PHTY 103

Week 1 – Clinical Measurement and Gait

Clinical Measurement

- Clinical Measurement is a way of understanding, evaluating and differentiating characteristics of a client's presentation
- **Reasons for clinical measurement:**
    - Establish a database for typical 'behaviour'
    - Identify the problem (diagnosis)
    - Plan intervention
    - Evaluate intervention
    - Effective documentation
    - Effective communication (colleagues & others)
    - Research
- **What physios measure:**
    - Body functions and structure impairments (ie pain)
    - Activity limitations (ie difficulty sitting)
    - Participation restrictions (ie unable to drive)
- **What makes a good measurement:**
    - **Validity:** the extent to which an instrument measures what it is intended to measure
    - **Reliability:** the degree of consistency with which an instrument measures a particular attribute (variation when take on repeated occasions)
        - **Random error:** deviation from true measurement as a result of change
        - **Systematic error:** consistent deviation from true measurement
    - **Objective:** findings are reported without distortion by personal opinion or feelings
    - **Practicality:** capable of or suitable to being used or put into effect
    - **Sensitivity:** the ability to detect change or responsiveness to change
    - **Specific:** the ability to detect those patients who do not have the disorder ie a negative test

Posture and Gait

- **Postural alignment:** body position which requires least amount of muscular support
- **Why it is important:**
    - Faulty alignment can result in stress and strain of joints, ligaments and muscles
    - Affects balance
    - Implications on internal organs
- **Center of Mass:**
    - Point at the center of the total body mass

- Point at which all surrounding forces are equal

- **Base of Support**
  - Area of the body which is in contact with the supporting surface
  - If the body's COM is over the BOS support then it is balanced

Influences on posture

- Structure, hereditary factors
- Growth, maturation and ageing
  - Growth spurts in long bones and vertebrae mean they may not end up symmetrical
- Overuse and underuse
  - Muscle bulk and tightness
- Psychological
- Pain and pathology
  - Antalgic: pain revealing postures ie lumbar twist

Task	Joint	Movement ROM	Gravity (with / against)	Contraction type	Agonist	Other muscles involved e.g. Antagonist, stabiliser, synergist	Other factors
Single leg Squat-Down	Hip	Flexion 0-70°	With	Eccentric	Glut max	Abductors (med,min) Rotators Popliteus Hamstrings(rot)	Tightness? Posture? Weak glut med? Core stability Balance,Jt pathol
	Knee	Flexion 0-60°	With	Eccentric	Rec Fem VM, VL, VI	ABD/ADD Hamstrings TFL through ITB	Tightness Posture Core stability Balance,Jt pathol
	Ankle	DF 0-10°	With	Eccentric soleus	Passive? PF	Invertors/peronei Toes Flexors	Weak tib post Foot posture Ankle ROM – PF tightness,Jt pathol