



SUSPENSION THERAPY

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LEARNING OBJECTIVES

- Suspension therapy definition
- Contents of suspension therapy
- Types of rope
- Types of sling
- Clips
- Types of suspension therapy
- Suspension therapy for upper and lower limbs

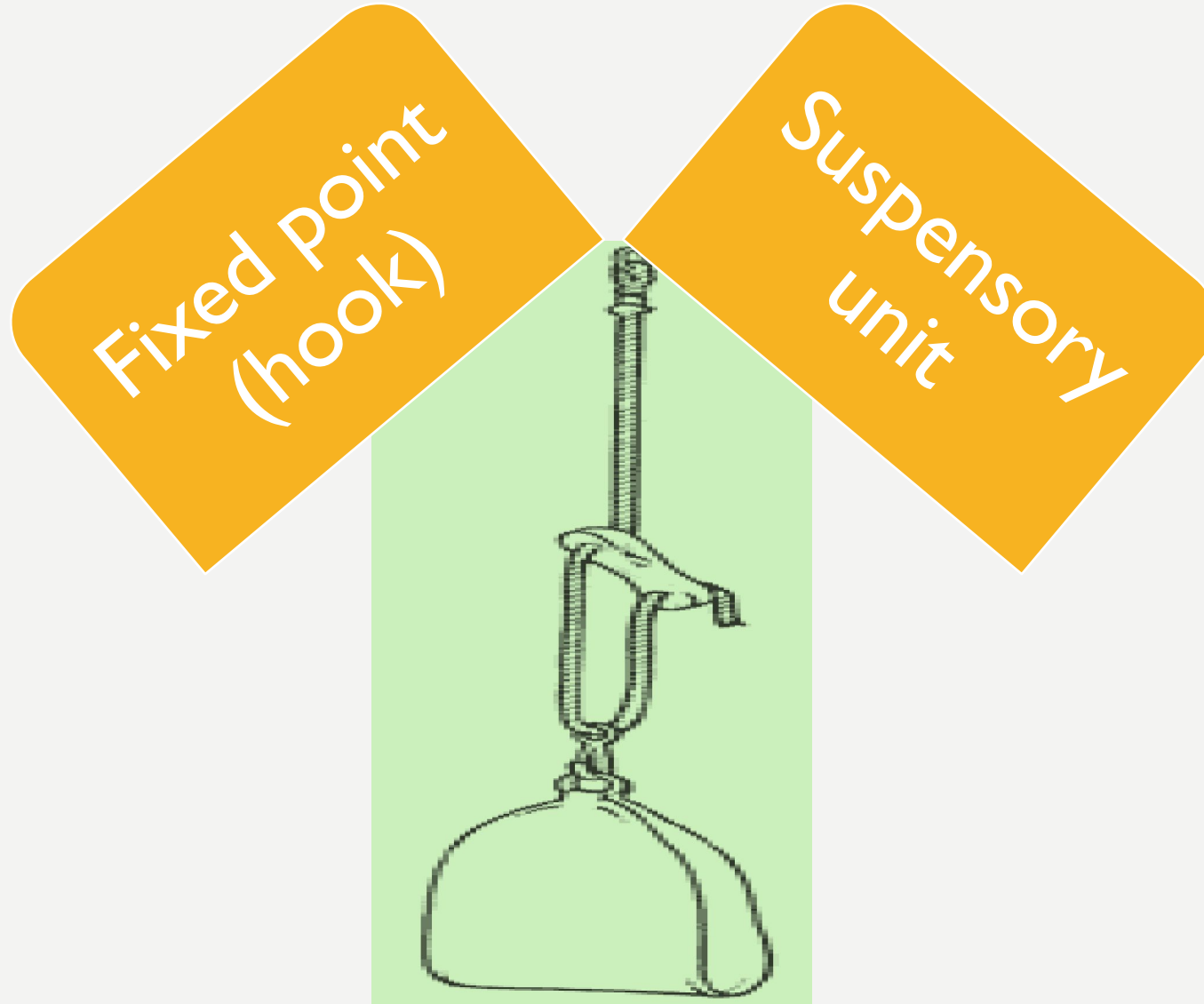
SUSPENSION THERAPY



Suspension is the means whereby parts of the body are supported in slings and elevated by the use of variable length ropes fixed to a point above the body

Suspension frees the body from the friction of the material upon which body components may be resting and it permits free movement without resistance when the fixation is suitably arranged relative to the supported part.

EFFECTIVE SUSPENSION NEED:



A suspensory unit consisting of a rope and a sling.

