



Departement of Anesthesia Techniques



كلية المستقبل الجامعة
قسم تقنيات التخدير

المرحلة الاولى ٢٠٢٢-٢٠٢٣

Anatomy

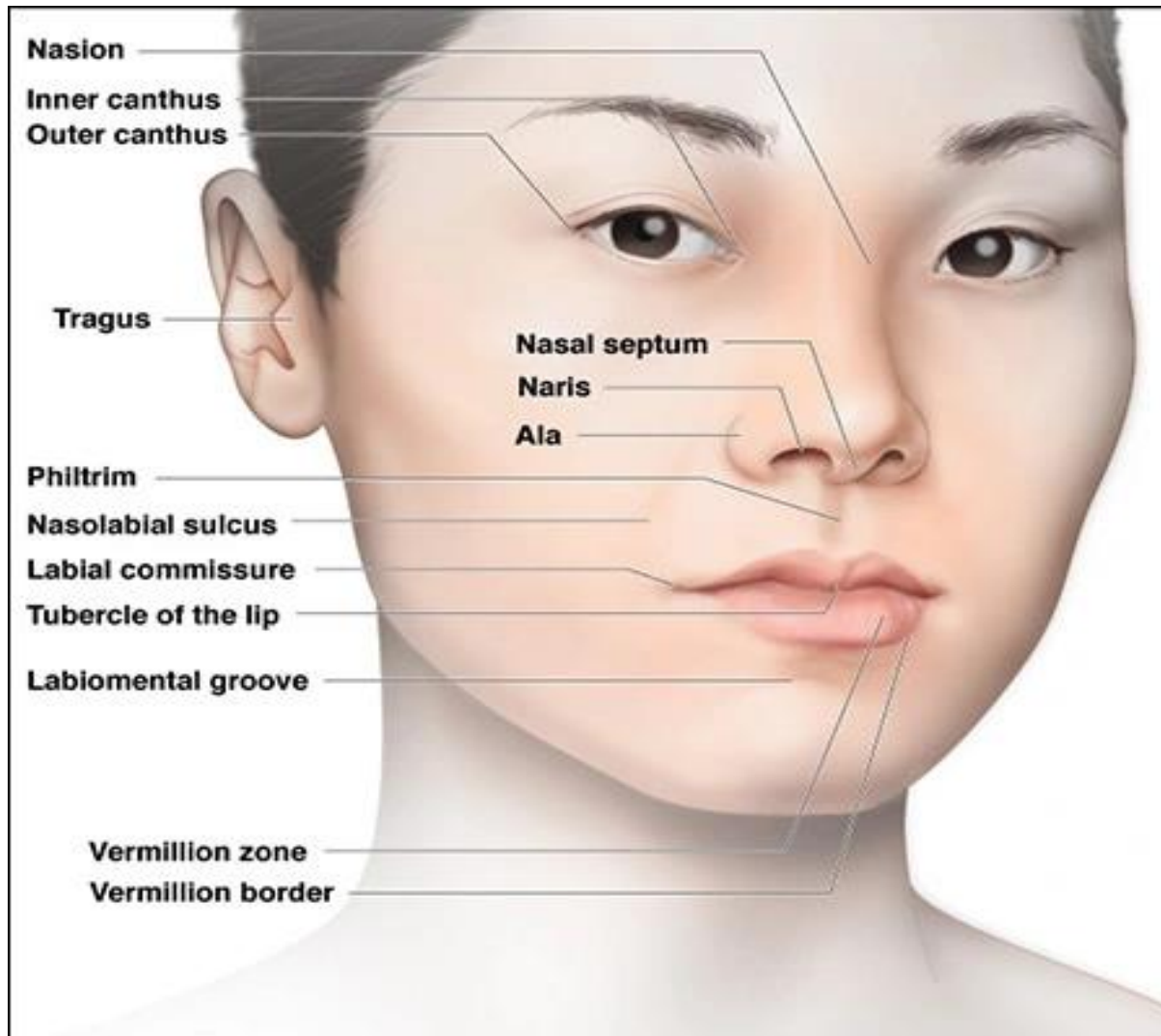
Lecture :Surface Anatomy and landmark

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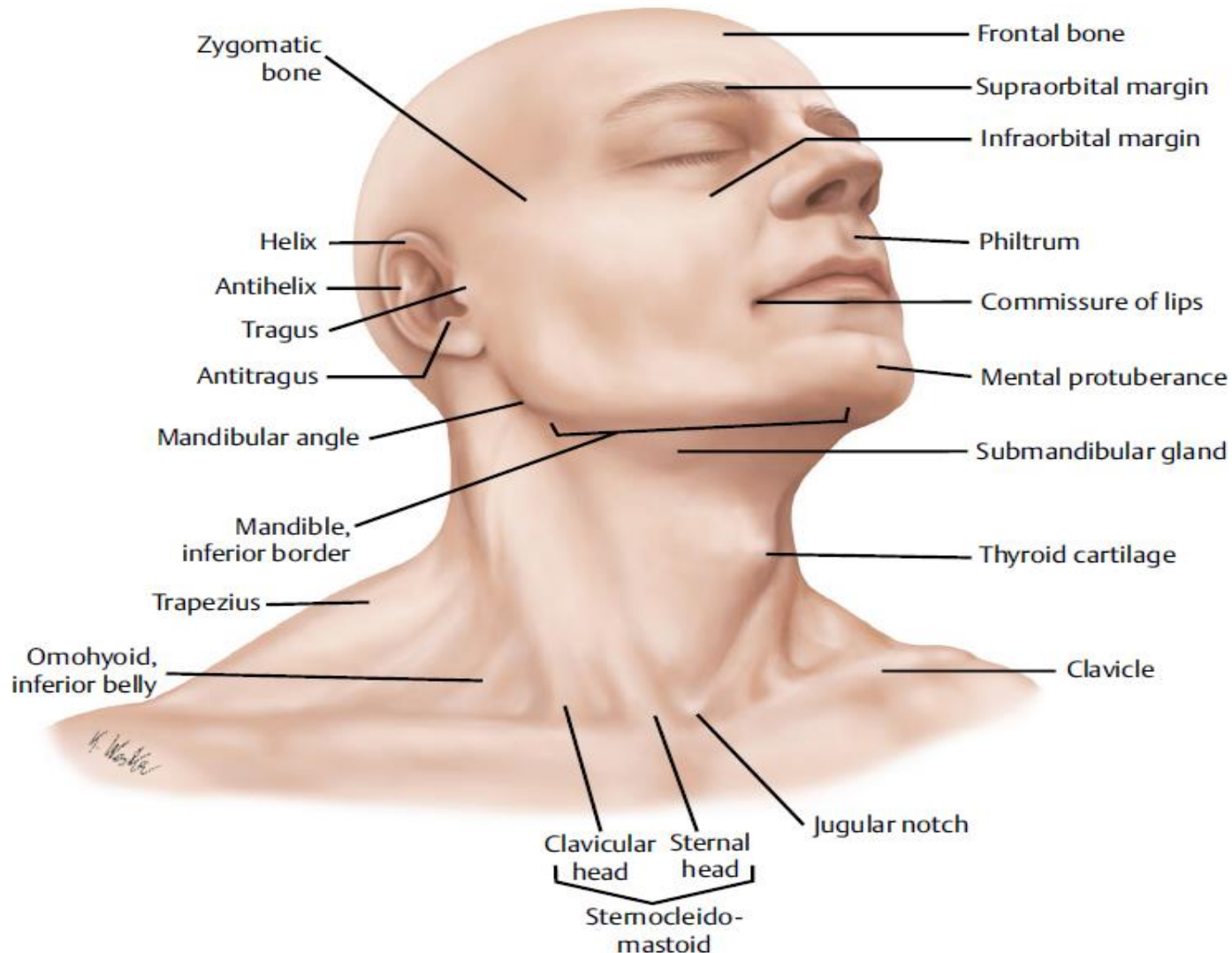
Surface anatomy and landmarks

