History of Traction

- Aztecs & Egyptians wrote about manual traction using branches.
- Greek texts also comment from 4th century BC.
- First recorded in teachings of Hippocrates in the 1st century AD.
- He used poles, ladders and a rack called a Scammum in carefully prescribed methods of traction of the long bones.
- Also sharp short pull besides prolonged traction.
History of the Thomas Splint

- Huw Thomas Owen (1834-1891)
- Son of a bone setter in Liverpool
- First used in 1890 for TB of the knee joint
- Described as an external skeleton for the lower limb
- To transmit weight bearing from Ischial Tuberosity to ground
- Use of uninterrupted immobilisation
Medical definition of Traction

- The application of a steady pull on an injured limb by weights and pulleys (Collins 1992)

- Two strong men will suffice by making extension and counter-extension (Hippocrates 350BC)
Mechanisms of Traction

There are two mechanisms of traction:

- Fixed using a Thomas splint. A pull between two fixed points.
- Balanced or sliding e.g. Pugh’s Hamilton Russell traction. The pull is balanced between weights and the patient's body weight.
Application of Traction

Two ways to apply traction:

- Skin
- Skeletal
Types of Traction

- Fixed skin traction
- Sliding skin traction
- Fixed skeletal traction
- Sliding skeletal traction
- Combined fixed and balanced traction
- Modified skeletal traction
Uses of Traction

- Relieve pain due to muscle spasm keeping the limb in a position of comfort & rest
- Restore & maintain alignment of bone after fracture or dislocation
- Restore blood flow & nerve function
- Allow treatment & dressing of soft tissues
- Rest injured or inflamed joints & keep in functional position
Uses of Traction

- Allow movement of joints during fracture healing
- Gradually correct deformities due to contraction of soft tissues through disease or injury
- Allow patient to be moved easily
- Traction can be applied to pelvis & spine as well as limbs
Essential Principles

- The grip on the body must be adequate & secure
- Provision for counter-traction must be made
- Minimal friction in cords or pulleys
- Line & magnitude of the pull must be maintained
- Frequent checks to ensure traction set up is working as planned & patient is not suffering any injury as a result of traction
The **NEW** Thomas Splint

- Made from durable stainless steel
- Adjusts to fit any leg length or either leg
- Interchangeable hoops fit all thigh sizes
- Easier to fit by rolling around the leg
- Splint / Pearson attachment & hoops can be clean washed or autoclaved as required
- Reduces need to hold stock
Patient Measurement.

Measure thigh circumference and the inside leg length.
Splint Adjustment

Using push-button system set the splint to the required length (metric gauge on the side of splint).
Hoop attachment

Fit hoop by pressing push button and click into place. Adjust for right or left leg
Splint Preparation

Using the fabric slings provided Velcro each sling around the splint to dress.
Applying Gamgee

If required line the slings with the Gamgee as necessary.
Positioning of leg in Splint

Adjust the hoop to fit into the Ischial Tuberosity at the optimum angle.
Securing leg to Splint

Bandage splint to leg using the skin traction kit provided.
Securing leg to Splint

Use Gamgee above the leg if necessary and bandage the upper thigh.
Pearson Knee Attachment

Pearson attachment aids early mobilisation.
Positioning of leg in Pearson

Example of overhead traction system.