

## Appendix 2

### Injection Sites

Anatomical site of administration may need to be determined by individual patient assessment and circumstance. The Dorsogluteal (often referred to as the Upper Outer Quadrant) has been traditionally the choice site of IMI medication administration (Greenway 2004); however, research has been shown to demonstrate that other muscle sites may be preferable for patient safety, choice and efficacy of drug absorption. (Cocoman and Murray 2008)

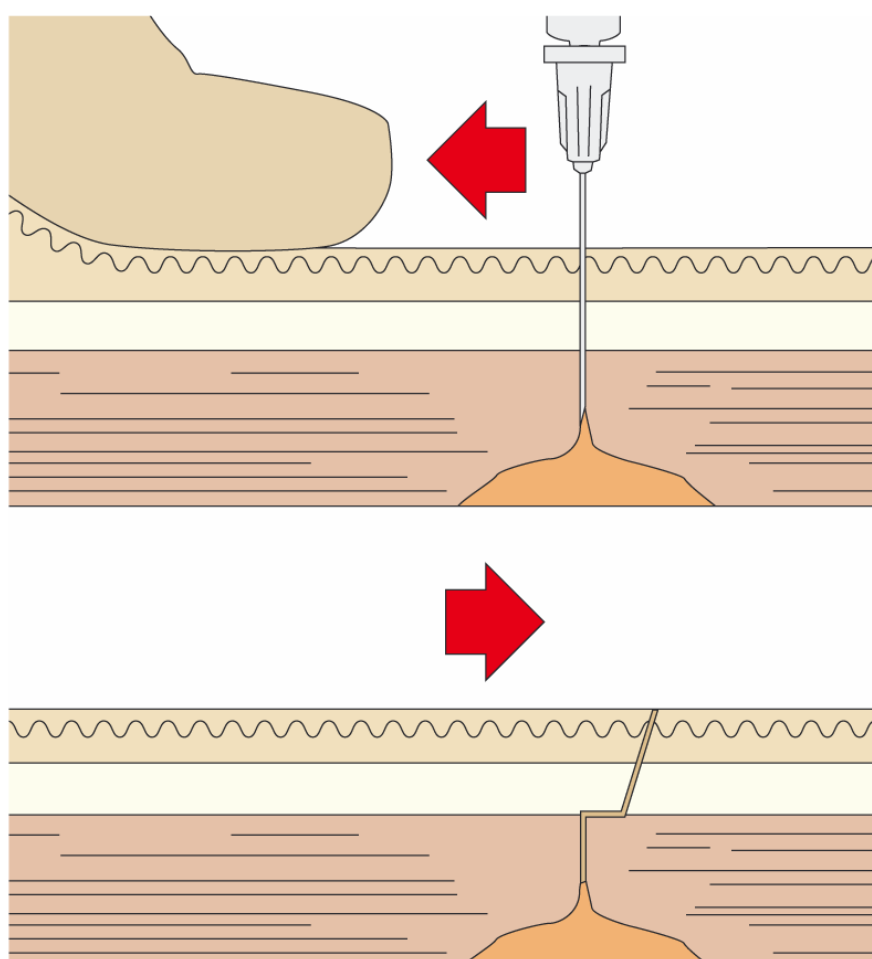
Detail and illustrations below of four commonly recognized injection sites are reproduced from Guidance on the Administration to Adults of Oil based Depot and other Long Acting Intramuscular Antipsychotic Injections (UKPPG).

### Z Track Technique

The Z-track technique involves displacing the skin and subcutaneous layer in relation to the underlying muscle so that the needle track is sealed off when the needle is withdrawn, thus minimizing reflux (**Fig 1**).

The Z-track method is used for intramuscular injections for following reasons:

- To prevent pain caused by certain substances if it seeps into the subcutaneous tissues
- To prevent permanent staining of the skin should it seep into subcutaneous tissues (E.g. Iron)
- Helps prevent leakage of drug through injection track intended for injection site, reducing bioavailability of critical dosages



**Fig. 1**

## Anatomical sites

### Dorsogluteal

Ask the patient to lie down and loosen their clothes so one buttock is exposed. Ideally, ask them to either lie on their back or side with the femur internally rotated to minimize pain on administration (Fig 2a).