Facial landmarks



Surface anatomy and land marks

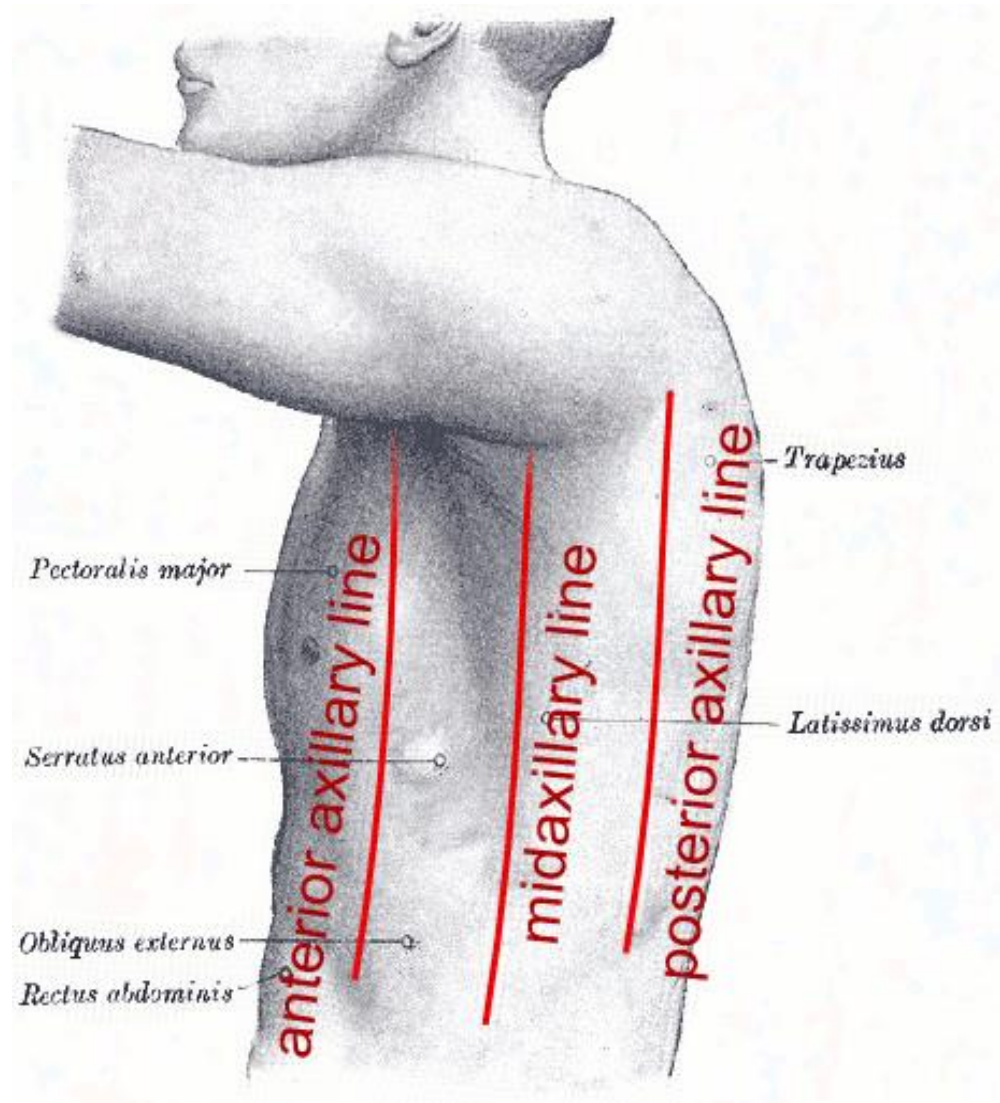
Anatomical Landmarks in the Neck



Surface anatomy and land marks

Anatomical lines (figure.1)
anatomical "lines" are imaginary lines drawn on the surface of the body used to describe anatomical locations. **Anterior Axillary Line:** A vertical line along anterior axillary fold the midline

The midaxillary line, a line running vertically down the surface of the body passing through the apex of the axilla (armpit).



Surface anatomy and land marks

Parallel are the *anterior axillary line*, which passes through the anterior axillary skinfold, and the *posterior axillary line*, which passes through the posterior axillary skinfold.(figure.2)



Figure.2

Surface anatomy and land marks

Midsternal Line: A vertical line down the middle of (sternum)

Parasternal Line: A vertical line along lateral edge of sternum

Mid-Clavicular Line: A vertical line from middle of clavicle (figure.3)