FIXED POINT



fit stainless steel or plastic covered 5 cm metal mesh around the area of a plinth

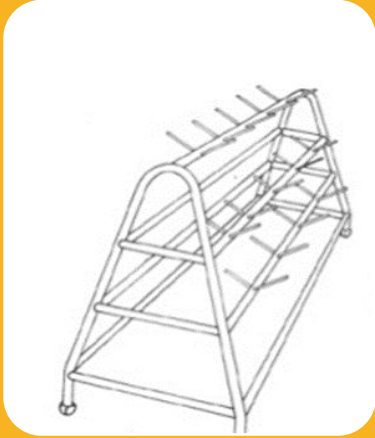


1 m or 2 m wide \times 2 m long above , 2 m \times 2 m at the side of the plinth, allow about 1.5m clearance between mesh and plinth top



If it is impossible to fix mesh, then a free-standing frame may be used. i.e. 2 m long \times 1 m wide at the base and a somewhat narrower top frame

STORAGE



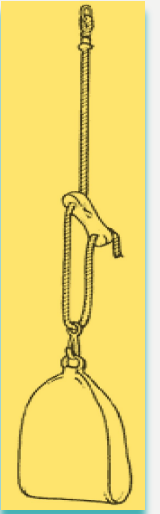
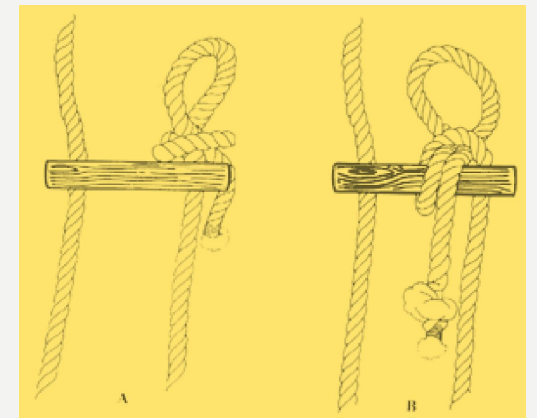
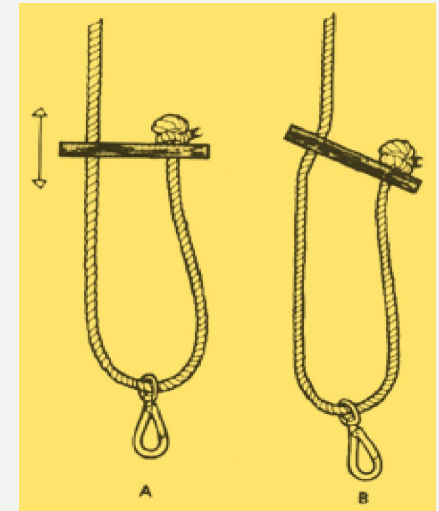
- Storage of slings and ropes can otherwise be on a wall frame of suitable hooks or on a mobile trolley



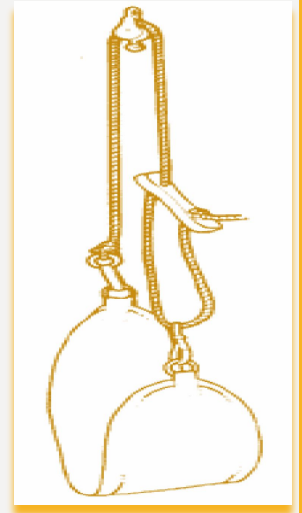
- Hooks that have a large and small curve are used

THE SUPPORTING ROPES: SINGLE ROPE:

- Ring fixed at one end, by which it is hung up.
- The other end of the rope passes through one end of a wooden cleat, through the ring of a dog clip and through the other end of the cleat and is then knotted with a half-hitch.
- The cleat is for altering the length of the rope and should be held horizontally for movement and pulled oblique when supporting
- The dog clip should be on a pivot to allow adjustments in position with minimum discomfort when the slings are attached.
- The total length of rope required is 1.5 m.



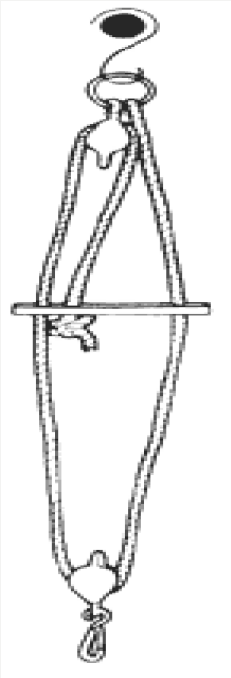
THE SUPPORTING ROPES: PULLEY ROPE:



- A pulley rope has a dog clip attached to one end of the rope which then passes over the wheel of a pulley.
- The rope then passes through the cleat and a second dog clip
- Like the single rope this rope is 1.5 m long.
- This arrangement is used for reciprocal pulley circuits; with one sling supporting a limb, and the ends of the sling attached to the two dog clips, it is used for three-dimensional movements of a limb, i.e. abduction or adduction with flexion or extension and medial or lateral rotation (combined, oblique, rotatory movements).

