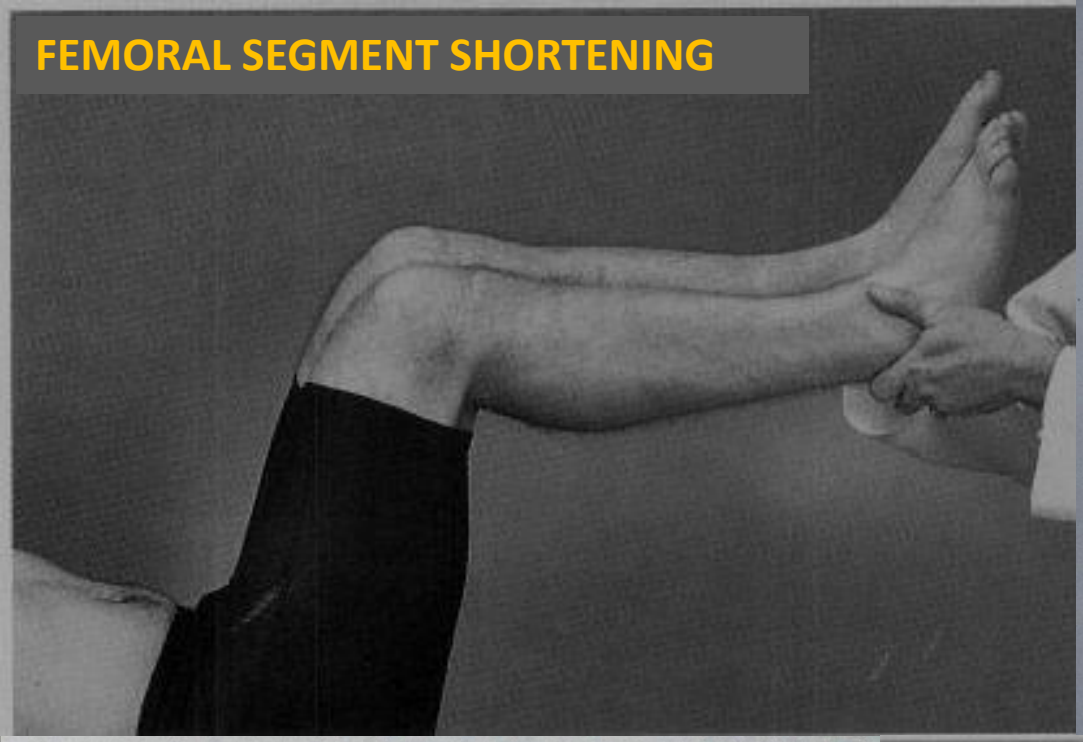
Apparent shortening & lengthening

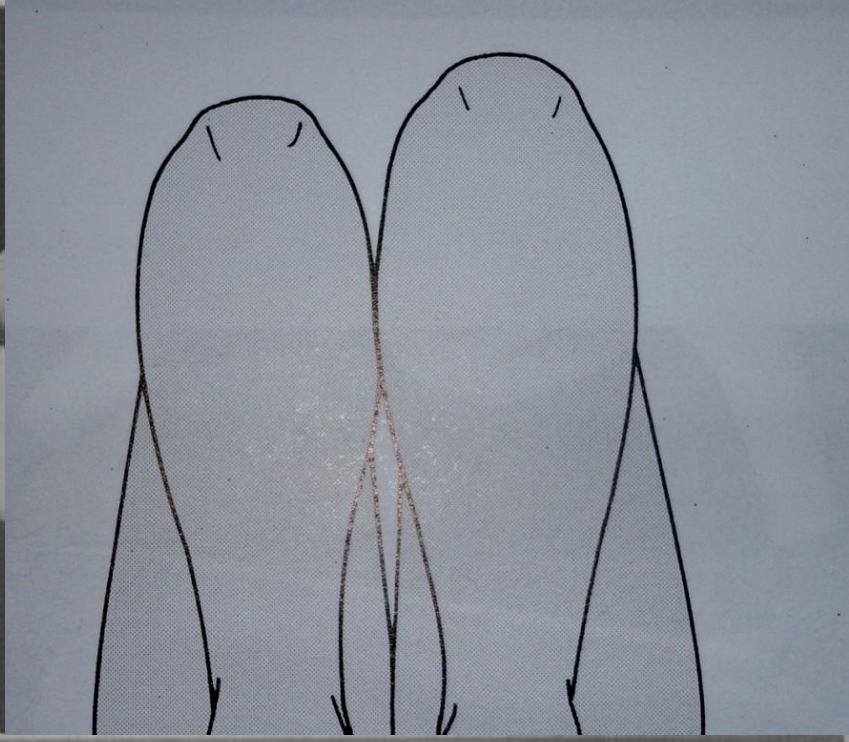


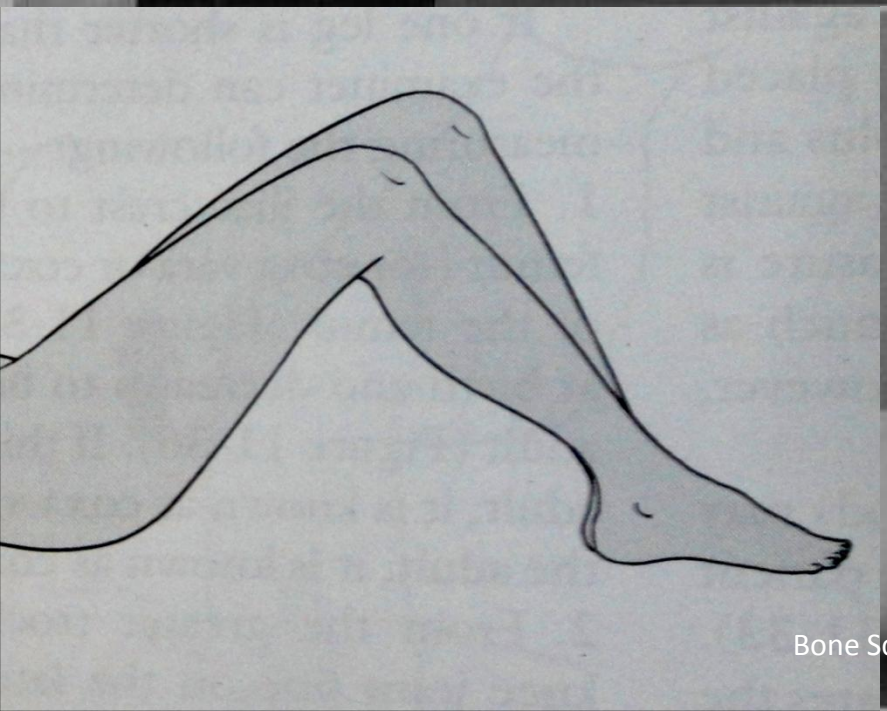
ADDUCTION → APPARENT SHORTENING