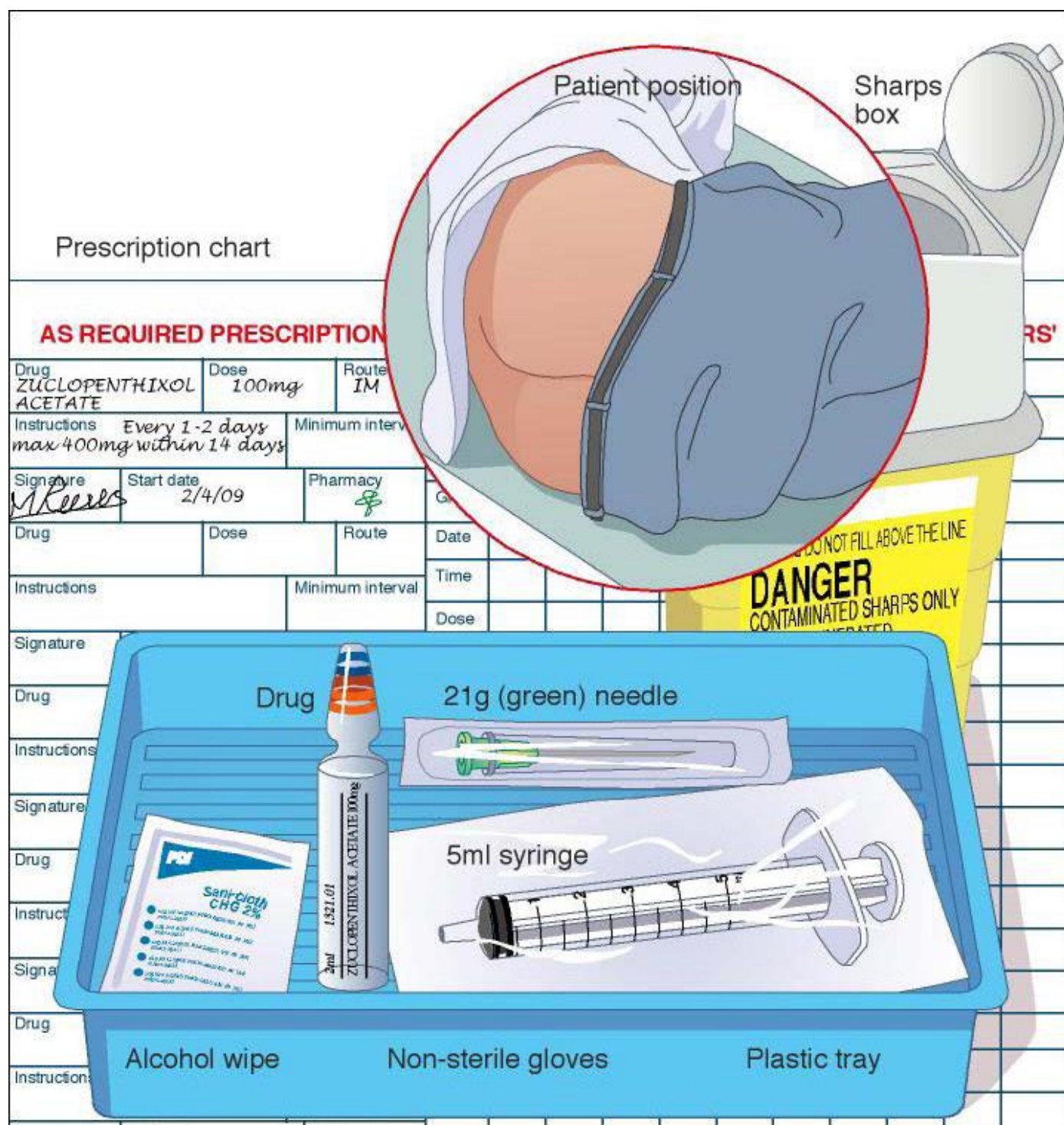