THE SUPPORTING ROPES: DOUBLE ROPE:

- Consists of a ring and clip from which the rope is hung to create a compensating device permitting a certain amount of swivel on the rope.
- The rope then passes through one side of a cleat, round a pulley wheel at the lower end, to the case of which is attached a dog clip, through the other end of the cleat and over the wheel of an upper pulley which is attached to the compensating device.
- The rope then passes down again through a centre hole in the cleat where it is knotted
- This device gives a mechanical advantage of two as two pulleys are used. The rope is shortened by pushing the cleat down, allowing the lifter to move with gravity at the same time as it offers a mechanical advantage of two. Such a rope is used to suspend the heavy parts of the body – the pelvis, thorax or heavy thighs when these are to be supported together.

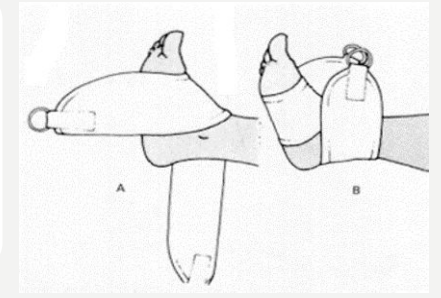


SLINGS



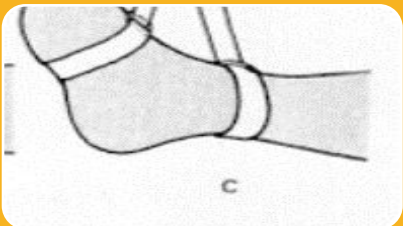
SINGLE SLING

- Single slings are made of canvas bound with soft webbing and with a D ring at each end .
- They are used open or folded into two as a figure of eight to support the hand or foot .They measure 68 cm long by 17 cm wide.



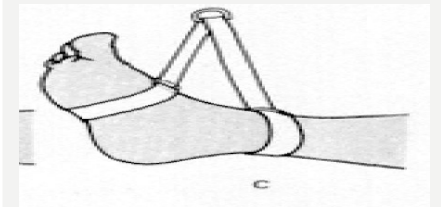
DOUBLE SLING

- Double slings are broad slings measuring 68 cm long by 29 cm wide with D rings at each end
- are used to support the pelvis or thorax or the thighs together, especially when the knees are to be kept straight.



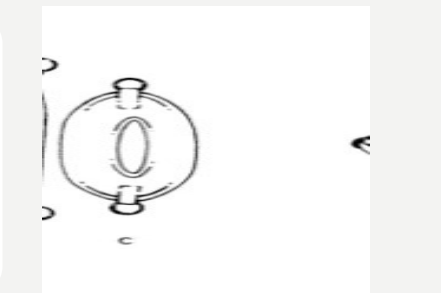
THREE RING SLING

- Three ring slings are webbing slings 71 cm long by 3–4 cm wide with three D rings, one fastened at each end and one free in the middle. The centre ring is for attachment to the dog clip and the webbing is slipped through the end D rings to make two loops .
- These slings are used to support the wrist and hand or ankle and foot



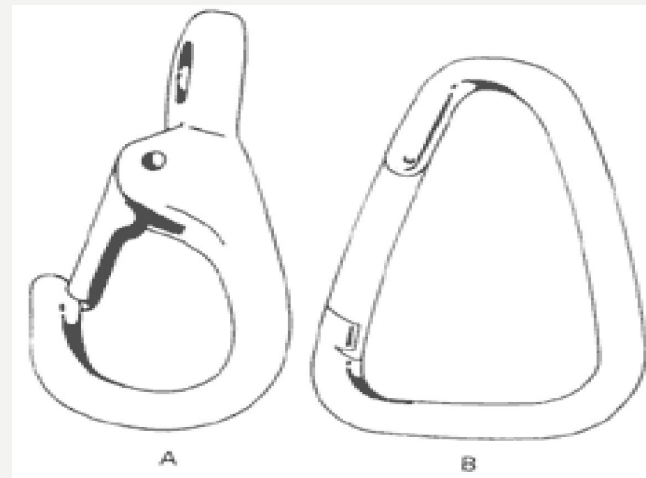
HEAD SLING

A head sling is a short, split sling with its two halves stitched together at an angle to create a central slit. This allows the head to rest supported at the back under the lower and upper parts of the skull.