ABDUCTION → APPARENT LENGTHENING

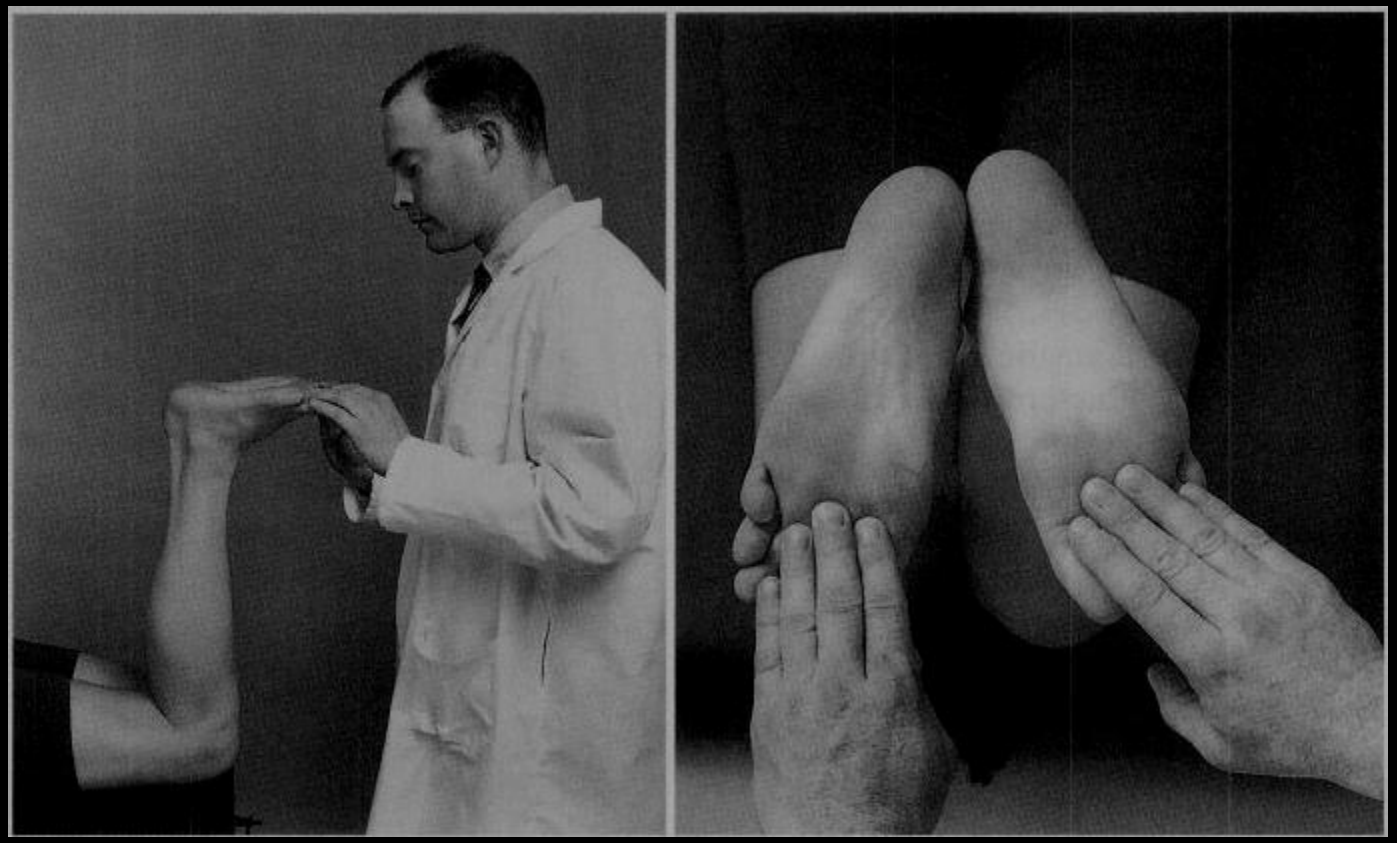
FEMORAL SEGMENT SHORTENING







TIBIAL SEGMENT SHORTENING



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