

Physical Activity in Diseases and Disabilities

Locomotor apparatus

Evaluation of posture and functional stage of musculoskeletal system

- Determination of posture

- Traditional posture standards for male and female according to Klein, Thomas, and Mayer.

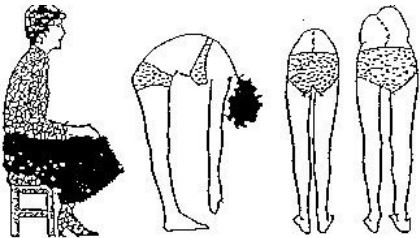
The methods recognize different criteria for the evaluation of posture in male and female according to silhouette images and classify postures into 4 different categories (excellent, good, weak, bad). Clinical examination is performed to independently evaluate the position of head, shoulders, and scapular bones; chest and abdominal profile; spine curvature; pelvic inclination; and position of lower extremities, including the foot arch.

Evaluation of spinal curve with plumb line

- The head should align directly over the sacrum, and any deviation from midline may reflect a spinal deformity. The examiner can detect deformity by dropping a plumb line from the spinous process of C7 or occipital bone down to the level of the gluteal cleft. The deviation of spine from plumb line and number of centimeters of the plumb line from the gluteal cleft is noted.
- We can measure the depth of spinal curve in cervical (normality= 2,5cm) and lumbar (normality= 4cm) region.

Another tests

- Adam's forward bending test



- Thomayer test- deep forward bend
 - Evaluation of length of hamstrings, erector of spine, unwinding of spine. Normality=third finger touching floor

Muscle test – postural muscles

With qualitative scale we are measuring:

Muscles with tendency to be shorted (postural muscles)

Evaluation:

1. without shortening,
2. moderate shortening,
3. pathological shortening
 - Calf (m. gastrocnemius, m. soleus)
 - Hamstrings (m. semitendinosus, m. semimembranosus, m. biceps femoris, m. gracilis)
 - Adductor muscles
 - Flexors of hip joint (m. iliopsoas, m. rectus femoris, m. tensor fasciae latae)
 - Extensor of spine (paravertebral muscles)
 - Pectoral muscles
 - Muscles in nape region (m. trapezius pars descendens, m. levator scapulae, sternocleidomastoid)

Muscle test – weakness

Muscles with tendency to be weak together with motion stereotypes

Evaluation: motion stereotype: 1. good

2. poor

muscle weakness: 1. good,

2. moderate weakness,

3. pathologically weak

- Motion stereotype of extension of lower extremity + power of gluteal muscles
- Motion stereotype of flexion of trunk + power of abdominal muscles
- Motion stereotype of abduction of arm + power of deltoid muscle
- Motion stereotype of flexors of neck + power of deep flexors of neck and head