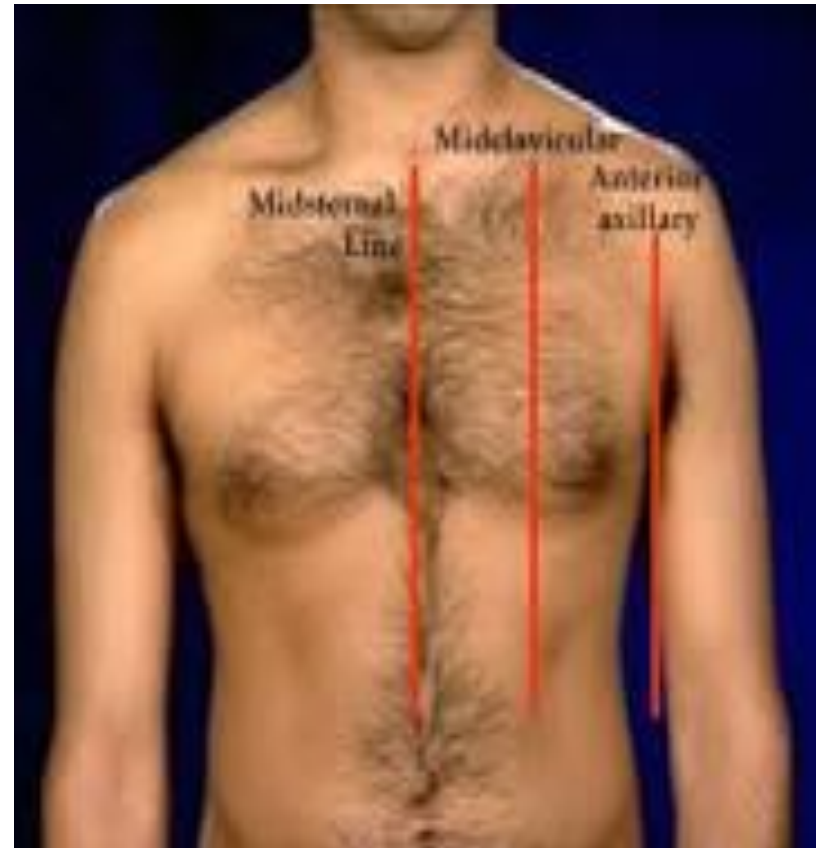


Figure 3

Surface anatomy and land marks

Scapular Line: is a line that passes over the Inferior angle of scapula

Vertebral line: is a line that passes over the spinous processes of the vertebral column in the midline (figure.4)



Figure.4

Surface anatomy and land marks

The anatomical regions of the abdomen (figure 5)

From superior to inferior, the abdomen is divided into nine **regions**:

Epigastric, Umbilical, Hypogastric (e.g., suprapubic) Left hypochondriac.

Right hypochondriac, Left lumbar
Right lumbar Left iliac (e.g., inguinal)

Right iliac (e.g., inguinal)

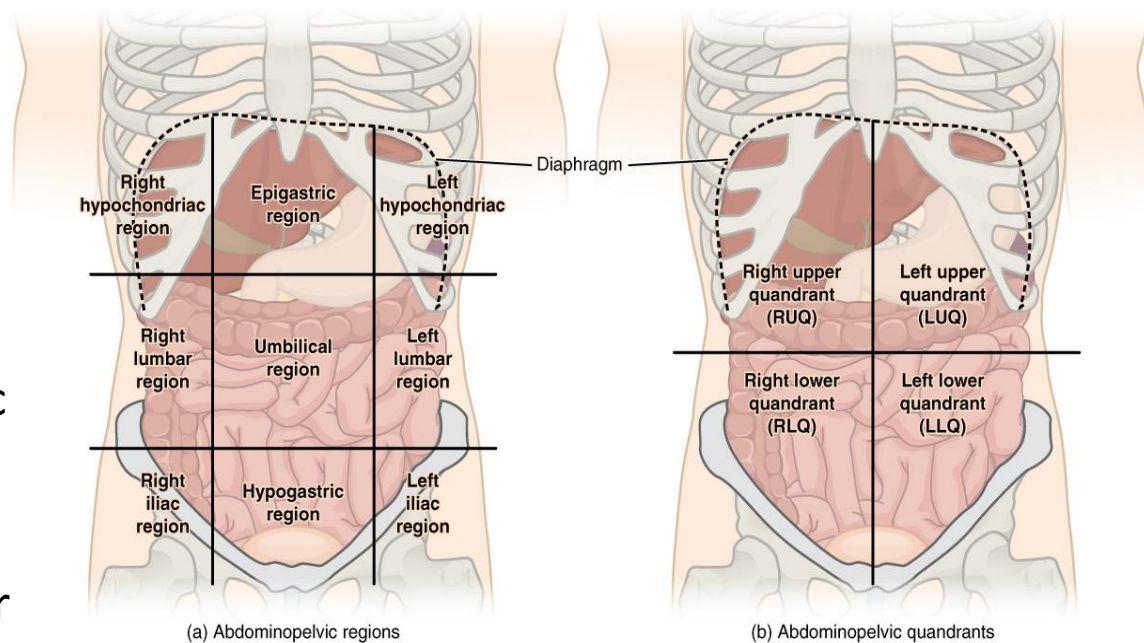


Figure.5

Surface anatomy and land marks

It is important to know the anatomical regions (and quadrants) of the abdomen to correlate the pain to the organs contained in each area. For example, pain within the epigastric region should guide you to think about the stomach, liver, pancreas, duodenum, and adrenal glands. Pain in the suprapubic (e.g., hypogastric) region should guide you to think about the bladder, sigmoid colon, rectum, and uterus. (figure.6)