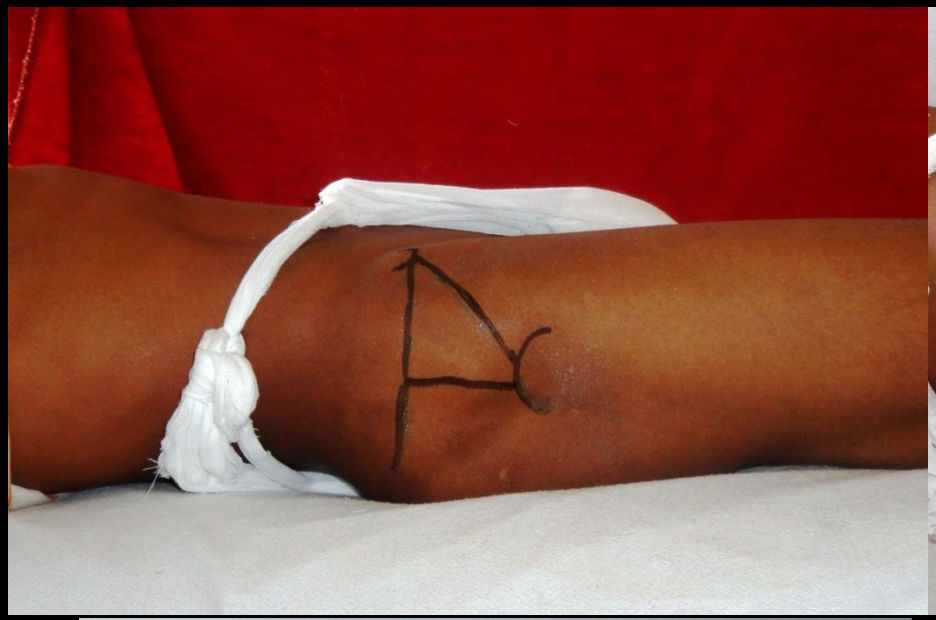
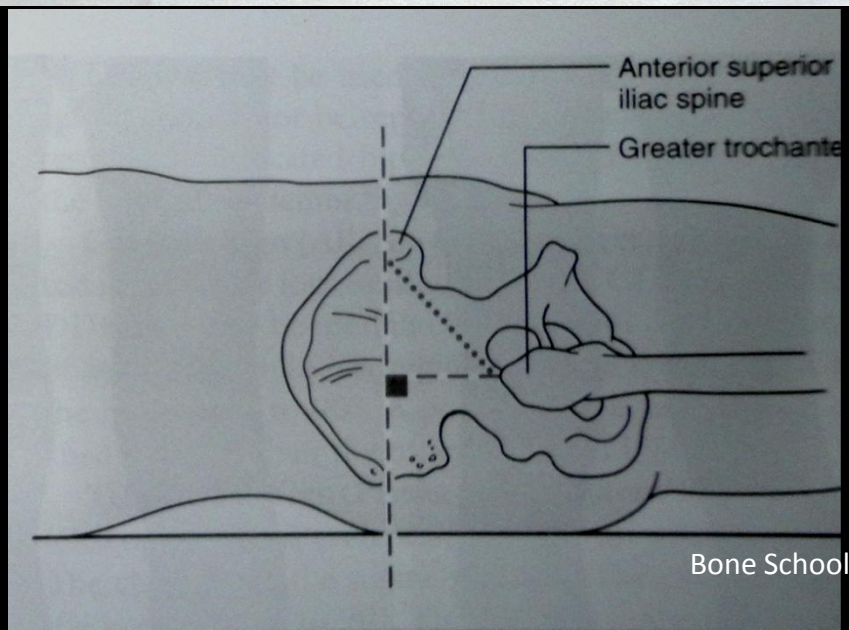
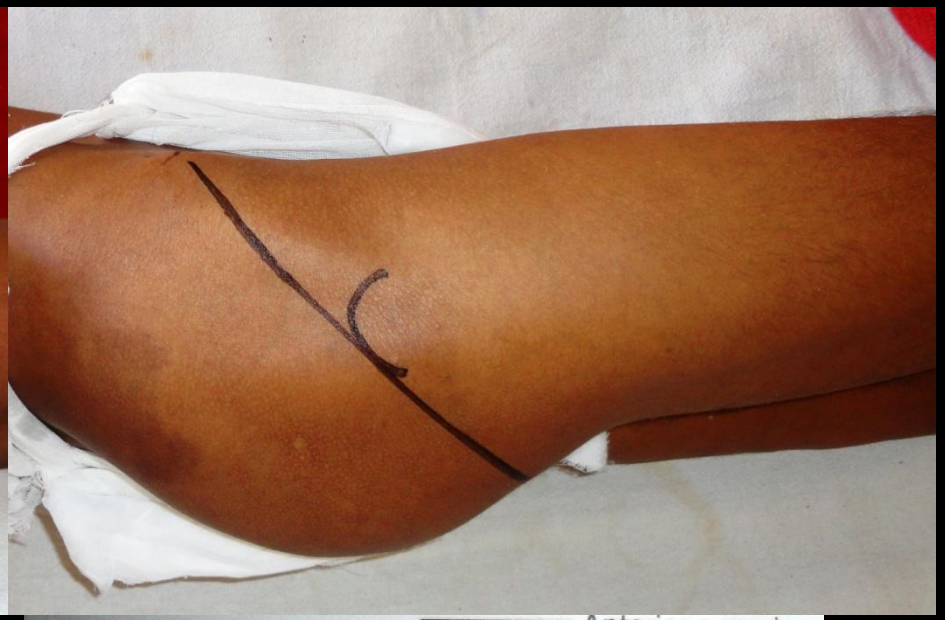
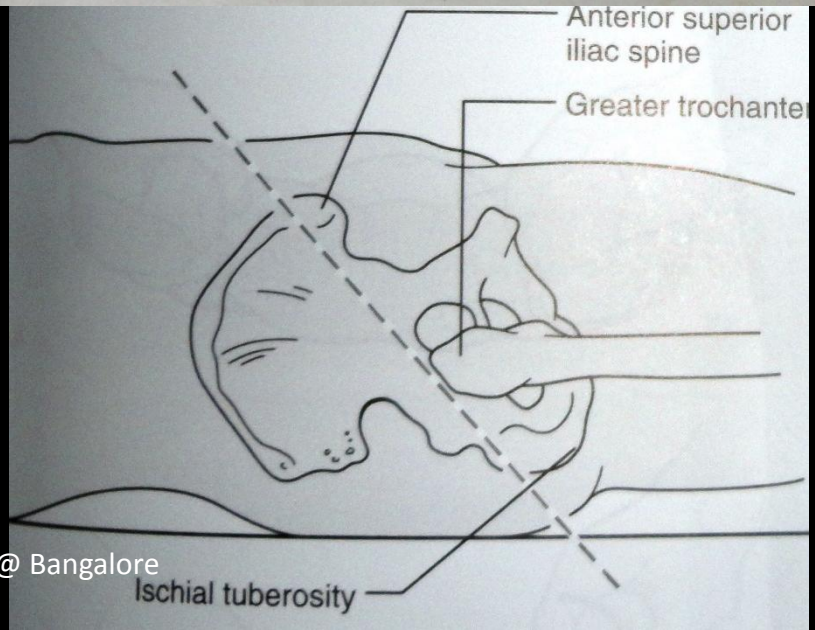
BRYANT'S TRIANGLE



