

Derived Positions

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Lecture II

Derived position from standing

B) By alteration of the legs

Achieved by change in the shaper size of the base.

- 1- Toe standing.
- 2- Stride standing.
- 3- Walk standing.
- 4- Half standing.

1- Toe standing

- The heels are pressed together and raised from the floor.
- Effect:
- The base is reduced and the center of gravity is raised.



Toe Standing

- Uses:
- It is used as a balance position.
- There is a tendency for the whole body to stretch so it is used as treatment for postural flat feet and posture training generally.



2- Stride standing

- The legs are abducted and the heels are apart and remain in 45° .
- **Effect:**
- Large base lead to easy and stable position.
- **Uses:**
- Used as starting easy position for many exercises.



3- Walk standing

- One leg is placed forward to the same line of the other leg.
- **Effect:**
- The base is much enlarged in the antro-posterior direction stabilizing the body for exercises in a sagittal plane. Rotation of the pelvis towards the side of the forward leg is prevented by the position of the back leg.
- **Uses:**
 - 1- Localize rotation of the spine.
 - 2- Tension on the hamstrings of the forward leg prevents forward tilting of the pelvis in trunk flexion exercises.





4- Half standing

The whole weight of the body is supported on one leg, the other may be free or supported in a variety of the positions.

- **Effects:**

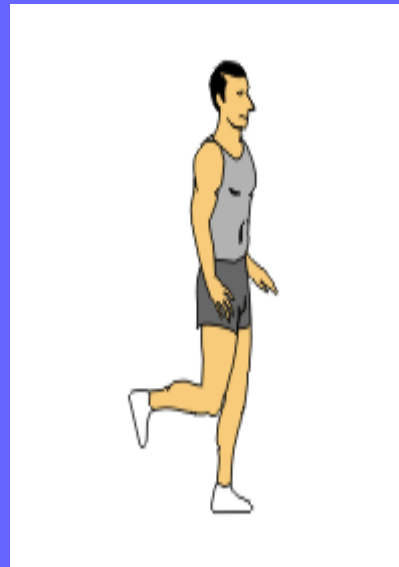
Balance is very difficult with one leg. The free leg can rest in many positions like stool with flexed hip and knee (step st.). This position reflexes the tension of the abdominal operations.



4- Half standing

- Uses:

Increase tension of the hamstring of the lower leg and straightening of the lumbar spine.





Standing with trunk alteration

- 1- Stoop standing.
- 2- Lax stoop standing.

1- Stoop Standing

- The hip joints are flexed while the trunk, head and arms remain in alignment and are inclined forwards. The angles to which the trunk is inclined is usually about a right angle but depends on the tension of the hamstring which controls the forward tilting of the pelvis when the knees are straight.





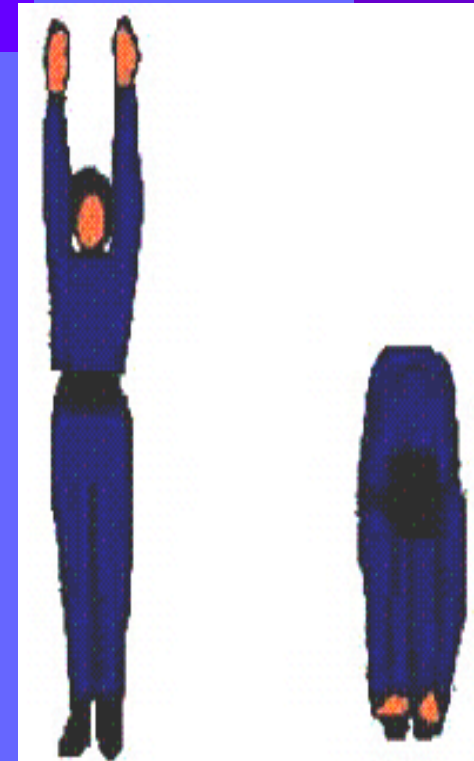
1- Stoop Standing

- Effects and Uses:
- Can be used as strength position for neck and back muscles.
- Training for good posture of upper back muscles.
- Very difficult but gives good results.



2- Lax Stoop Standing

- The hips are flexed and the trunk, head and arms are relaxed so that they hang forwards and downwards. Balance is maintained by a slight plantar flexion at the ankle joints, causing a backward inclination of the leg.



2- Lax Stoop Standing

- Effect:

The amount of forward flexion is dictated by tension which develops in the hamstring and lumbar muscles.



