

## A simple model for teaching thoracocentesis & drainage

### How to build your own



Tom Grattan-Smith

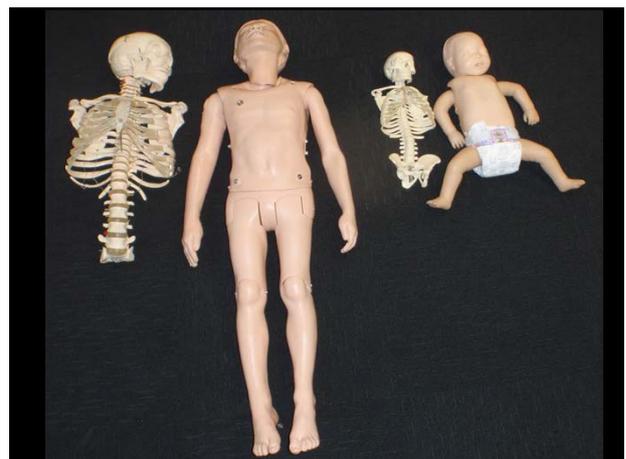
NETS (NSW)

Tom.grattan-smith@nets.org.au



## The basic concept of this model

- Plastic educational/toy skeletons come in a range of sizes
- With thoraces similar in size to the range of neonatal & paediatric patients



## The basic concept of this model

- There are readily available materials to mimic
- The skin
- The subcutaneous tissues
- The parietal pleura



## The basic concept of this model

- This allows various techniques to be taught
- E.g.
  - Identify the landmarks
  - Incise the skin
  - Blunt dissect the subcutaneous tissues
  - Feel the "pop" as you penetrate the pleura
  - Place the catheter

## The model How to make one

- Buy an appropriate sized skeleton
- Needs to be firm enough to allow palpation of landmarks & pressure of insertion
- Flexible enough to prevent snapping of ribs etc. with handling

## Pleural layer

- Adhesive material such as "Sleek" or "Duraseal" is layed on the outside of the ribs
- Allows for a "pop" when penetrated with blunt dissection



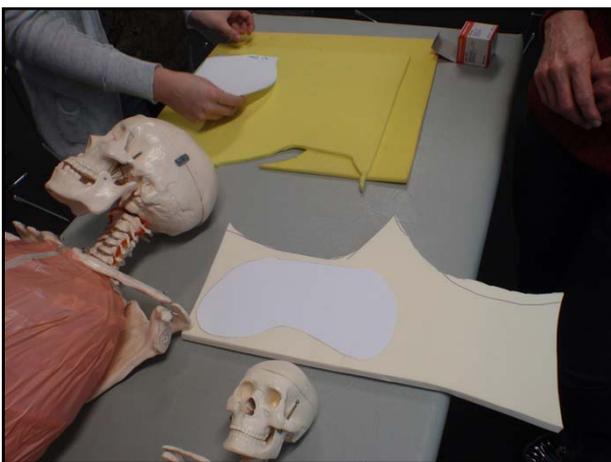
## Subcutaneous tissue layer

- Provides some resistance to blunt dissection but not too much
- Must be soft enough to allow palpation of the ribs
- Pre-formed templates appropriate for the skeleton size facilitates preparation



## Subcutaneous tissue layer

- Materials such as:
- A layer of artificial skin from "Limbs and Things"
  - Sheets of "professional skin pad"
  - 0.6 or 1.0 cm thickness depending upon thorax size
- Compressed foam sheets / synthetic sponge cloth / synthetic cleaning cloth
- The edges are secured with leukoplast for neatness



The screenshot shows the website for Limbs & Things, a company specializing in medical training models. The page is titled "Professional Skin Pads" and features a search bar, navigation links, and a list of products. The main product being highlighted is the "Professional Skin Pad - Large (Pack of 2)" with part number 00077. The page includes a description of the product, a list of skills it is used for, and a list of features. The website is displayed in a Microsoft Internet Explorer browser window.

**Limbs & Things**  
The best training models in medicine

Home Products Downloads Events Company Info

**Professional Skin Pads**

**Professional Skin Pad - Large (Pack of 2)**  
Part No: 00077

**Professional Skin Pad - Small (Pack of 4)**  
Part No: 00075

A sophisticated 3 layer skin pad for the demonstration and training of a variety of incisions and a wide range of suturing techniques.