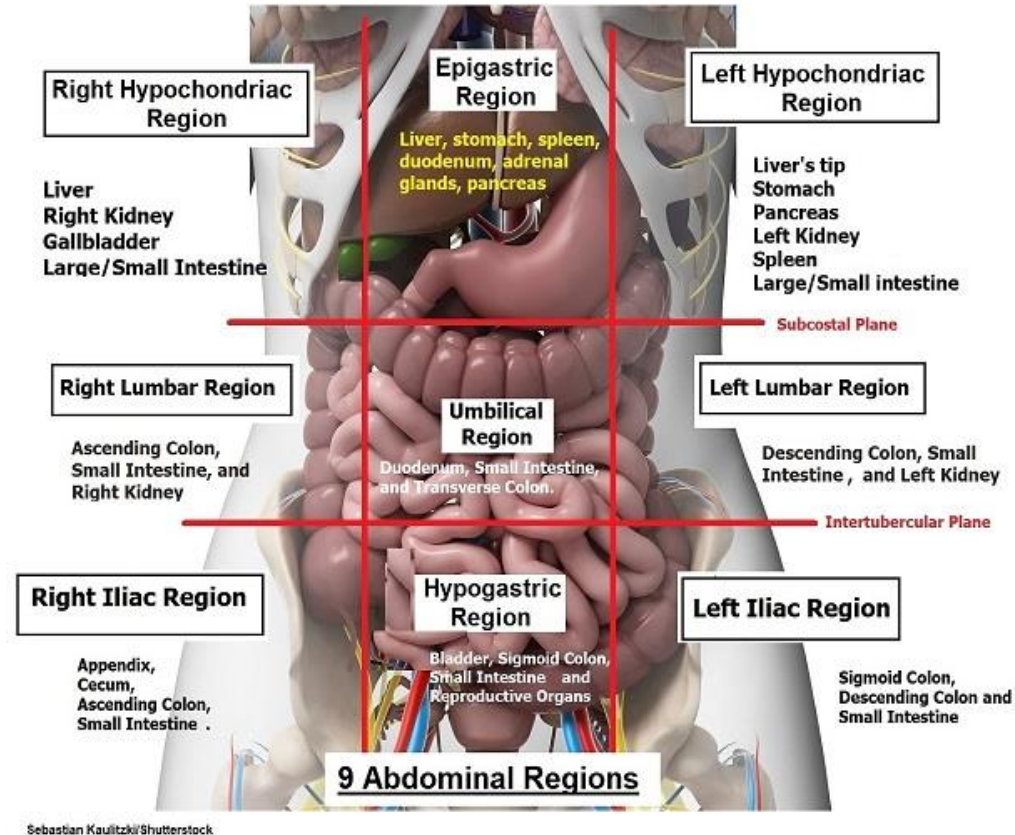


Figure.6

Surface anatomy of the thorax

Surface Anatomy of the thorax

Anterior Chest Wall

The suprasternal notch (figure.7) is the superior margin of the manubrium sterni and is easily felt between the prominent medial ends of the clavicles in the midline. It lies opposite the lower border of the body of the 2nd thoracic vertebra.

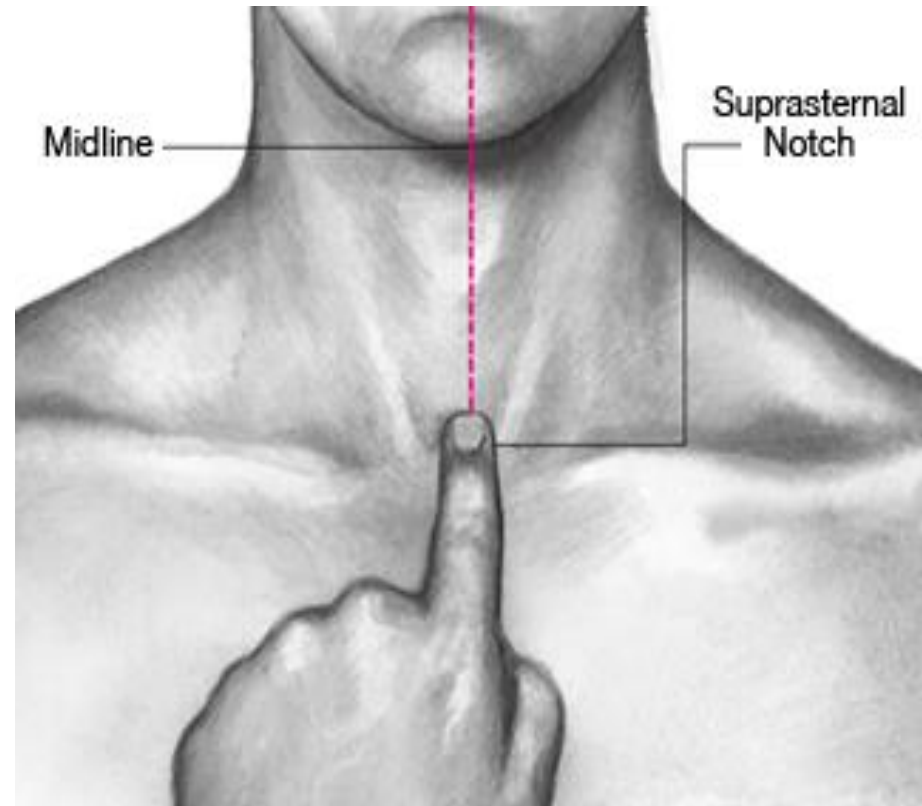


Figure.7

Surface anatomy and land marks

The sternal angle (angle of Louis) (figure.8) is the angle made between the manubrium and the body of the sternum. The finger moved to the right or to the left onto the angle will pass directly onto the 2nd costal cartilage and then the 2nd rib. All ribs may be counted from this point.

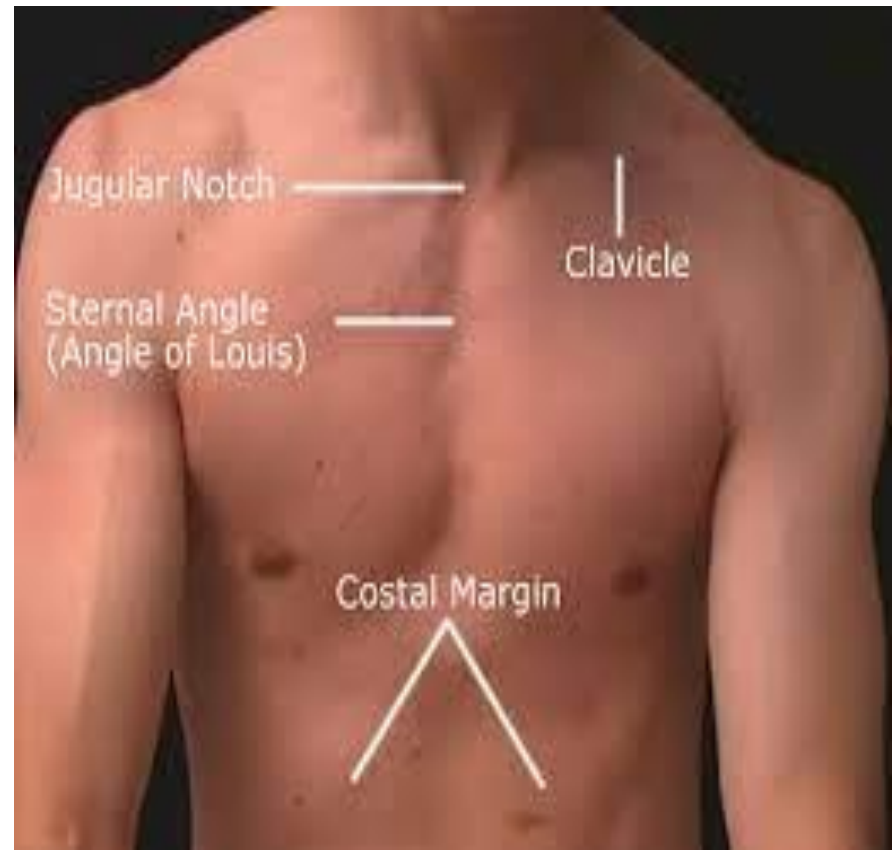


Figure.8

Surface anatomy and land marks

The subcostal angle (figure.9) is situated at the inferior end of the sternum, between the sternal attachments of the 7th costal cartilages.

