

# Module 7 L07

## Factors Affecting Contact and Range of Motion at Synovial Joints

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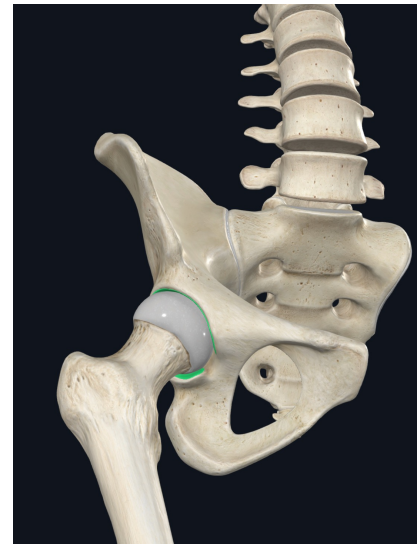
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# 7. Factors Affecting Contact and Range of Motion at Synovial Joints

- Articular surfaces of synovial joints contact one another and determine type and possible range of motion
- Range of Motion (ROM)
  - Refers to the range, measured in degrees of a circle, through which the bones of a joint can be moved.
- The following factors contribute to keeping the articular surfaces in contact and affect range of motion:
  - a) Structure of the articulating surfaces
  - b) Strength and tension of joint ligaments
  - c) Arrangement and tension of muscles
  - d) Contact of soft parts
  - e) Hormones
  - f) Disuse

## a) Structure or Shape of Articulating Bones

- Determines how closely they can fit together
- Spatial relationship is very obvious on the hip joint
  - Head of femur articulates with acetabulum of hip bone
  - Interlocking fit allows rotational movement



## b) Strength and Tension of Joint Ligaments

- Different components of fibrous capsule are tense only when joint is in certain position
- Tense ligaments
  - Restrict ROM
  - Directs movement of articulating bones with respect to each other



## c) Arrangement and Tension of Muscles

- Muscle tension reinforces the restraint placed on a joint by its ligaments, and thus restricts movement



## d) Contact of Soft Parts

- Point at which one body surface contacts another may limit mobility



## e) Hormones

- Affects joint flexibility
- Relaxin
  - Produced by placenta and ovaries
  - Increases flexibility of fibrocartilage of pubic symphysis
  - Loosens ligaments between sacrum and coxal bone
  - Permits expansion of pelvic outlet

## f) Disuse

- If joint has not been used – movement is restricted
- Disuse may also result in:
  - Decreased amounts of synovial fluid
  - Diminished flexibility of ligaments and tendons
  - Muscular atrophy
    - Reduction in size of muscle