2- Lax Stoop Standing

- Uses:
- 1- As a position for test hamstring muscle tension.
- 2- To train local relaxation of the upper body.
- 3- To assist expiration.
- 4- It is used prior to extension exercises of hips and spine, particularly those which occur progressively, as in uncurling to the upright position.



2- Lax Stoop Standing

- 5- The position is unsuitable for weak or elderly patients as the dependent position of the body causes an increased blood flow to the head which may be followed by depletion on rising to the upright position and consequent feeling of giddiness.
- 6- When the knees are allowed to bend in the position (lax.stp.k.bd.st.), tension on the hamstring and lumbar muscles is reduced, giving a feeling of relaxation right through the body.



B- position Derived from Kneeling

- The positions of the arms are the same as in the standing and may be added to the kneeling position as required.

1- Half Kneeling

- One knee supports most of the weight and other leg is bent to a right angle at hip, knee and ankle so that the foot is supported on the ground in a forward direction.



1- Half Kneeling

- **Effect and Uses:**
- The position is similar to the step standing and may be modified by stretching the forward leg in a sideways direction (L.str.1/2kn). The pelvis is well fixed in the position for trunk side bending and rotation exercises.



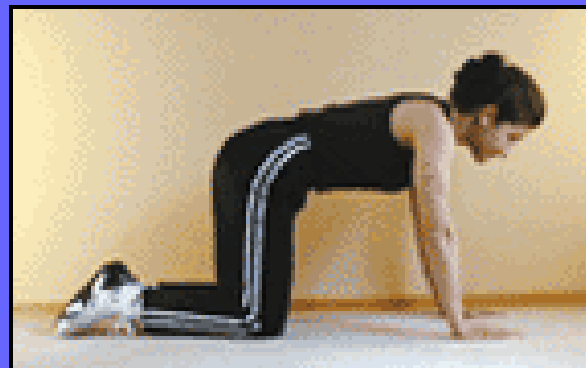
2- Kneel Sitting

- The knees and hips are flexed so that patient sits on his heels.
- **Uses:**
- Sometimes used for small children, but most people find it very uncomfortable.



3- Prone Kneeling

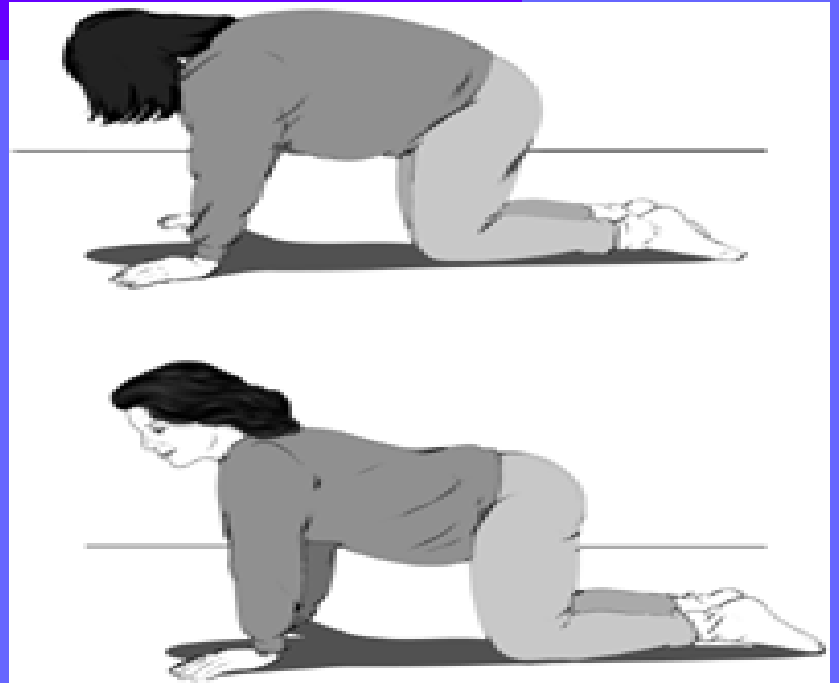
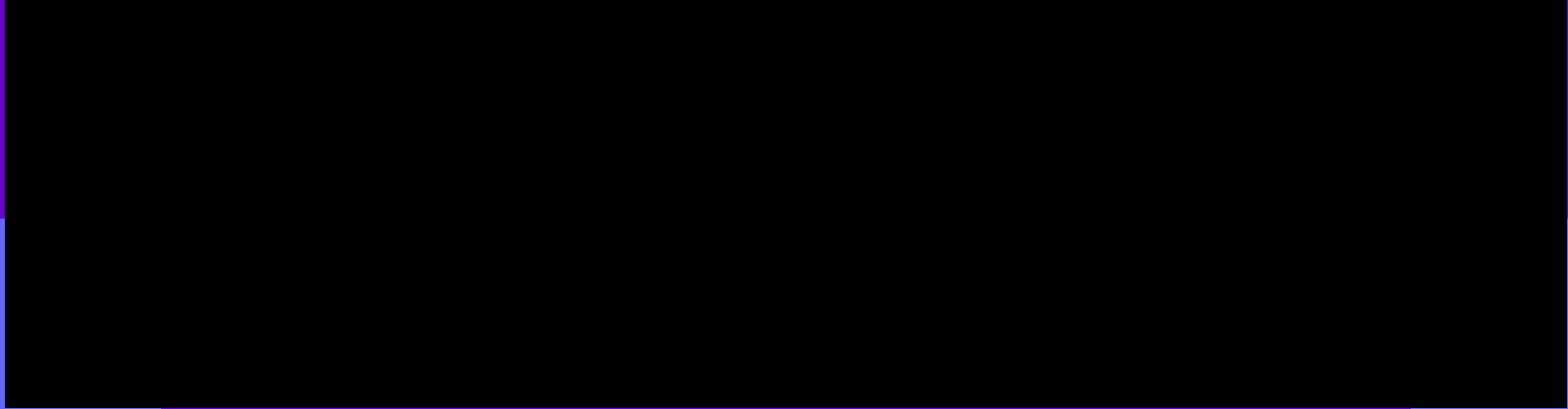
- The trunk is horizontal, supported under the shoulders by the arms, and at the pelvis by the thighs, which must be held vertical. The head is held in line with the trunk.