The costal margin (figure9) is the lower boundary of the thorax and is formed by the cartilages of the 7th, 8th, 9th, and 10th ribs and the ends of the 11th and 12th cartilages.

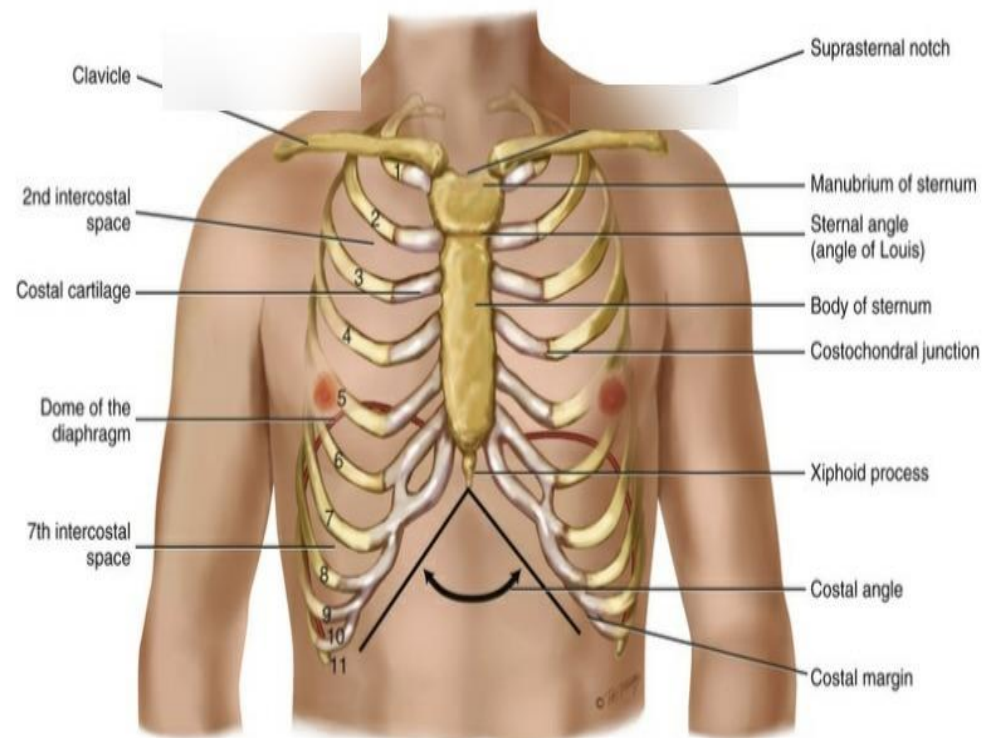


Figure.9

Surface anatomy and land marks

The clavicle (figure,10) is subcutaneous throughout its entire length and can be easily palpated. It articulates at its lateral extremity with the acromion process of the scapula.

How to count the rib

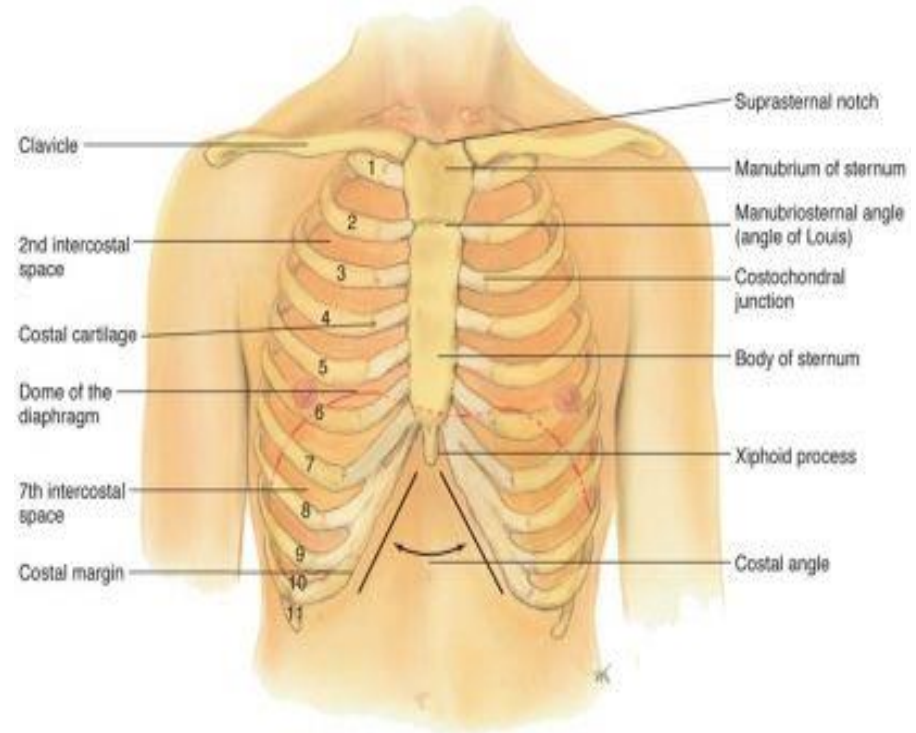
The 12th rib can be used to identify a particular rib by counting from below.



Figure.10

Surface anatomy of the thorax

However, in some individuals, the 12th rib is very short and difficult to feel. For this reason, an alternative method may be used to identify ribs by first palpating the **sternal angle** and the **second costal cartilage**. (figure.11)



ANTERIOR THORACIC CAGE

Figure. 11

Surface anatomy and land marks

Diaphragm (figure12)

The central tendon of the diaphragm lies directly behind the **xiphisternal joint**. In the mid respiratory position, the summit of the **right** dome of the diaphragm arches upward as far as the upper border of **the 5th rib in the midclavicular line**, but the **left** dome only reaches as far as the lower border of the 5th rib.

