

Trunk and Cervical orthoses(1)

- Classified according to design characteristics
- **1) Minimal motion control** Collars that encircle the neck with fabric, resilient foam, or rigid plastic.
- The *Philadelphia collar* has mandibular and occipital extensions; sometimes used for upper cervical injuries

Philadelphia collar(encompass chin & posterior head for greater restrain



Figure 31.46 Philadelphia collar. (Courtesy of Camp Healthcare Corporation, Jackson, MI 49204.)

2) For moderate control

- A *four-post orthosis* is used.
- Two ant adjustable posts joining a sternal plate to a mandibular plate and two posterior uprights connecting a thoracic plate to an occipital plate.
- The sternal plate is strapped to the thoracic plate and occipital plate is strapped to the mandibular plate.

B:::Four post orthosis

A:::Minerva halo/Halo vest orthosis

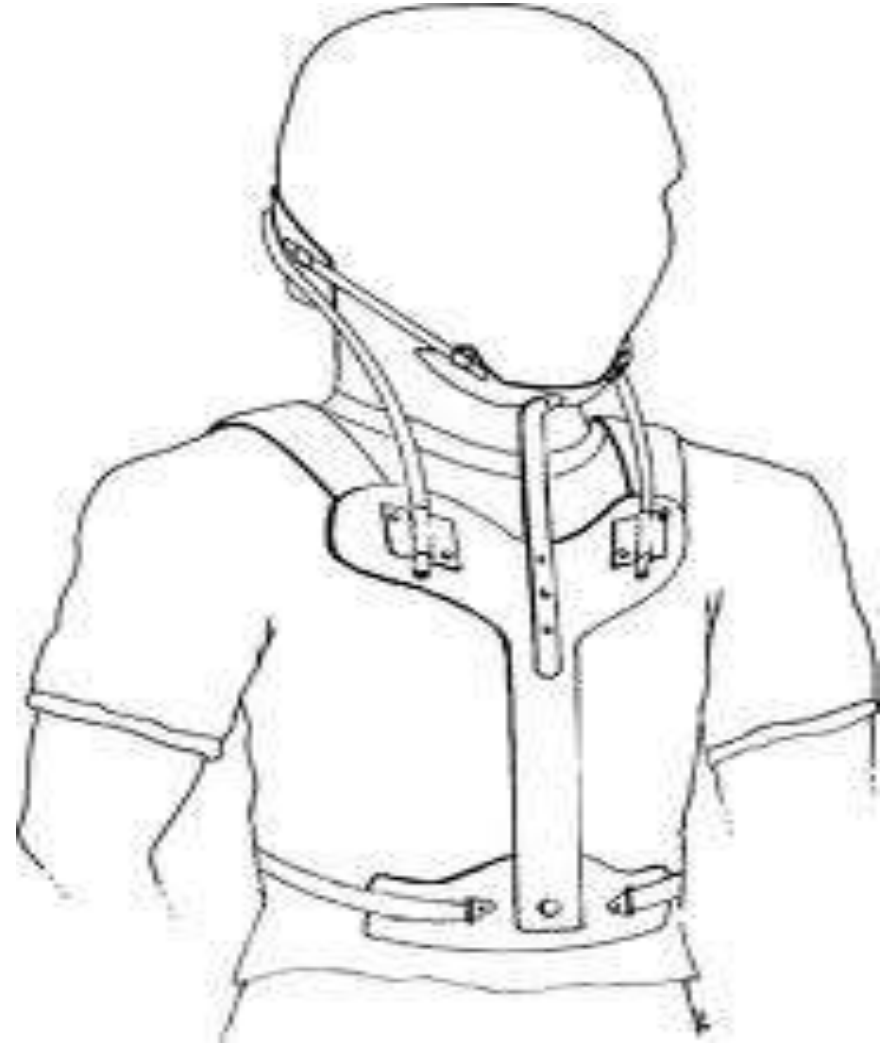


- 3) Maximum orthotic control of neck.....
Either with *Minerva* or a *Halo orthosis*.
- *Minerva orthosis* is a noninvasive appliance having rigid plastic post. Section extending from head to midtrunk; the superior section is held in place by a forehead band.
- Circular band of metal ... fixed to the skull by four tiny screws.
- Uprights connect halo to a thoracic orthosis.