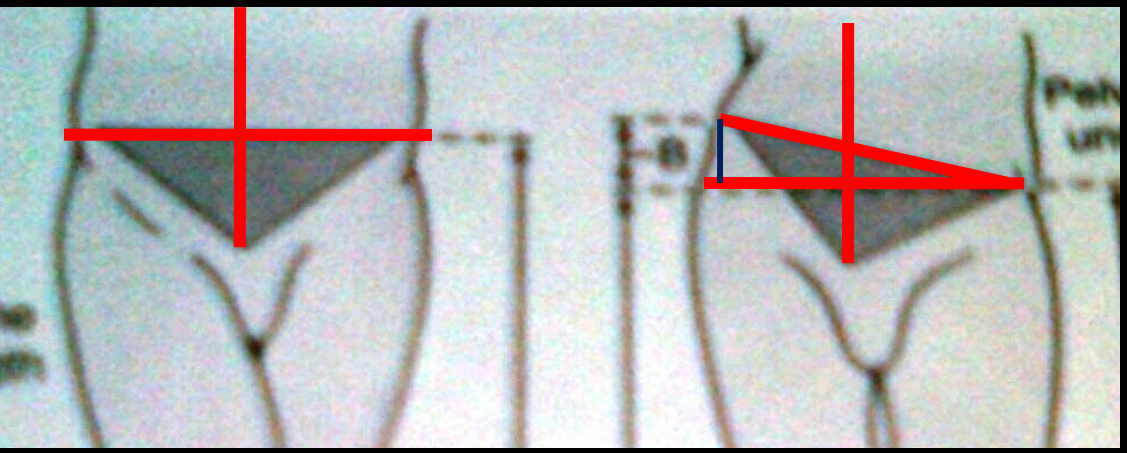


NELATON'S LINE





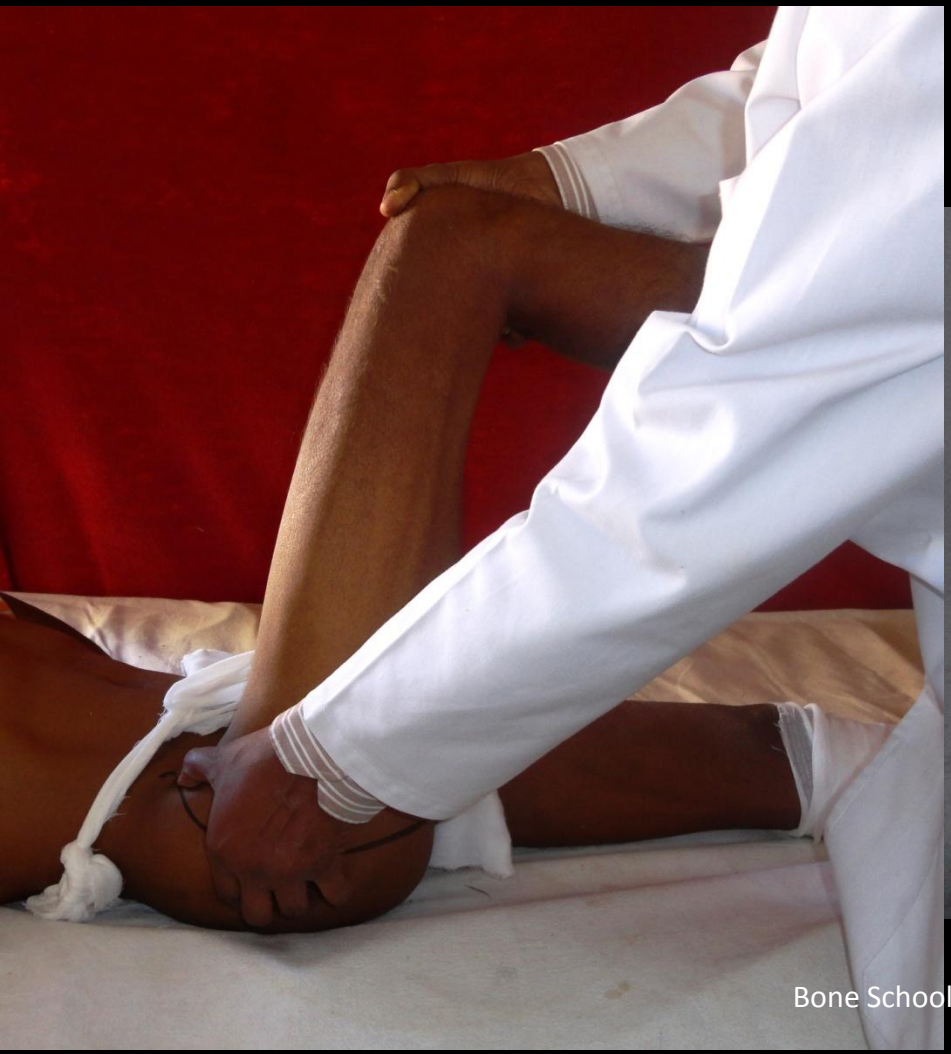
KOTHARI'S LINE

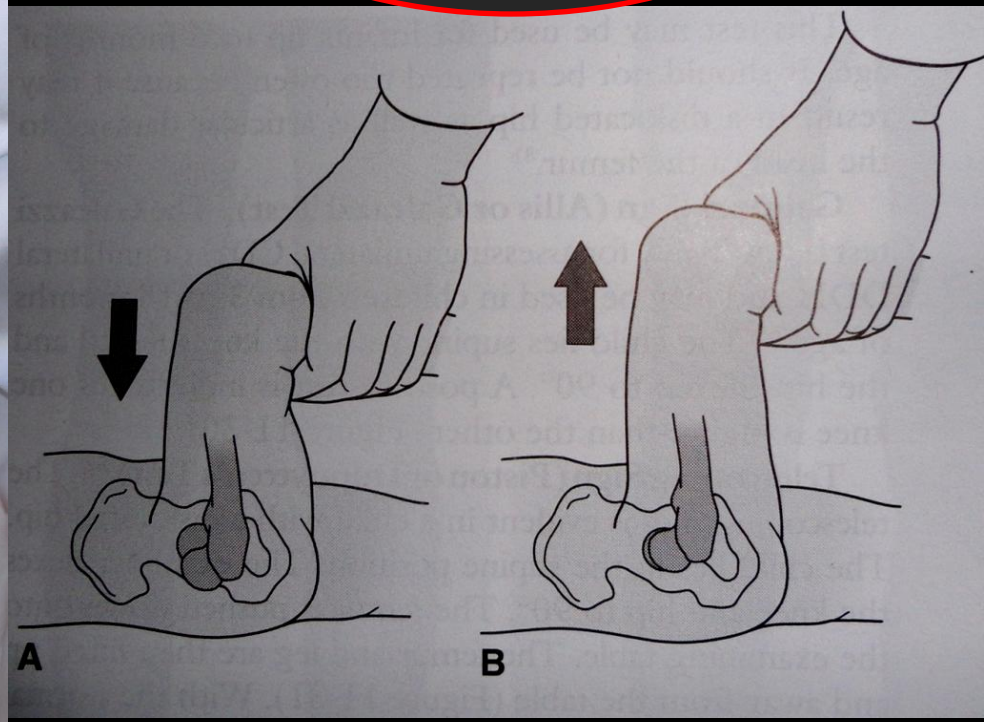


SHOEMAKER'S LINE

TELESCOPY

- FLEX THE HIP TO 90^0
- ONE HAND WITH THE THUMB ON ASIS AND THE REMAINING FINGERS OVER THE SOFT TISSUE PROXIMAL TO FEMUR
- OTHER HAND AT THE DISTAL FEMUR
- PUSH AND PULL THE FEMUR