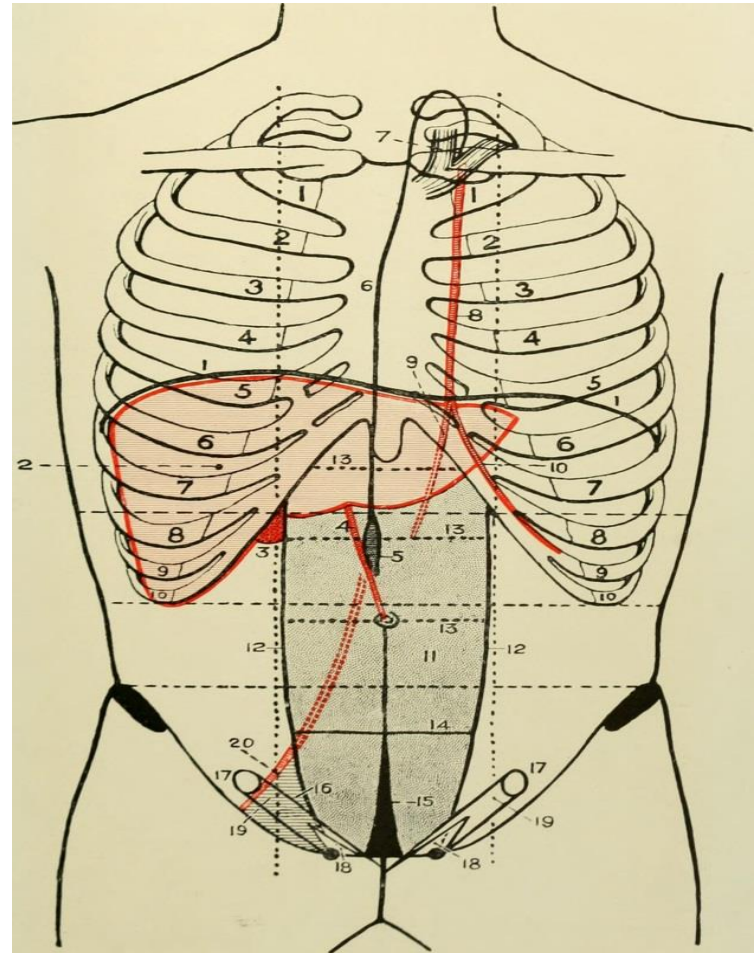


Figure. 12

Surface anatomy and land marks

The 1st rib lies deep to the clavicle and cannot be palpated. The lateral surfaces of the remaining ribs can be felt by pressing the fingers upward into **the axilla** and drawing them downward over the lateral surface of the chest wall.(figure.13)

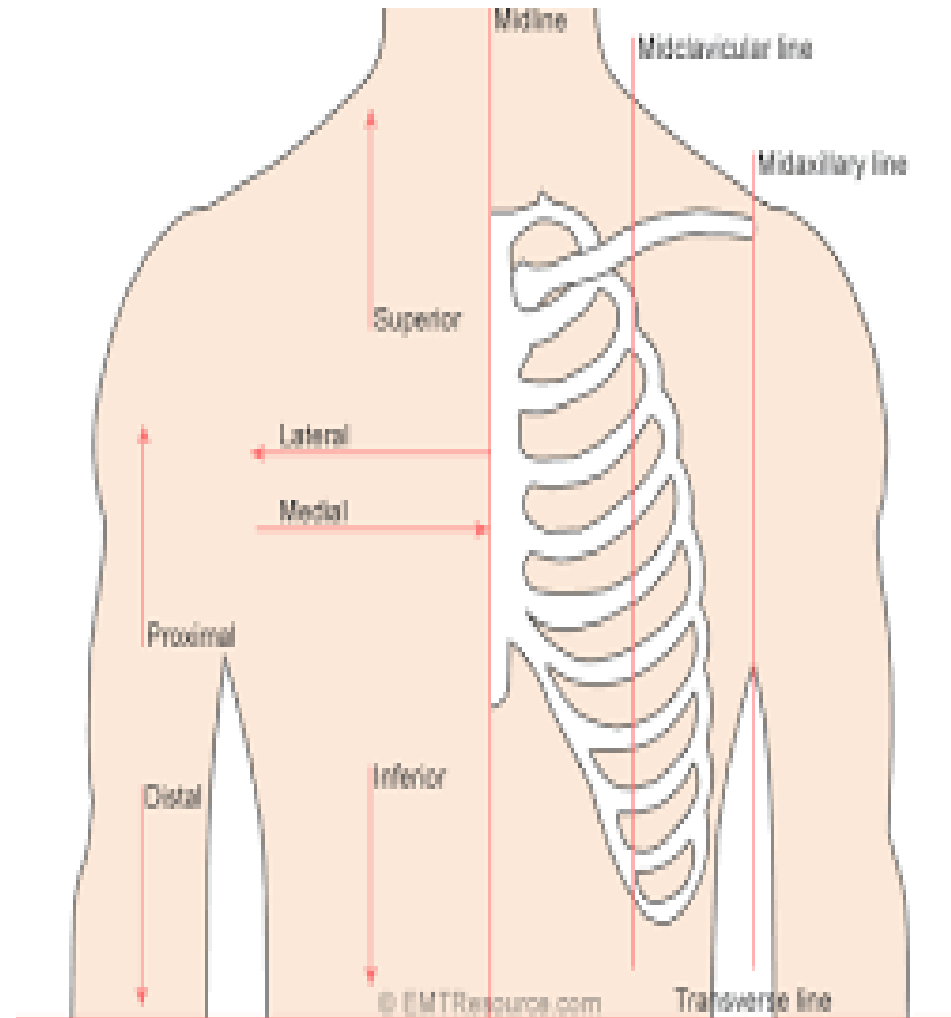


Figure. 13

Surface anatomy and land marks

Apex Beat of the Heart (figure.14)

The **apex** of the heart is formed by the lower portion of the left ventricle. The apex beat is caused by the apex of the heart being thrust forward against the thoracic wall as the heart contracts. **The apex beat is normally found in the fifth left intercostal space** 9 cm from the midline..



Figure.14

Surface anatomy and land marks

Nipple (figure.15)

In the male, the nipple usually lies in the **fourth intercostal space** about 10 cm from the midline.

In the female, its position is not constant.