Minerva halo/Halo vest orthosis



Figure 31.48 Halo-vest orthosis. (Fillauer Companies, Inc., Chattanooga, TN 37406.)



Minerva halo/Halo vest orthosis

Cervical Orthoses

Cervical orthoses are classified according to design characteristics.⁵⁸ Minimal motion control is provided by collars (Fig. 31.45) that encircle the neck with fabric, resilient foam, or rigid plastic. The *Philadelphia collar* (Fig. 31.46)



Figure 31.45. Soft foam rubber collar. (Courtesy of Camp)

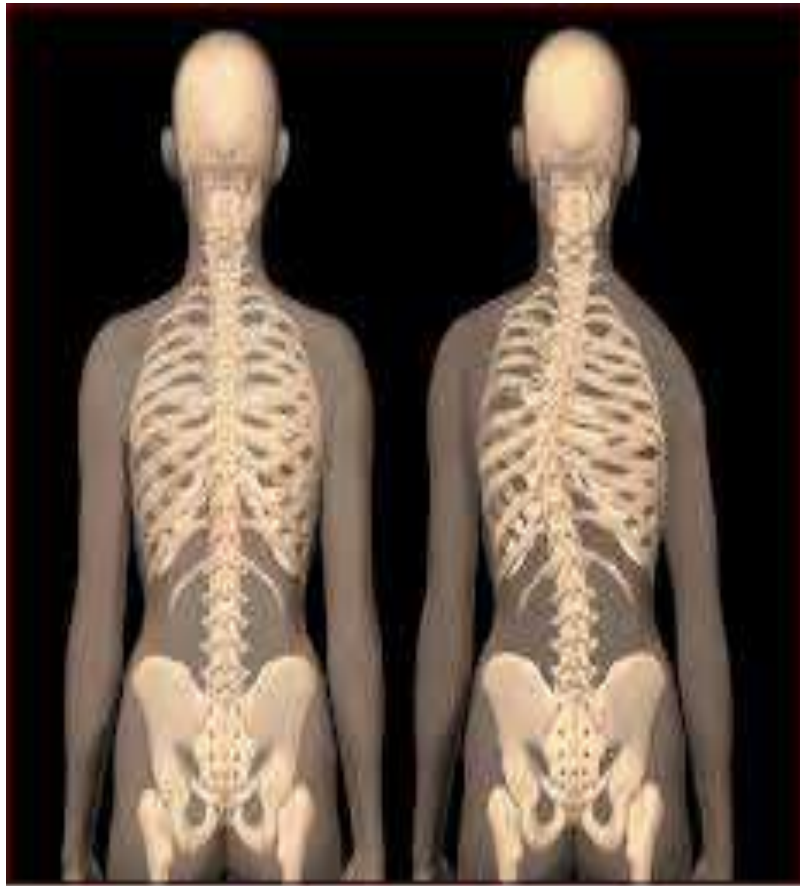


Figure 31.47. Four-point cervical orthosis.