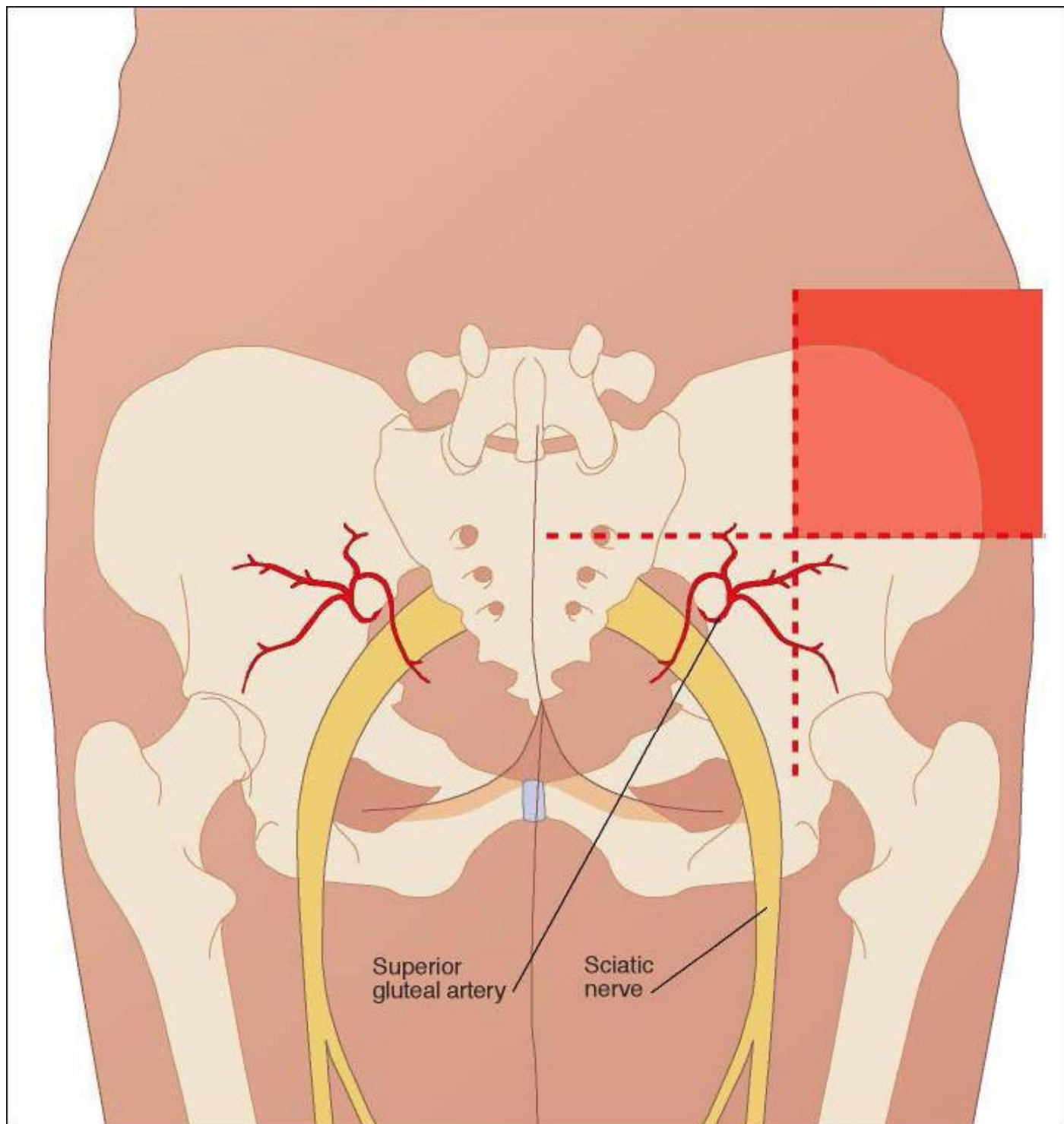