NARATH'S SIGN

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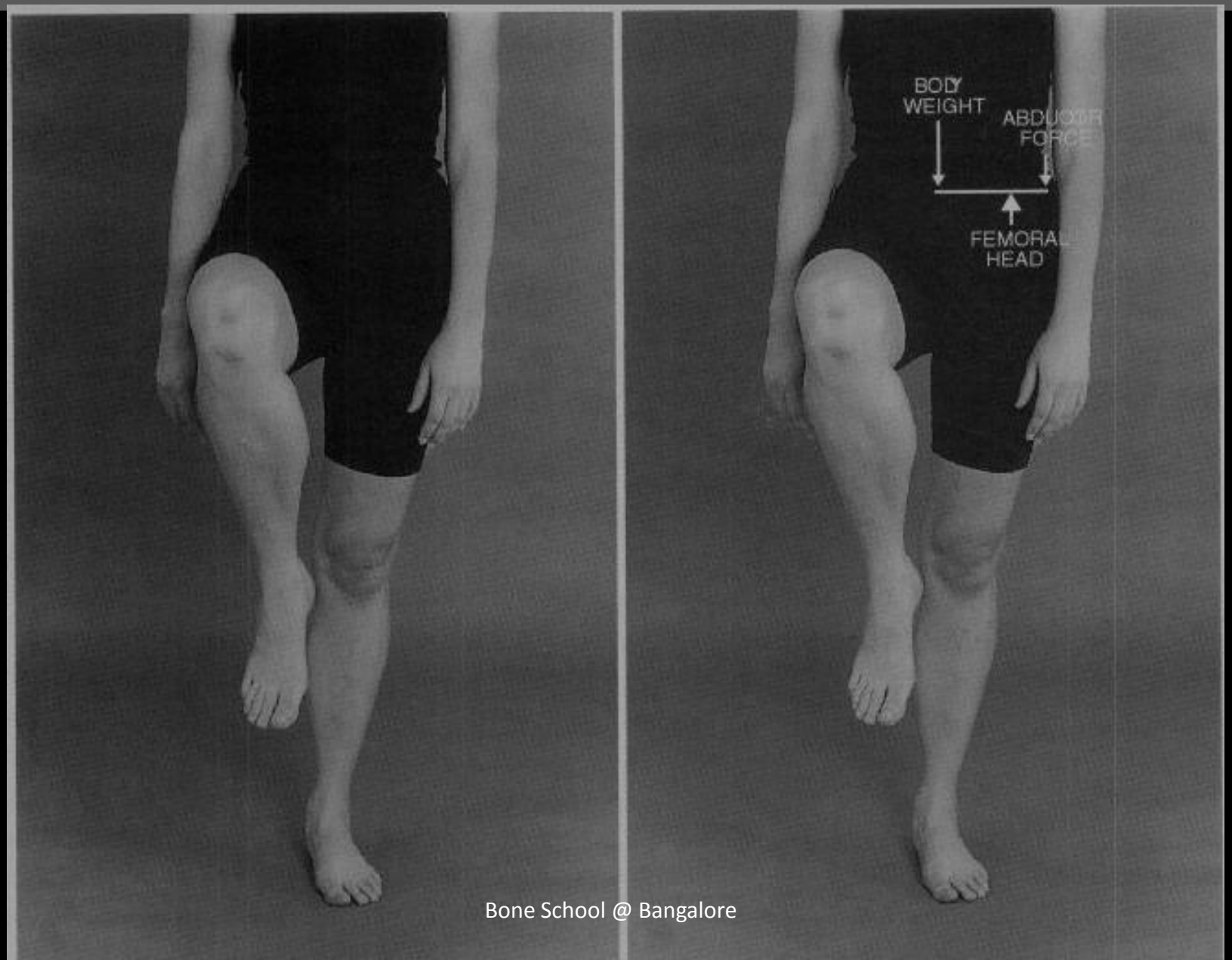
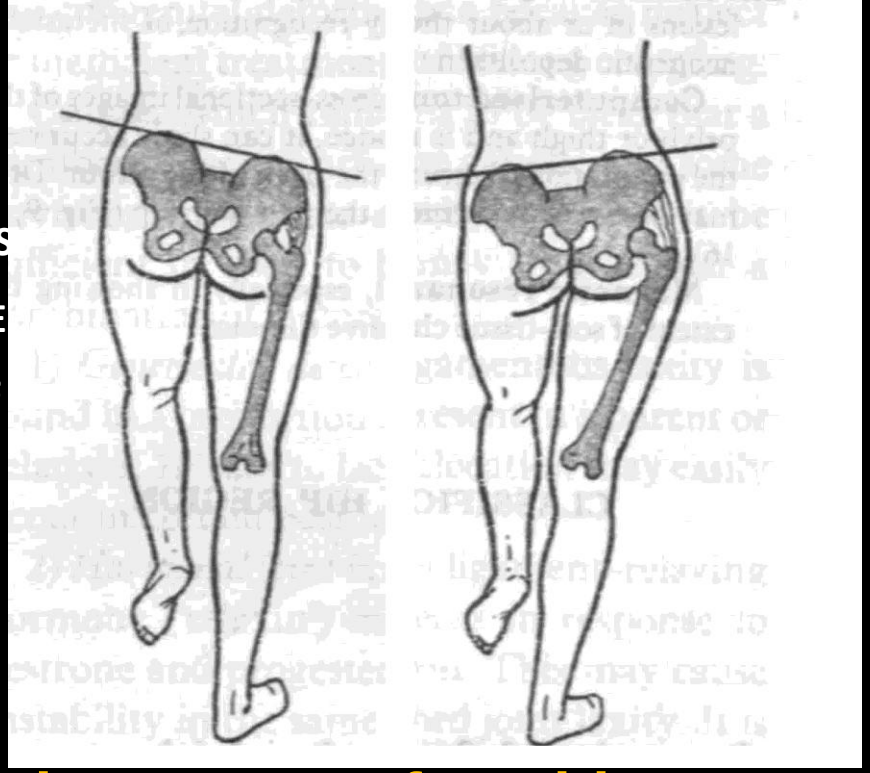
TRENDELENBURG TEST



TRENDELENBURG TEST

TRENDELENBURG TEST

- THIS TEST EXAMINE THE STRENGTH OF THE GLUTEUS MEDIUS. NORMALLY, IN A ONE LEGGED STANCE, THE PELVIS IS RAISED UP ON THE UNSUPPORTED SIDE. IF THE WEIGHT BEARING HIP IS UNSTABLE, THE PELVIS DROPS ON THE UNSUPPORTED SIDE, TO AVOID FALLING THE PATIENT HAS TO THROW HIS OR HER BODY TOWARDS THE LOADED SIDE.
- IN THE CLASSIC TEST, THE EXAMINER STANDS BEHIND THE PATIENT. IF THE PATIENT STANDS ON A HEALTHY HIP THE GLUTEAL FOLD ON THIS SIDE DROPS.
- IF THE PATIENT STANDS ON A DISEASED LEG THE GLUTEAL FOLD ON THE OPPOSITE SIDE DROPS (THE SOUND SIDE SAGS).



The causes of positive Trendelenburg test are:-

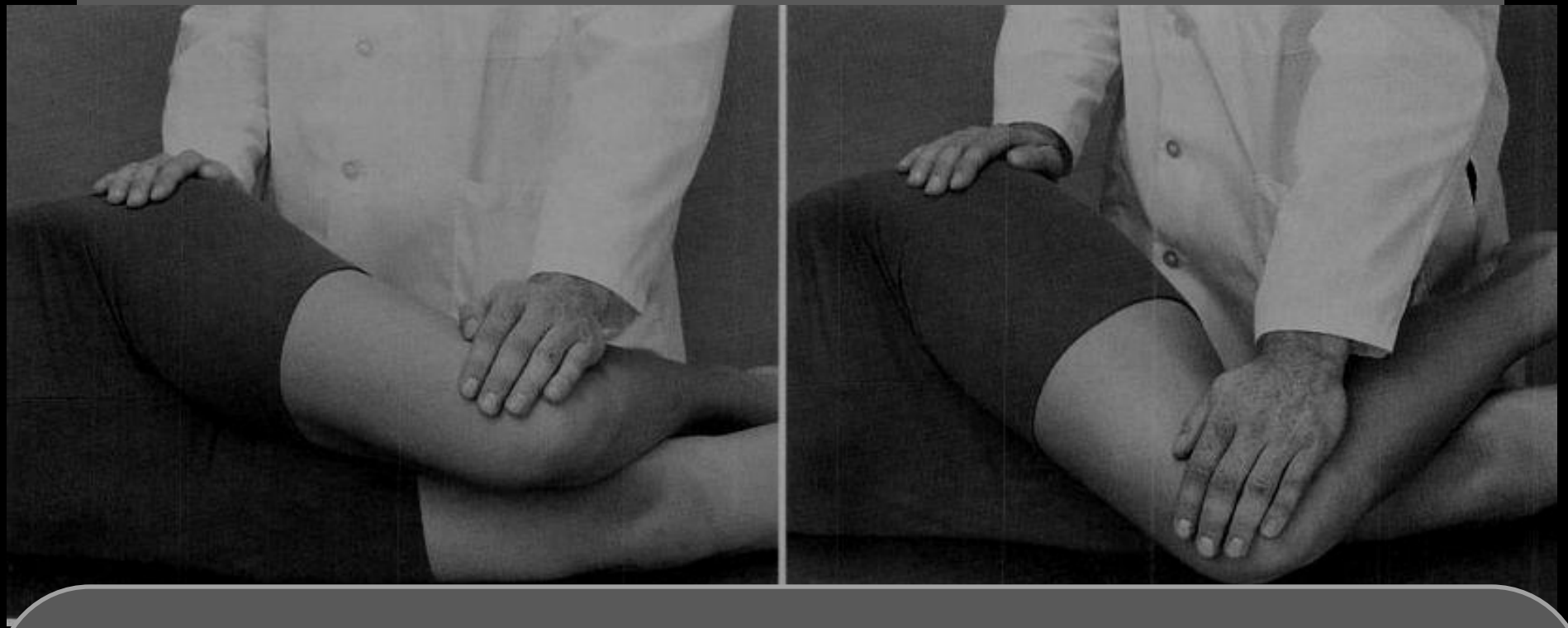
1.. Weakness of the hip abductors e.g. poliomyelitis

2.. Shortening of femoral neck e.g. coxa vara.