**Skills**

- Incisions:
  - linear
  - ellipse
  - flaps
  - shaped
- Subcuticular undermining
- Simple and advanced interrupted suturing techniques
- Subcuticular suturing
- Continuous suturing
- Stapling
- Use of adhesive strips

**Features**

- Warm to the touch and has a realistic response
- Soft skin with a similar drag and strength to human skin
- Comprises epidermis, dermis and subdermal layer
- All layers have a realistic retention of sutures

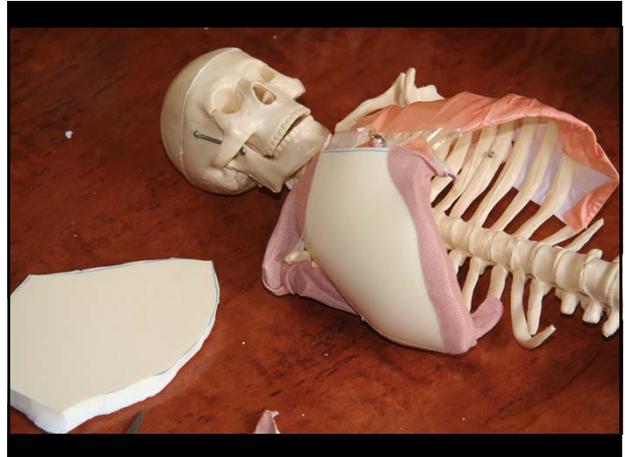
**Professional Skin Pad - Large (Pack of 2)**  
Part No: 00077

**Professional Skin Pad - Small (Pack of 4)**  
Part No: 00075

Download Product Sheet

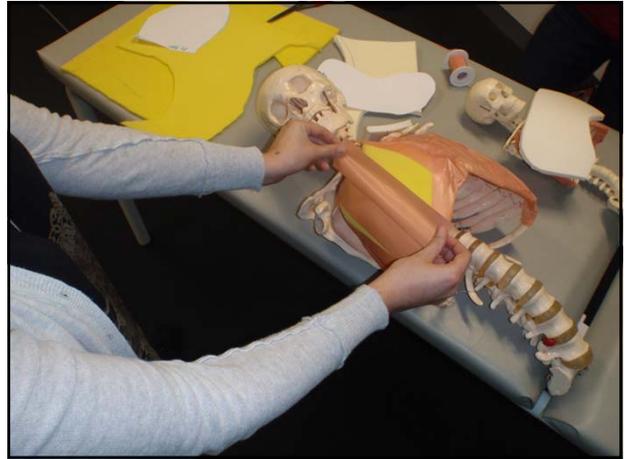
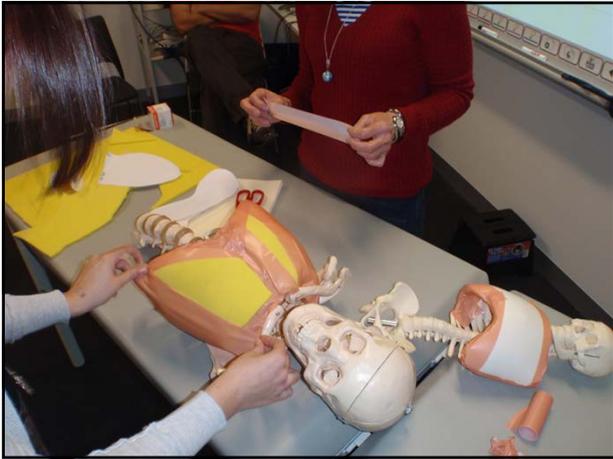
## "professional skin pad"

- This "skin" is designed to hold sutures and to be able to have local anaesthetic injected realistically.
- The compressed outer layer is of similar thickness as the dermis of an infant
- This outer "dermis" can be incised with a scalpel and the underlying soft tissues blunt dissected until there is a "pop" as the pleural layer is penetrated



## The skin layer

- The "professional skin pad" does not require another layer
- Compressed foam etc. can be covered with a layer of Slek, Leukoplast or other thin adhesive tape



## Teaching with the chest drain model

- Below are some images of teaching with various models
- The images are of different stages in the development of the model using a variety of materials