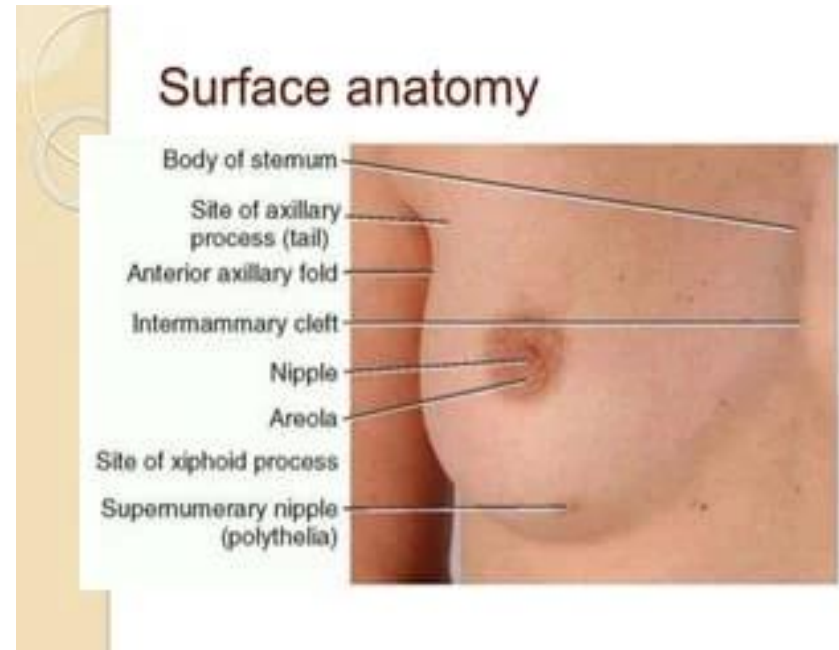


Figure.15

Surface anatomy and land marks

Axillary Folds

The **anterior fold** is formed by the lower border of the **pectoralis major muscle** (see Figs. 16). This can be made to stand out by asking the patient to press a hand hard against the hip. The **posterior fold** is formed by the tendon of the **latissimus dorsi** muscle as it passes around the lower border of the **teres major muscle**. (figure.16)

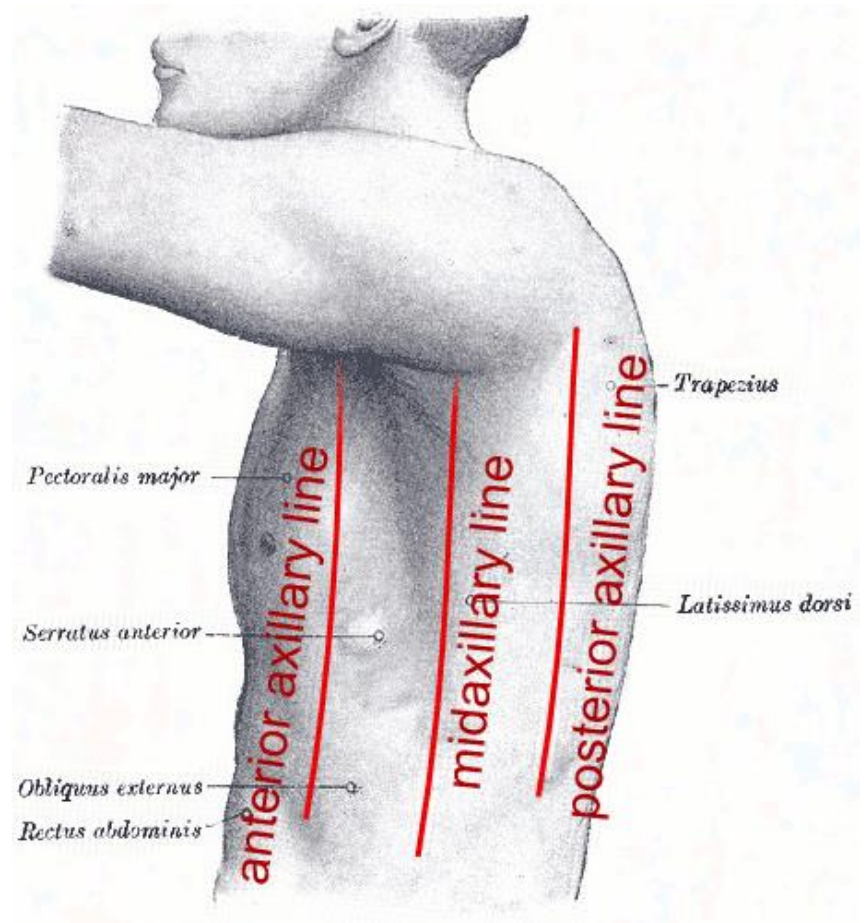
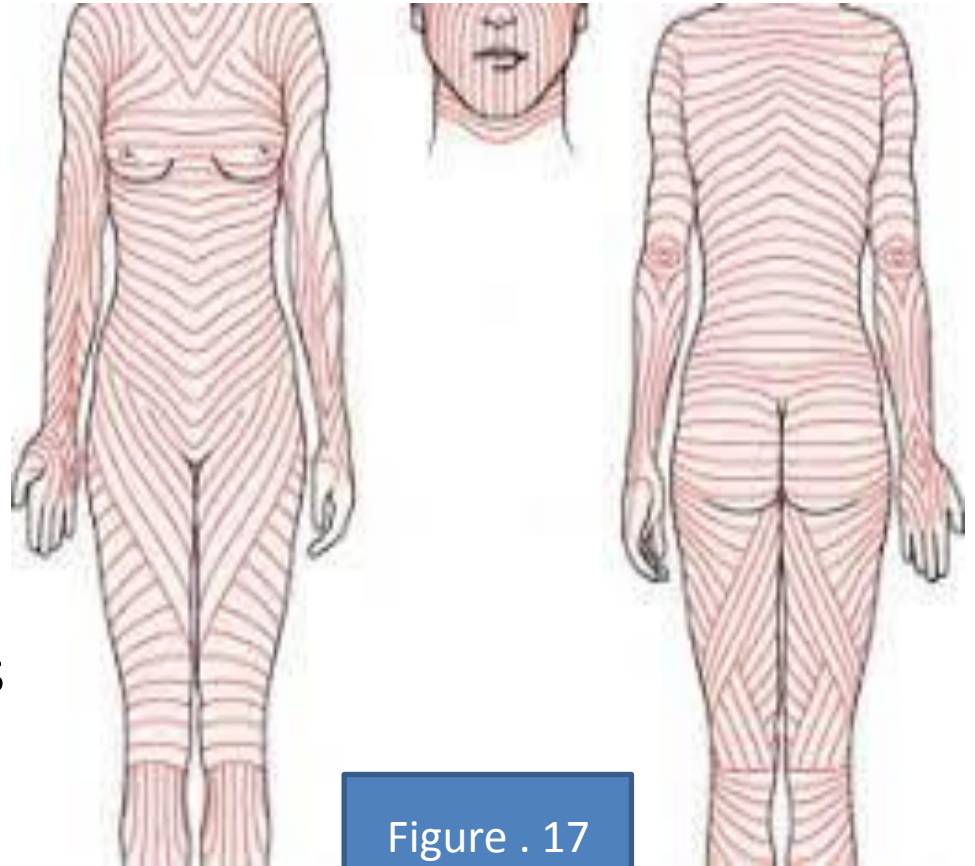