3. Dislocation or subluxation of the hip

FALSE POSITIVE: Pain on weight bearing

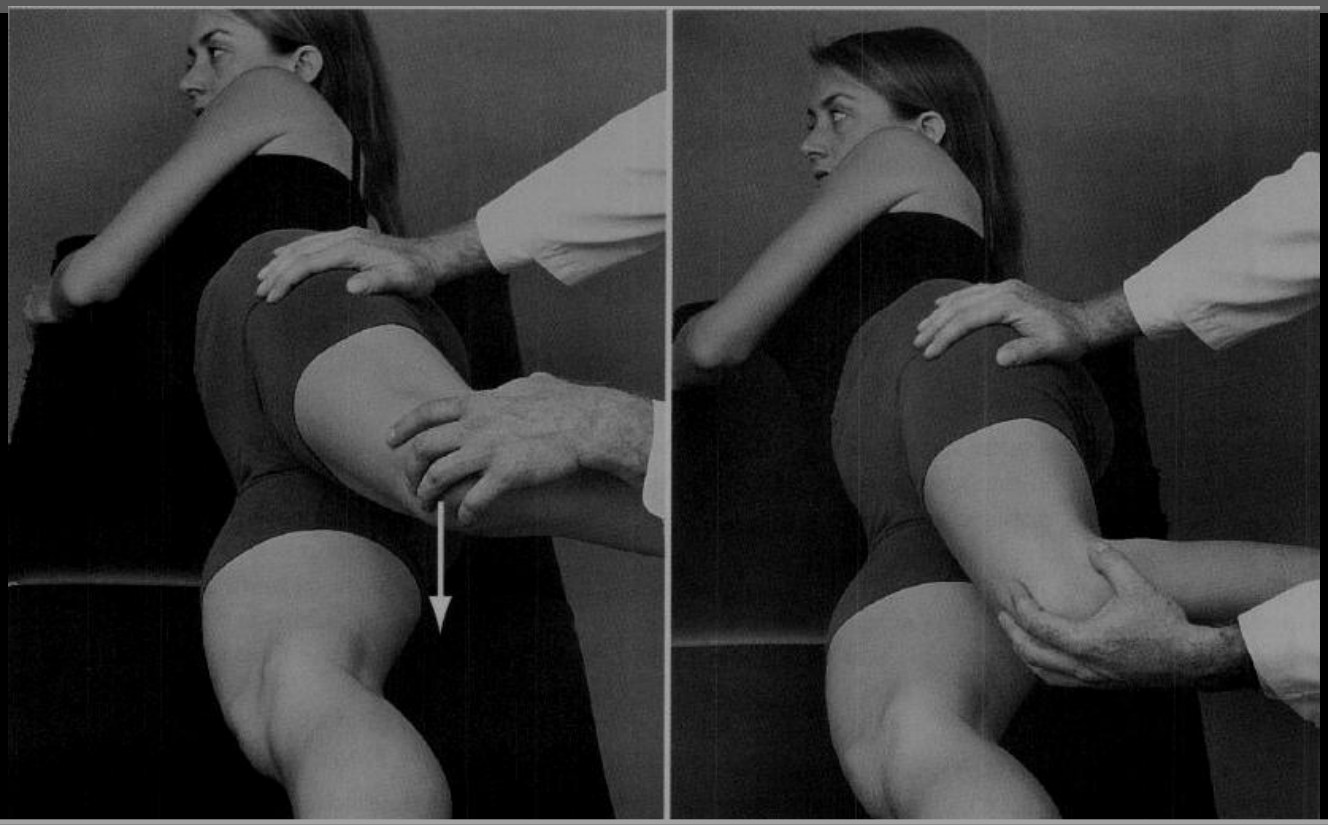
PIRIFORMIS TEST



- LATERAL DECUBITUS POSITION
- HIP IS FLEXED TO 45^0
- KNEE IS FLEXED TO 90^0
- ONE HAND STABILISES THE PELVIS
- OTHER HAND PUSHES THE KNEE ATO THE FLOOR CAUSING THE INTERNAL ROTATION
- PAIN LOCALLY-PIRIFORMIS TENDINITIS