3- Prone Kneeling

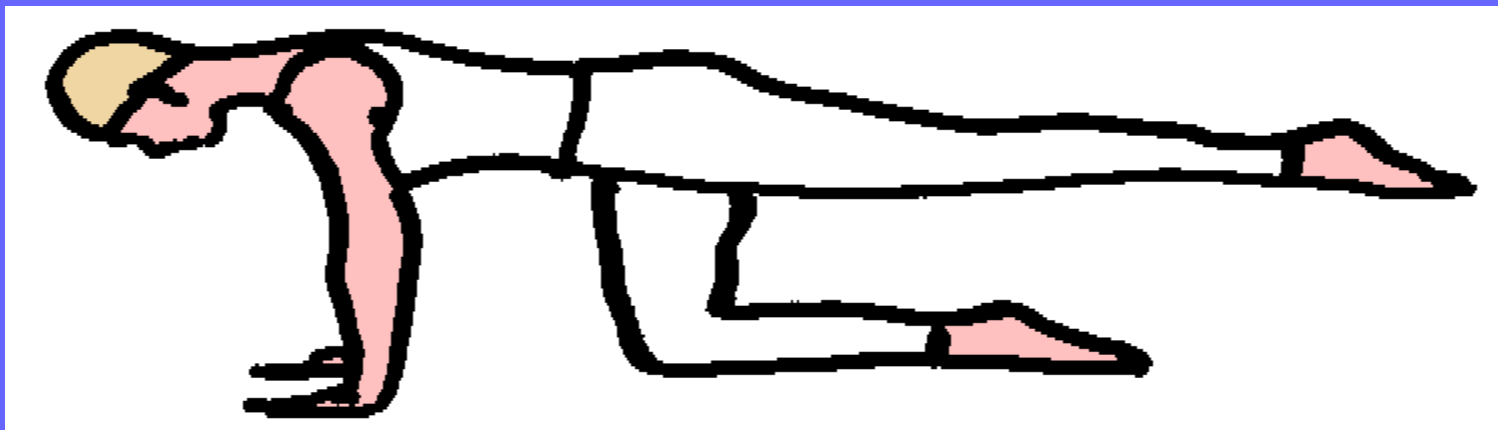
- Effect and Uses:
- The position is stable, comfortable and suitable for many trunk and head exercises. The pelvis is free for antro-posterior and lateral movement, but fixed rotation. The body may be inclined forwards and downwards by abducting the shoulders and bending the elbows (incl.pr.kn.), this expands the thorax and localizes lateral flexion to the thoracic region.