Figure.16

Surface anatomy and land marks

Skin tension lines, also known as **Langer's lines** or lines of **cleavage**, are **linear clefts in the skin that indicate the direction of orientation of the underlying collagen fibers**. If the skin is disrupted parallel to the long axis of the fibers, the wound tends to re-approximates. (figure.17)



Surface anatomy and land marks

Knowing the direction of Langer's lines within a specific area of the skin is important for [surgical](#) Operations particularly [cosmetic surgery](#). If a surgeon has a choice about where and in what direction to place an incision, they may choose **to cut in the direction of Langer's lines.(figure.18)**

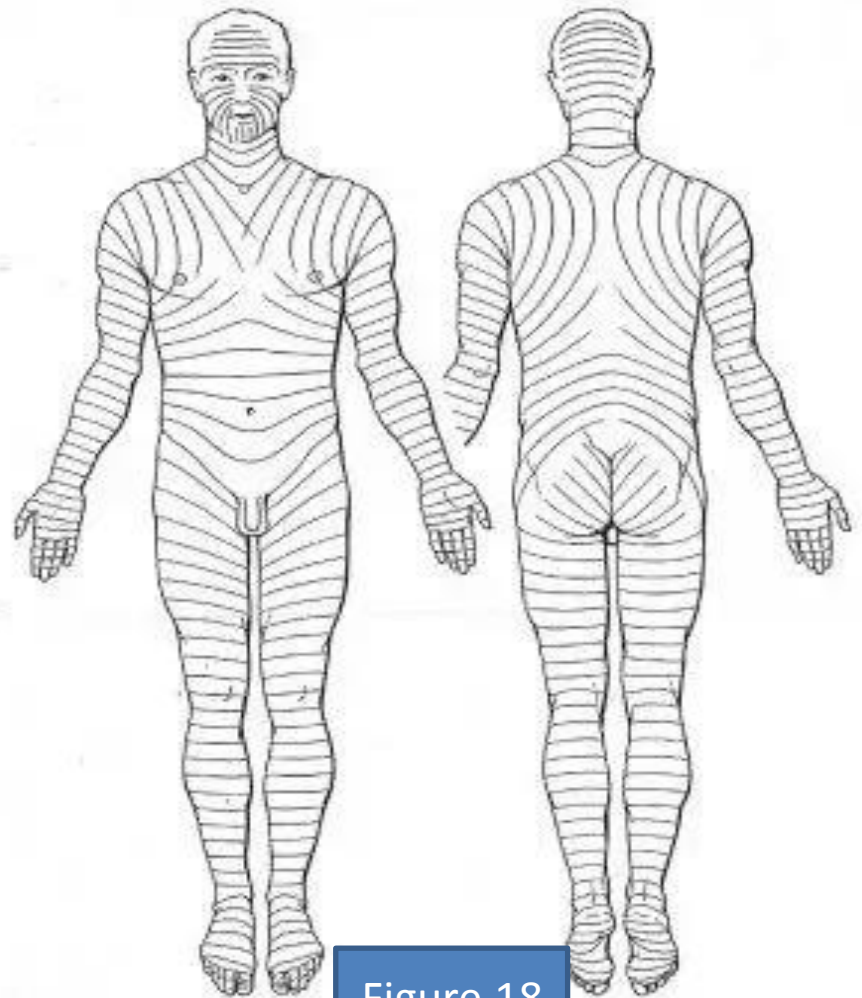


Figure.18

Surface anatomy and land marks

Incisions made parallel to Langer's lines may heal better and produce less scarring than those that cut across. (figure.19)

Conversely, incisions perpendicular to Langer's lines have a tendency to pucker and remain obvious, although sometimes this is unavoidable..



Figure.19

Surface anatomy and land marks

Langer's lines include breast static tension lines, which mark a guide for [breast surgery](#) incisions (**figure.20**).

Sometimes the exact direction of the collagen fibers are unknown, because in some regions of the body there are differences between different individuals. Also, the lines described by Kraissl differ in some ways from Langer's lines, particularly on the face.

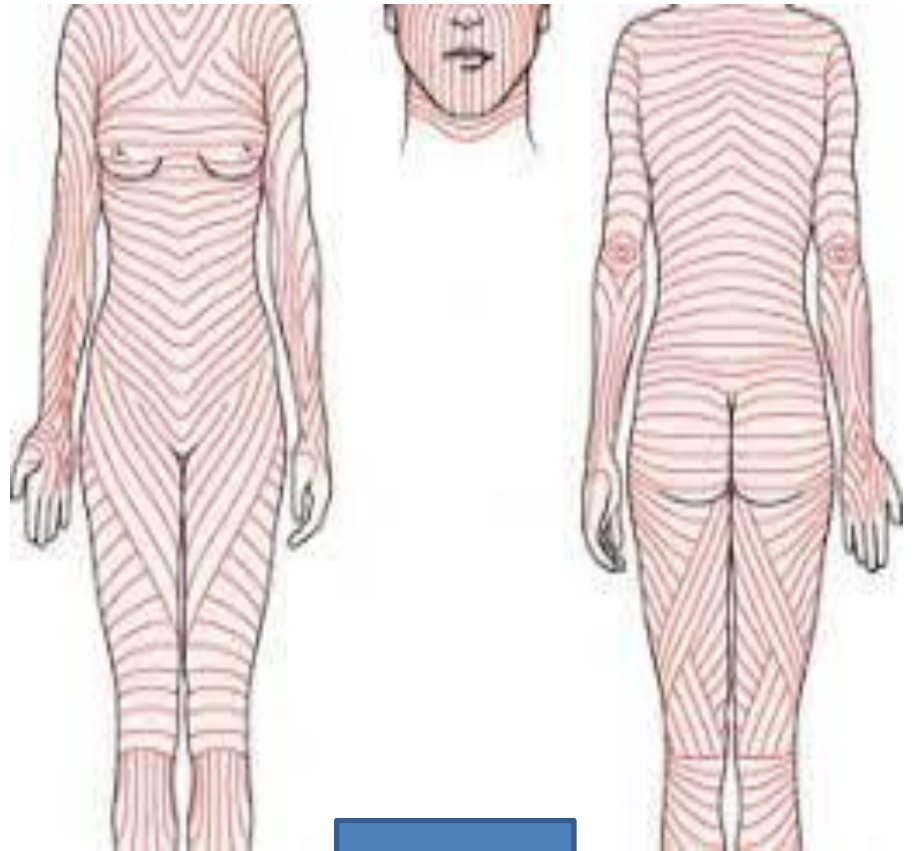


Figure. 20