CLIPS

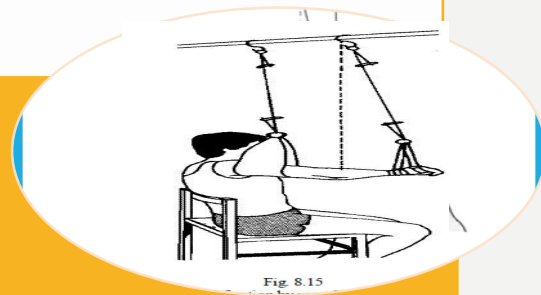
- Karabiner hooks of 70mm or 100mm provide a convenient alternative means of clipping two pieces of equipment together.



TYPES OF SUSPENSION:

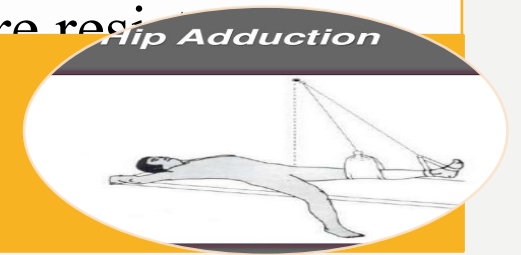
- The rope is fixed so that it hangs vertically above the centre of gravity of the part to be suspended.
- Vertical suspension is used for support as it tends to limit the movement of the part to a small-range pendular movement on each side of the central resting point

Vertical Fixation



- This occurs when all the ropes supporting a part are attached to one 'S' hook which is fixed to a point immediately above the centre of the joint which is to be moved
- When such fixation is set up the movement of the limb will be on a flat plane level with the floor. In this way pure angular movements are obtained
- If some resistance to the muscle work is required, then the whole fixed point is moved away from the muscles which require resistance