3- Prone Kneeling

- Alternatively, the forearms may rest on the floor with hands together and the head resting on them; in this way weakened pelvic floor can be relieved of the weight of the viscera or the uterus may be assisted by gravity into the normal position.

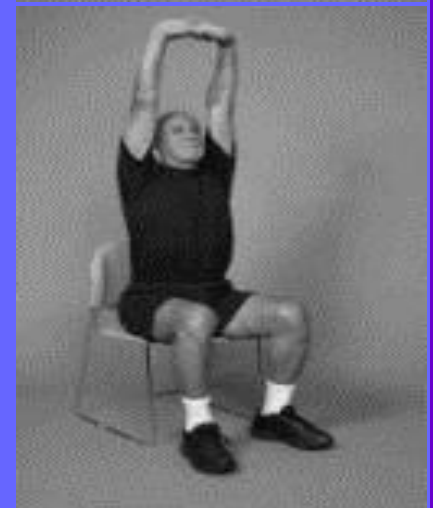


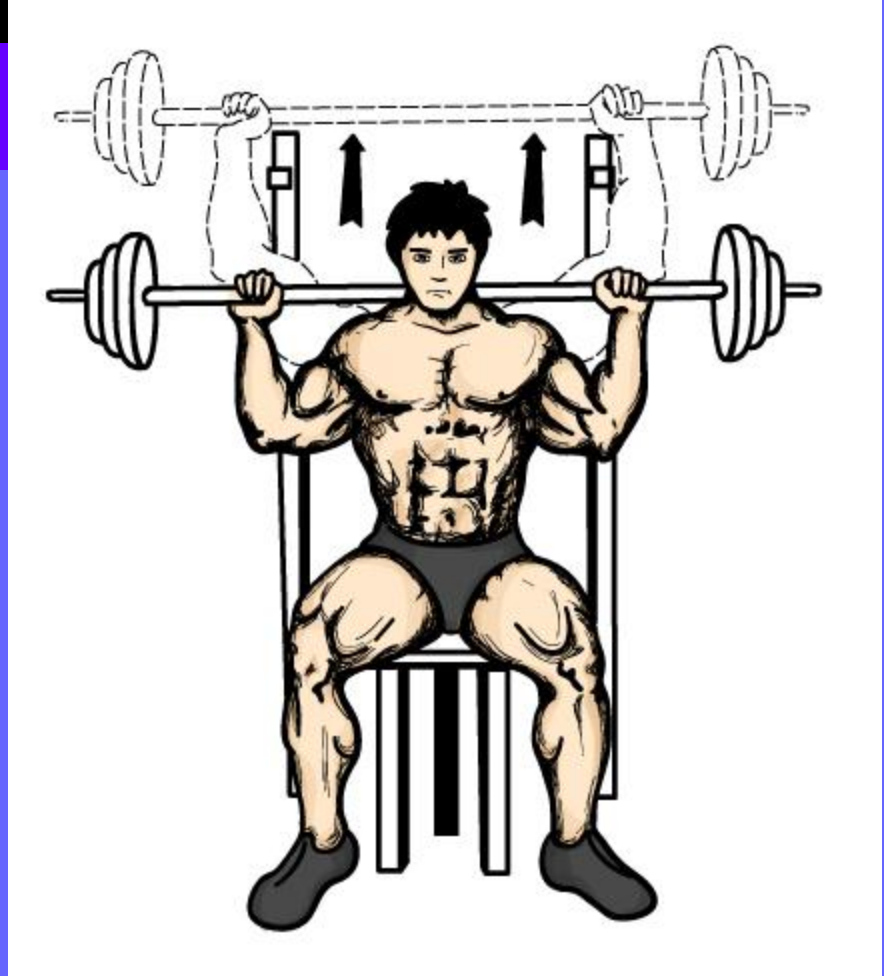
Positions Derived from Sitting

- 1- Stride sitting.
- 2- Ride Sitting.
- 3-Crook Sitting.
- 4- Long sitting.
- 5- Cross Sitting
- 6- Side sitting.
- 7- High sitting.

1- Stride Sitting

- This is exactly similar to the fundamental position, except that the legs are abducted so that the feet are two foot-length apart.
- Effect:
- It increases the stability of the position, especially if the feet are pressed to the floor.





1- Ride Sitting

- The patient sits astride apparatus, such as gymnastic form, which may be gripped between the knees by the abductor muscles of the hips, making it a very steady position for head, arm and trunk exercises.