- PAIN RADIATES DOWN-PIRIFORMIS SYNDROME

OBER'S TEST



TEST FOR ILEO-TIBIAL TRACT CONTRACTURE

LATERAL DECUBITUS POSITION

KNEE IS FLEXED TO 90^0

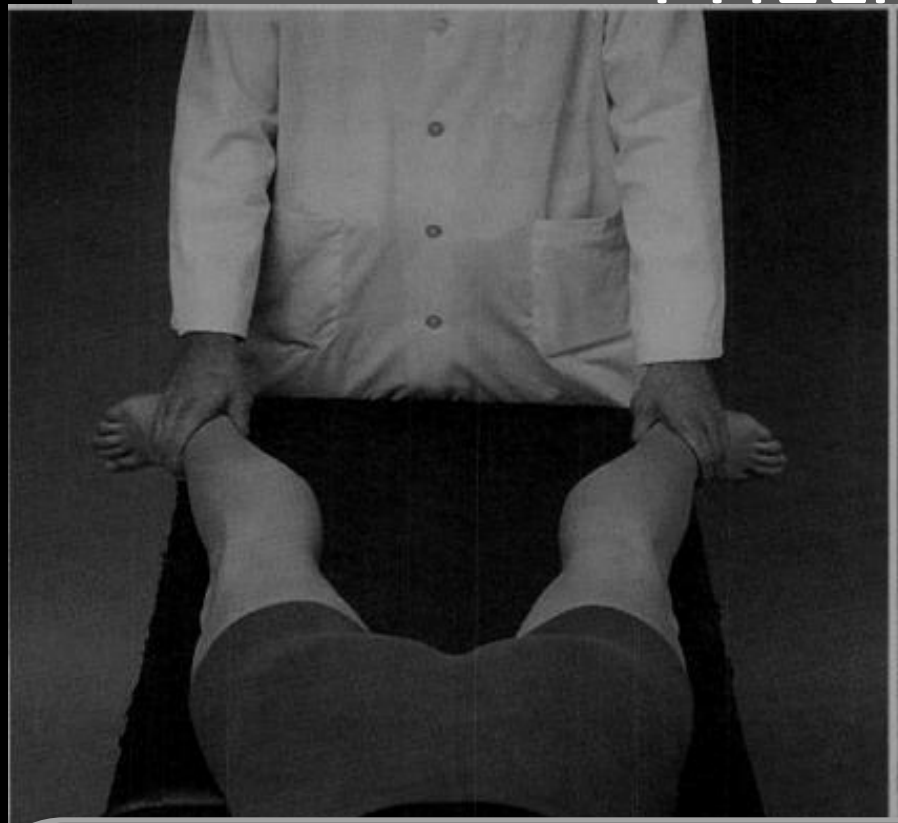
HIP IS ABDUCTED TO 40^0 AND EXTENDED

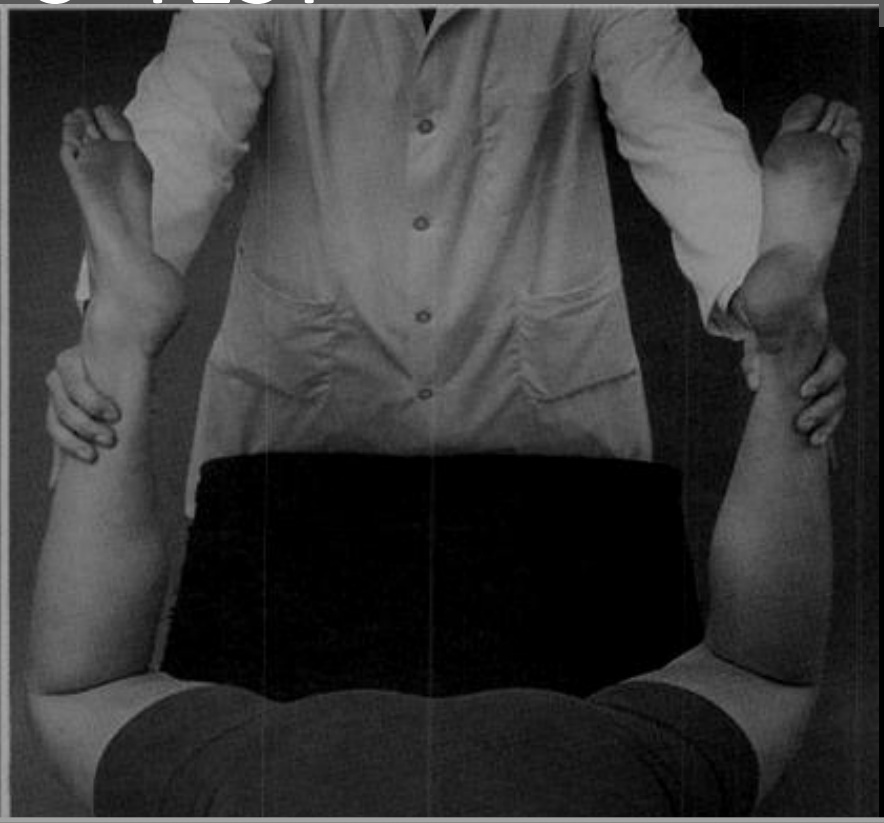
WITH THE HIP IN EXTENSION AND KNEE IN FLEXION AND PELVIS IS STABILISED

LIMB IS GENTLY ADDUCTED TOWARDS THE EXAMINING TABLE

NORMALLY THE HIP ADDUCTS AND THE LIMB CROSSES THE MIDLINE

PHELPS' TEST





TO DETECT THE CONTRACTURE OF GRACILIS MUSCLE

PRONE POSITION WITH THE KNEE EXTENDED

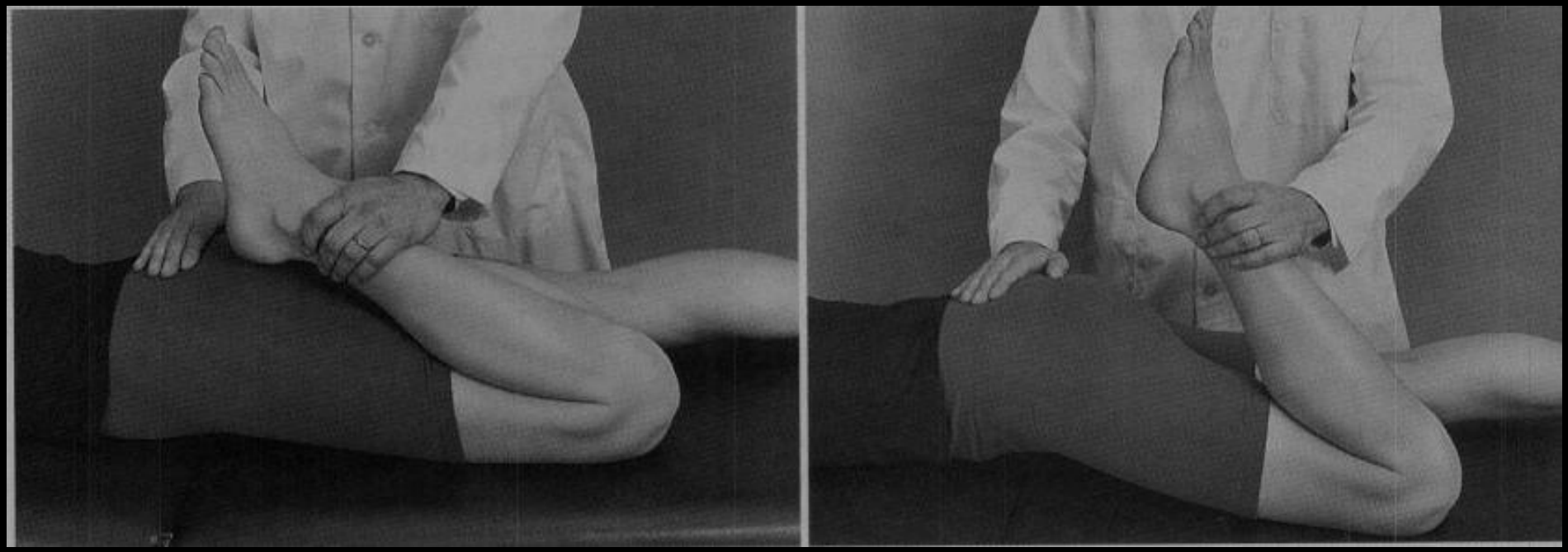
PASSIVE ABDUCTION TO THE MAXIMUM WITH THE EXTENDED KNEE