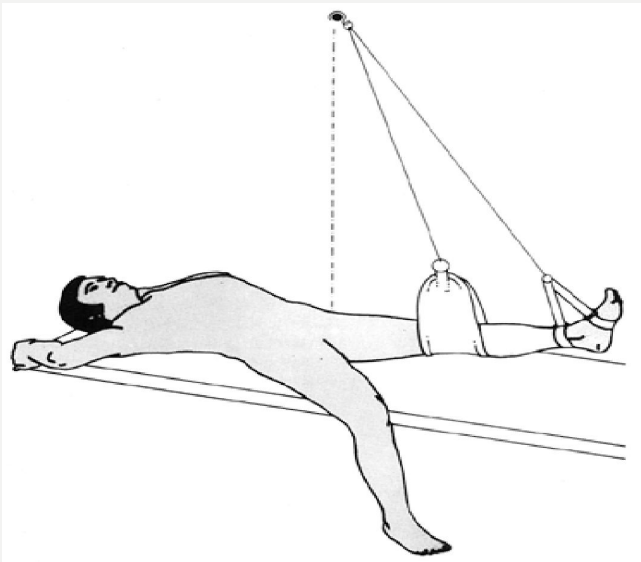
Axial Fixation



SUSPENSION FOR THE LOWER EXTREMITY

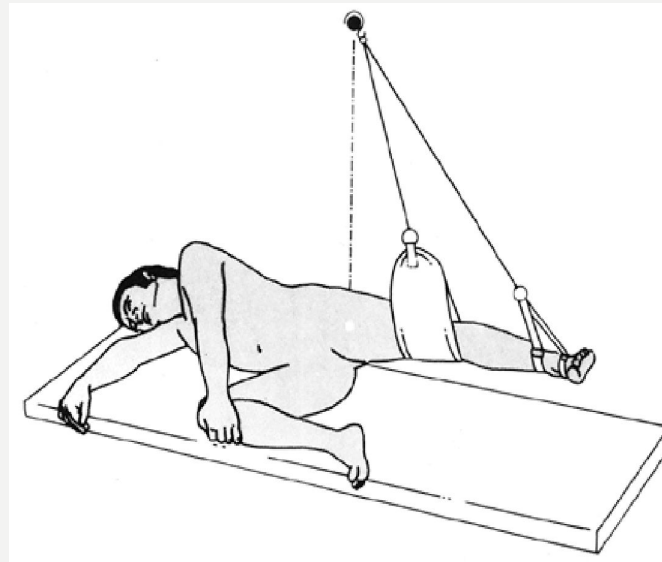
Hip

Abduction and Adduction



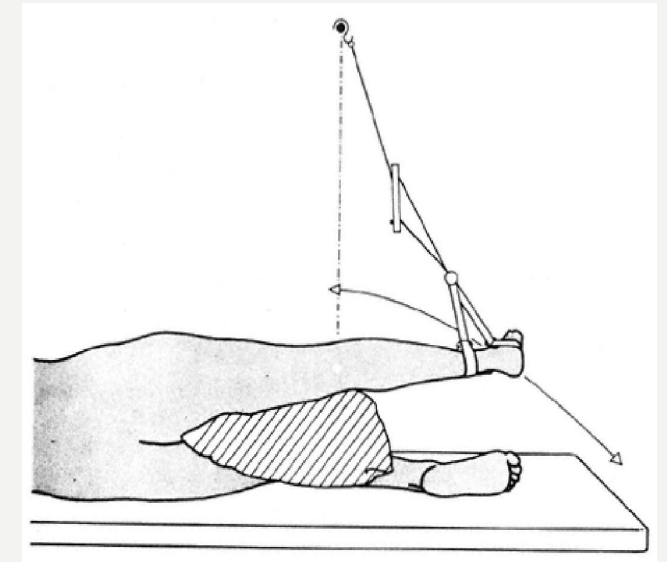
Hip

Flexion and Extension



The Knee

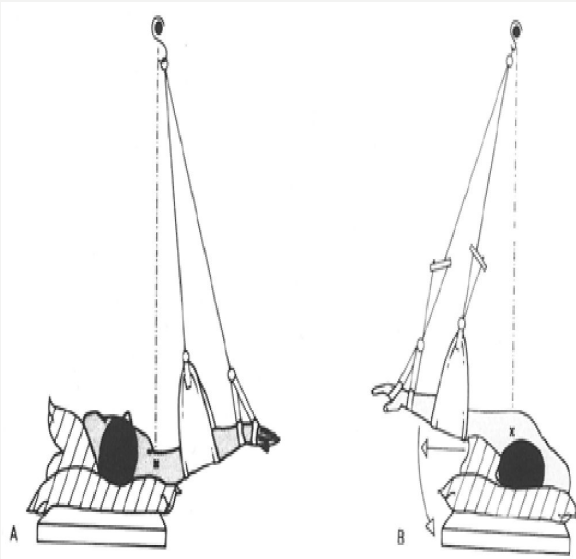
Flexion and Extension.



SUSPENSION FOR THE UPPER EXTREMITY

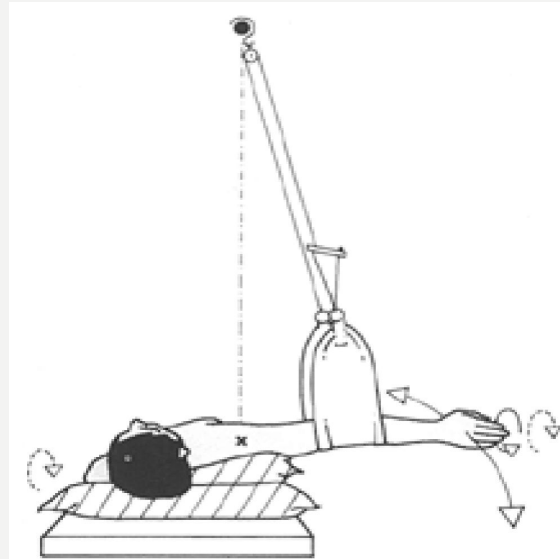
Shoulder

Abduction and Adduction



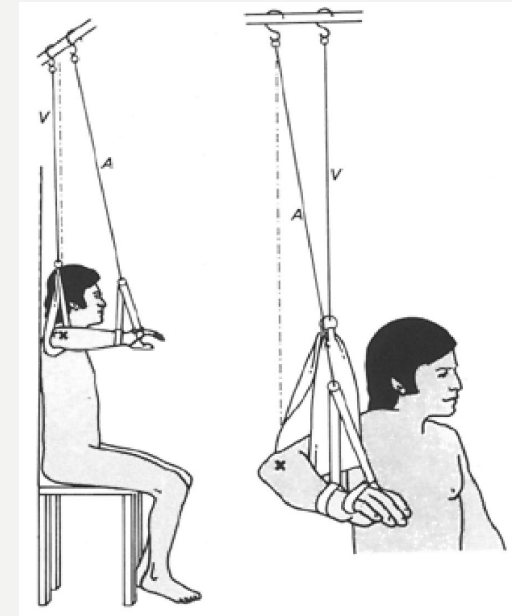
Shoulder

Flexion and Extension



Elbow

Flexion and Extension.





THANK YOU

INDICATIVE READING OF LECTURE :

- Practical exercise therapy, 4th edition by M.Hollis
- Chapter 8
- Page:96