1- Ride Sitting



- When the position is taken on a high plinth (high ride sit), the thighs may be strapped to the plinth to afford additional fixation, in which case no muscle work is required in legs.



3- Crook Sitting

- When sitting on floor, the knees are bent so that the feet are together and flat on the floor. The knees may be together or apart.



3- Crook Sitting

- Uses:
- Used in treatment of kyphosis as the movement can be localized to the upper trunk.
- Increases the strength of back extensors.



4- Long Sitting

- This is similar to the previous position, but the knees are extended so that the whole leg is supported.
- Effect:
- It leads to increase tension of hamstring.
- Uses:
- Position is difficult due to instability.



5- Cross Sitting



- This is also similar to crook sitting, but the ankles are crossed and the hips strongly abducted and laterally rotated, so that the lateral aspect of the knees is pressed to the floor. Tension on the hamstring muscle is reduced but the adductors of the hip are stretched.



5- Cross Sitting

- Uses:
- It is suitable for children during head, arm and trunk exercises as the pelvis is fixed and stable.



6- Side Sitting

- For the left side sitting the left leg remains as in cross sitting and this hip supports the main weight of the trunk, while the right leg is abducted and medially rotated so that the lower leg is bent and to the side. The pelvis is tilted laterally to the left, and the lumbar side flexors on the right side work to keep the trunk upright.



6- Side Sitting

- Uses:
- To increase lateral mobility of the lumbar spine or the fixation in the side bend position when treating scoliosis.



7- High Sitting

- The fundamental sitting position is taken on a high plinth or table but the feet remain unsupported.
- Uses:
- It is convenient some foot and knee exercise.



D- Position Derived from Lying

- The same as in the standing position, the muscle work, is modified and usually reduced by the horizontal positions of the body.

1- Crook Lying

- From lying, the hip and knees are bent so that the feet rest on the floor or plinth. Very little muscle work is required apart from that of the abductors and medial rotation of the hips to prevent the knees from falling apart.



1- Crook Lying

- Tension is removed from the structure anterior to the hip joint so that the pelvis rolls backward and the lumbar spine is relaxed on to the supporting surface.
- Uses:
 - 1- To train relaxation and posture.
 - 2- In pelvic and back exercises.



2- Crook Lying with Pelvis Lifted

- From the previous position, the pelvis is elevated so that the trunk rests on the shoulders and is brought into line with the thighs. A firm pillow may be used to support the buttocks, or the extensors of the hips may work to hold the position.



2- Crook Lying with Pelvis Lifted

- Effect:
- Pressure of the viscera on the pelvis floor is relieved by the gravity as the weight of the viscera is directed backwards and upwards towards the diaphragm; because of this, breathing may be hampered slightly.
- Uses:
- After childbirth for strengthening pelvic labor muscles.



3- Half Lying

- The trunk is supported in the oblique position by inclination of the long end of the plinth, or by the arrangements of the pillows, in which the legs are supported horizontally. It is important to see that the trunk is in an alignment to avoid slumping and so, impeding respiration.



3- Half Lying

- Effect:
- The knees may be bent to increase relaxation of the abdominal wall (crk.1/2 ly.), or the lower leg may hang over the end of the plinth with feet resting on the floor.
- Uses:
 - 1- It is much used forward exercises.
 - 2- Relaxed and comfortable position for weak and elderly people.
 - 3- Breathing is easier than in lying, so it is used in many chest conditions.



4- Prone Lying

- Lying facing downwards, the body is fully supported anteriorly on the plinth or the floor. The position may be active or relaxed.