KNEES ARE THEN FLEXED TO RELAX GRACILIS

ATTEMPT TO FURTHER ABDUCT THE HIP WITH KNEE IN FLEXION

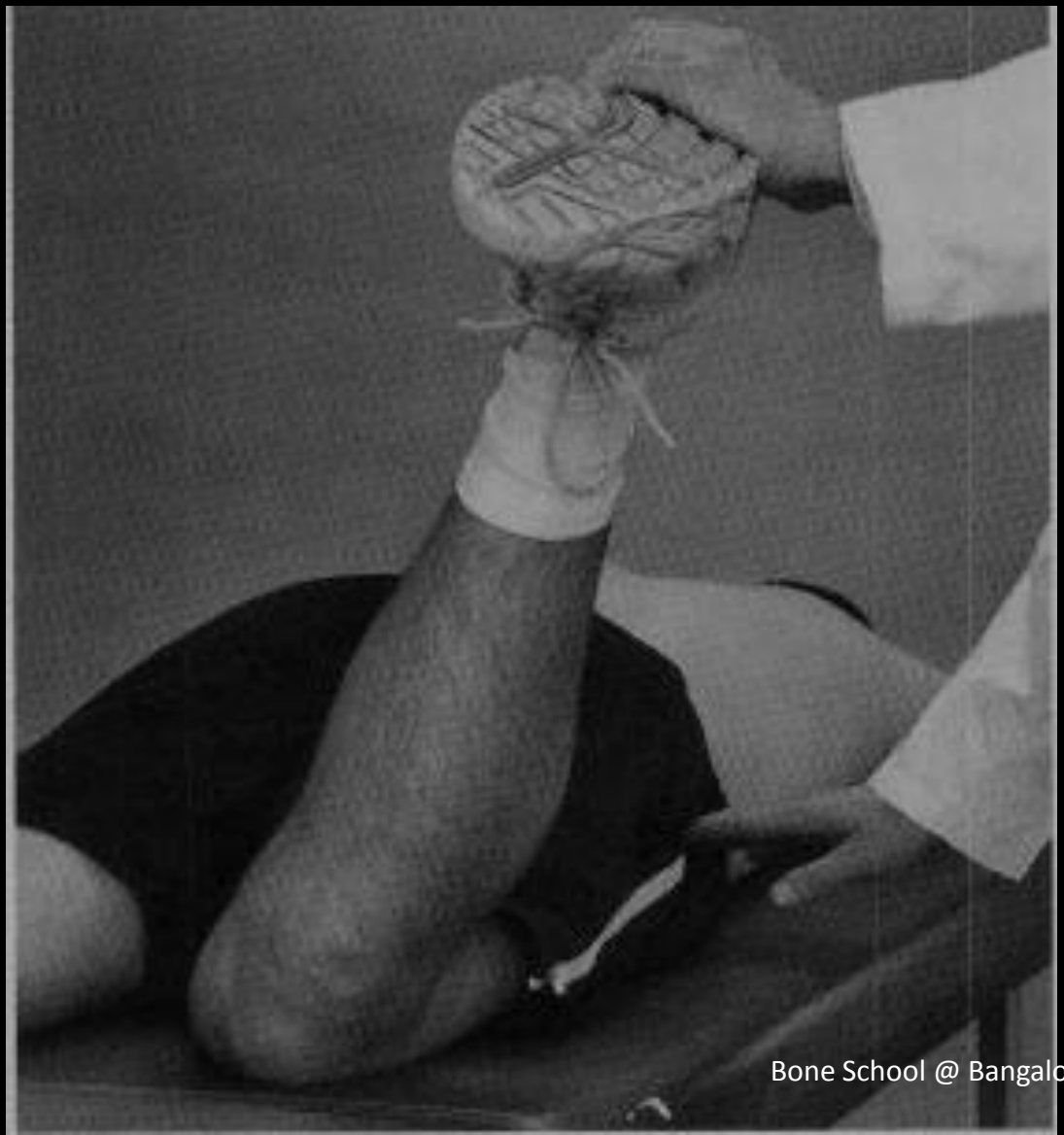
FURTHER ABDUCTION IS POSSIBLE IN GRACILIS CONTRACTURE

ELY'S TEST



FOR THE CONTRACTURE OF THE RE CTUS FEMORIS
PRONE POSITION WITH THE KNEES EXTENDED
PASSIVELY FLEX ONE KNEE TO BE TESTED
NORMALLY KNEE CAN BE FLEXED FULLY
IN CONTRACTED RECTUS FULL FLEXION OF THE KNEE FO RCES THE HIP INTO FLEXION
CAUSING THE RISE OF BUTTOCKS

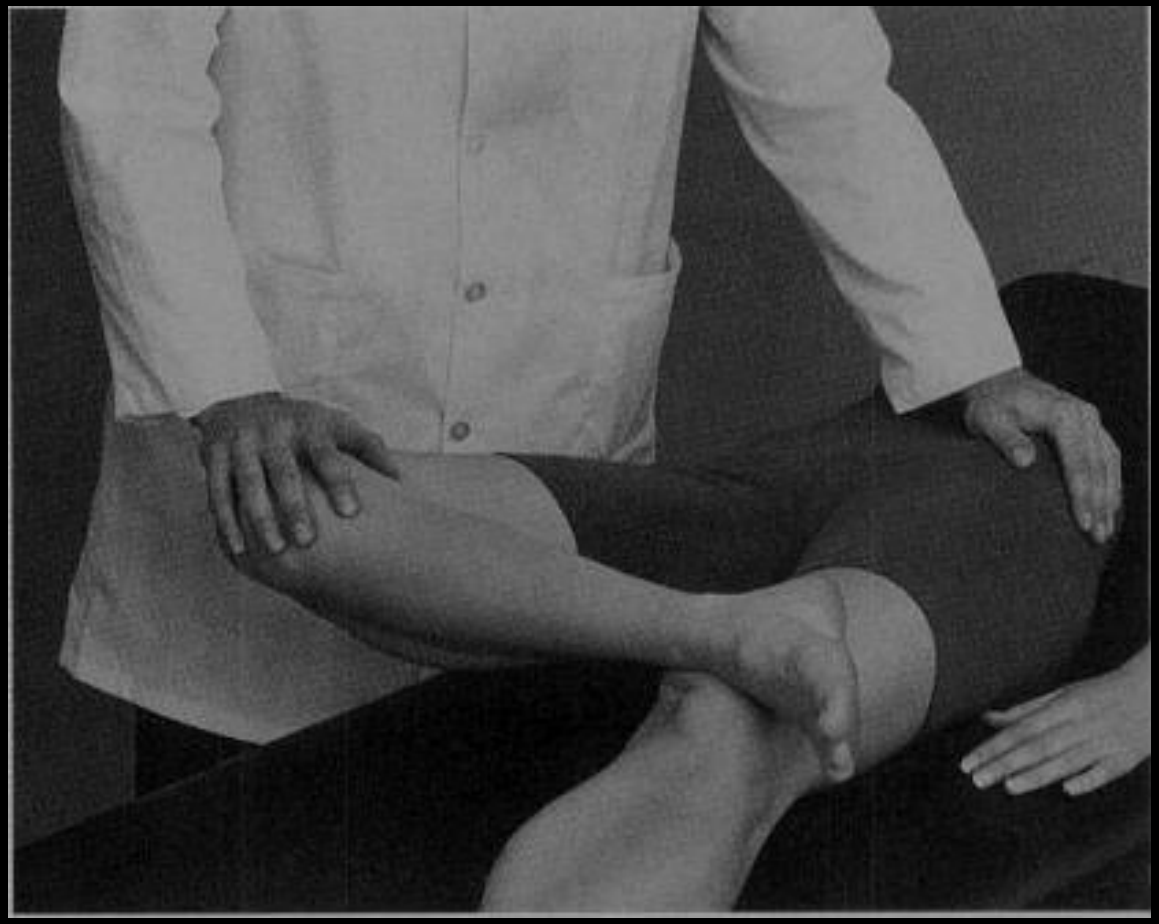
CRAIG'S TEST



FOR ANTEVERSION

1. **POSITIONED PRONE**
2. **KNEE FLEXED 90^0**
3. **ONE HAND OVER TROCANTER**
4. **OTHER HAND IS ROTATING THE LEG TILL THE TROCANTER FELT PROMINENT**
5. **ANGLE SUBTENDED BETWEEN THE IMAGINARY VERTICAL TO THE LONG AXIS OF THE LEG**

PATRICK'S TEST



- TEND TO STRESS THE IPSILATERAL S-I JOINT
- PAIN IS POSTERIOR IN S-I ARTHRITIS
- PAIN IS ANTERIOR IN HIP ARTHRITIS

IMPINGEMENT TEST

FLEXION – ADDUCTION – INTERNAL ROTATION

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NOT TO FORGET

- OPPOSITE HIP JOINT
- S-I JOINTS
- ILEAC FOSSA
- SPINE
- PER RECTAL EXAMINATION

THANKS FOR HEARING