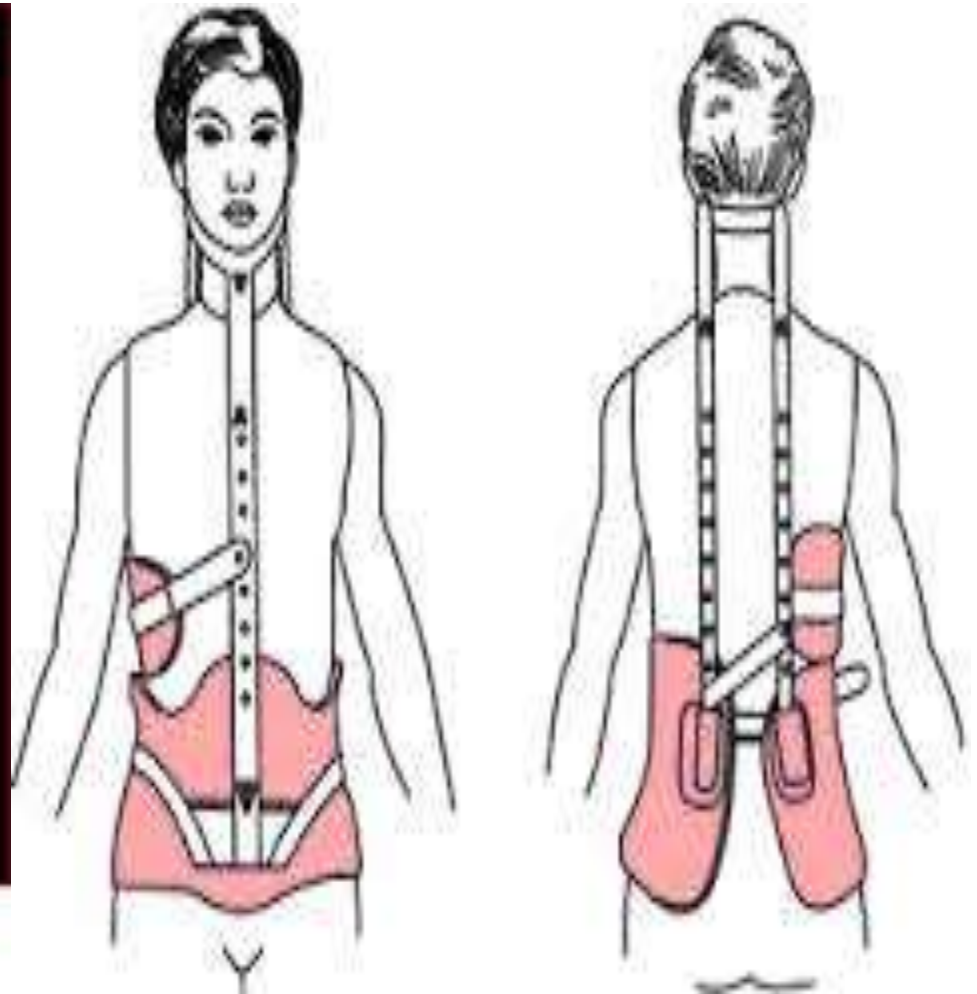
Scoliosis orthoses

- Children and adolescent with kyphoses, thoracic, thoracolumbar or lumbar scoliosis..... Fitted with TLSO... applies force to realign vertebral column and thoracic cage.
- **Major achievement** Orthoses prevent the curve from increasing beyond its original contour.
- *Milwaukee orthosis*
- Consist of frame composed of pelvic girdle, two post uprights, an ant uprights, and a superior ring that lies on the upper chest & can be hidden by most clothing .

Scoliosis orthosis & Milwaukee brace



Normal vs. Scoliosis



Boston orthosis

The *Boston orthosis* does not extend as high as the *Milwaukee orthosis*;



WILMINGTON ORTHOSIS(SCOLIOSIS)

- Custom-made thoracolumbosacral jacket intended to guide the trunk to straighter alignment.
- Most effective on patients who have immature spines and moderate vertebral curves in midthoracic or more inferior portion of the trunk.
- Classic protocol, wear orthosis snugly 23 hours each day is associated with more favorable results.

- Another approach wear only at night when the effects of gravity are minimized.

Charleston bending brace and *Providence brace* provide overcorrection of the spinal curve.

WILMINGTON ORTHOSIS(SCOLIOSIS)