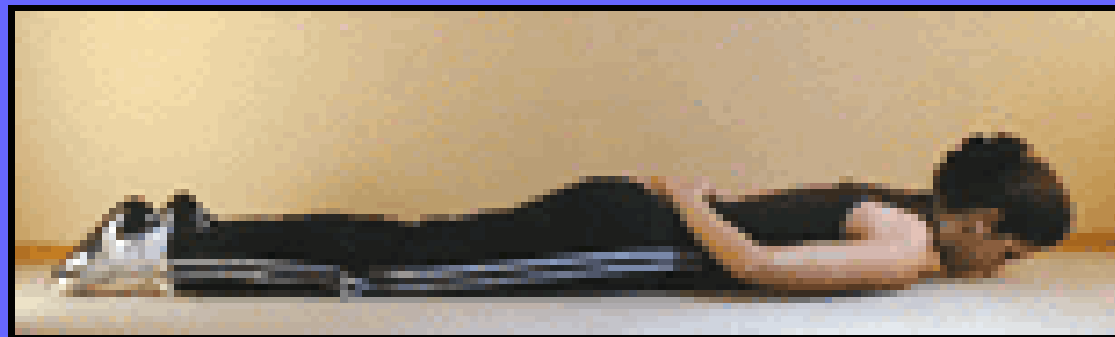
4- Prone Lying

- The active position:
- When this is used as a static holding for posture training or prior to exercise, the head is slightly raised from the supporting surface and the shoulders are drawn down and backwards, the heels being held together and the toes are stretched.



4- Prone Lying

- Uses:
- Unsuitable for heart and respiratory diseased patients as breathing is so restrict.
- Used as corrective position for spine.
- May be comfortable for young and slim people.



5- Leg Prone Lying

- This is taken on a high plinth, with legs being supported from the anterior superior spines to feet and stabilized by straps. The body is held in line with legs and is unsupported over the end of the plinth. A stool is in position under the trunk to afford support by the arms in the resting position.

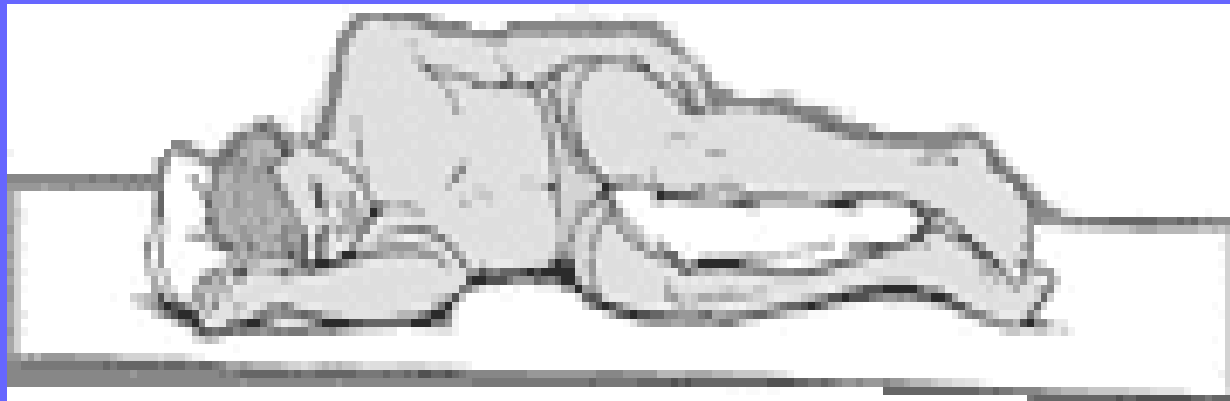
5- Leg Prone Lying

- Effect and Uses:

- 1- Care must be taken in this case to see that the fixation of the feet is firm and that it is maintained until the body is supported on the arms for the resting position.
- 2- Corrective position for the trunk, needs strong arms, head and back muscles.

6- Side Lying

- Details of this position are very considerably according to the purpose for which it is to be used.



6- Side Lying

1- Using the under arm to support the head. It is an unsteady position used sometimes for strong trunk side bending exercises.



6- Side Lying

2- Alternatively the shoulders may be stabilized by support from the upper arm resting on the ground or plinth in front, the legs being free for movement. When the under hip and knee are fully flexed the pelvis is relatively well-fixed, so that movements of flexion and extension can be localized to the hip joint of the uppermost leg.



6- Side Lying

- 3- An ideal position for relaxation for many people is provided by adapting. Three pillows are required, one for the head, one for the uppermost arm and one to support leg which is bent.
- 4- Used in sling exercises.



7- Sit Lying

- The patient lies supine with the knees bent and the lower leg hanging vertically over the end of the plinth. There is a tendency for the lumbar region to extend owing to tension of the hip flexors.



7- Sit Lying

- Uses:
- It is a difficult position due to hyperlordosis of the lumbar region.



E- Position Derived from Hanging

- Full Hanging
- The body is supported in the oblique position by the arms which grasp a horizontal bar, and by the feet while the rest of the body is inclined and straight.



Questions????????????



E- Position Derived from Hanging

- Effect and Uses:
- The position requires very strong muscle work for the back muscle, especially the scapulae retractors, which work against gravity and the weight of the body.