Fig. 2a

An appropriate needle length must be selected to reach the gluteus muscle, based on the Body Mass Index [BMI] of the patient. In obese patients with a BMI of 30 or more, a 5cm needle is required.

Draw an imaginary cross onto one buttock and identify the upper outer quadrant. Divide this first quadrant into quarters. The injection site is located within this second upper outer quadrant, approximately 5cm to 7.5cm below the iliac crest. **(Fig 2b)**



**Fig 2b**



## Ventrogluteal

Ask the patient to lie down on their side and expose their hip (**Fig 2a**).

Palpate the greater trochanter (**Fig 2b**). Place the heel of the opposite hand to the patient's leg on the greater trochanter (i.e. your left hand on their right leg or vice versa). Locate and place index finger on the anterior superior iliac spine and travel along it until it disappears to the patient's posterior. This action ensures your wrist and hand is in a perpendicular position. Your thumb should be pointing towards the front of the leg. Spread the middle finger to form a 'V'. The injection site is in the middle of this 'V'; level with the knuckles of your fingers. Visualize the site to prevent needle stick and administer using Z Track technique (**Fig 2c**).

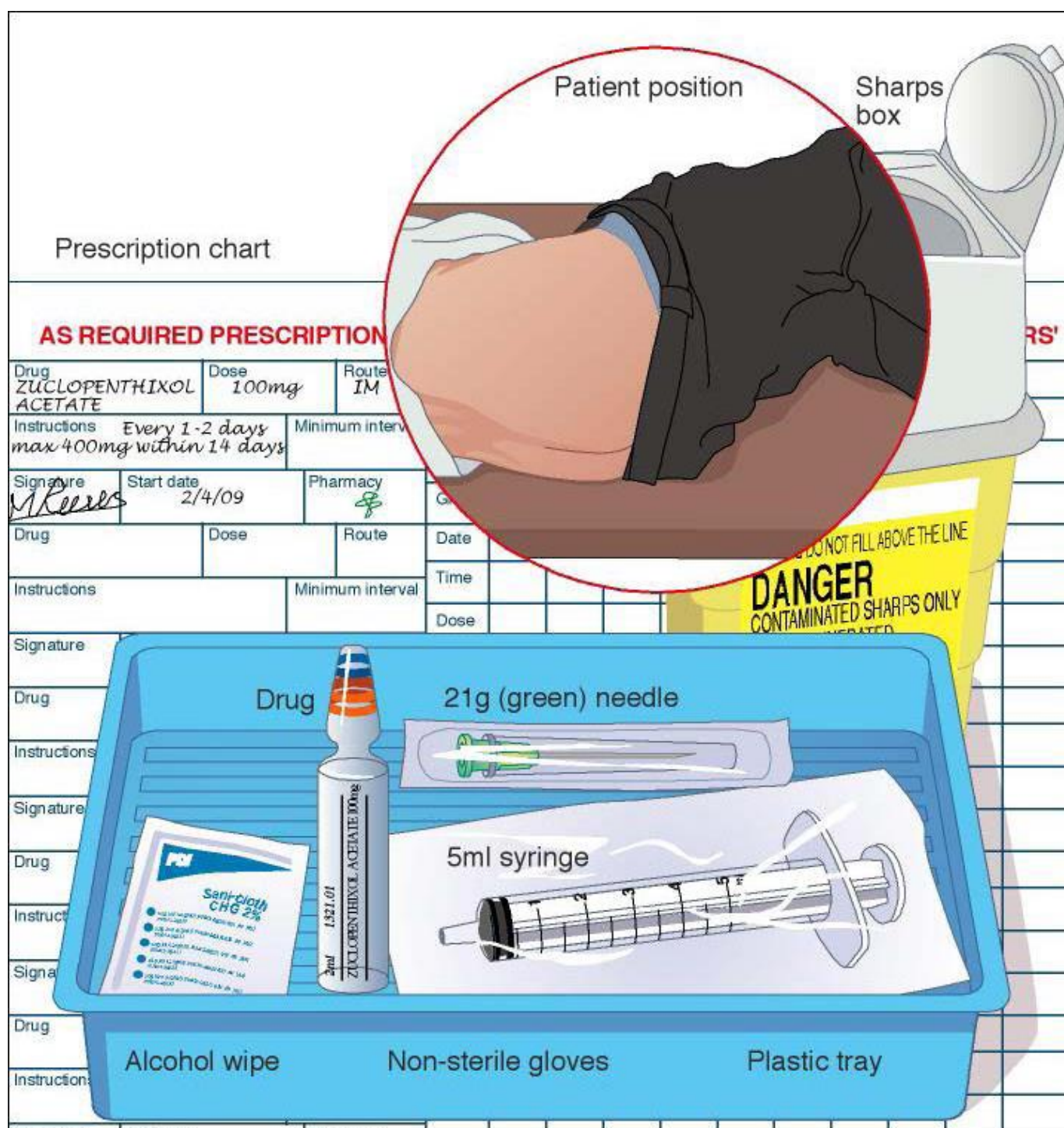
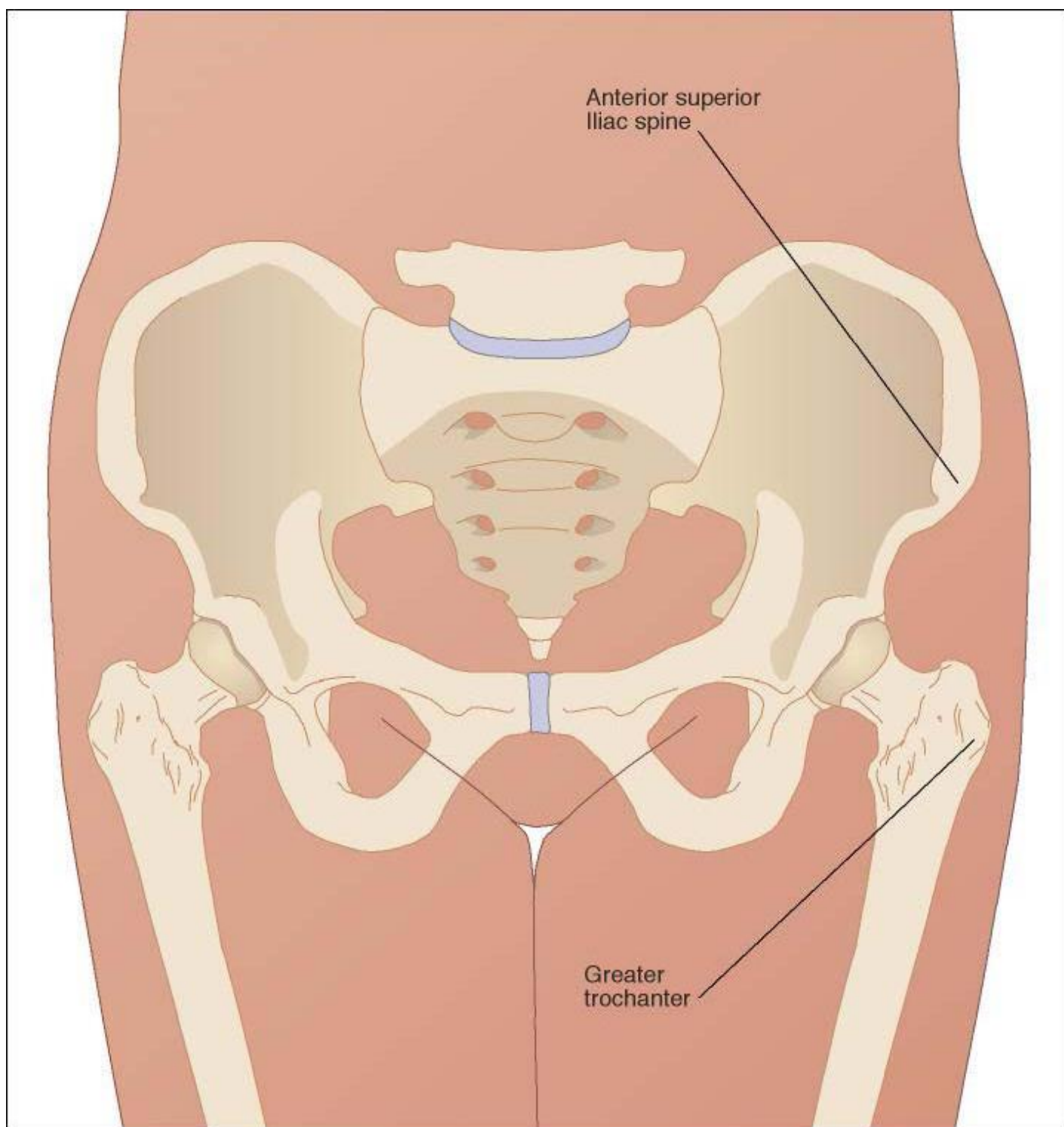
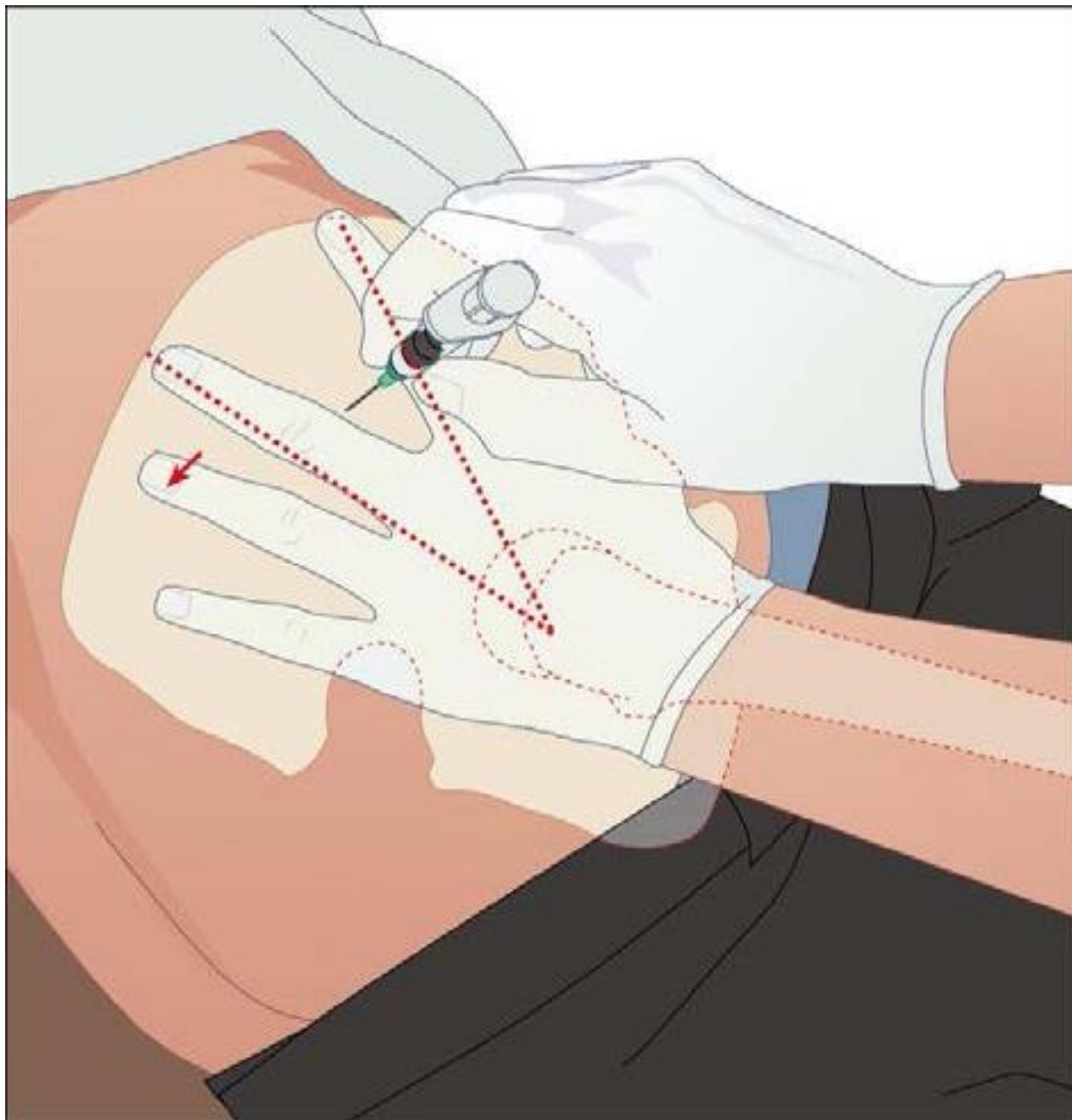


Fig 2a



**Fig 2b**



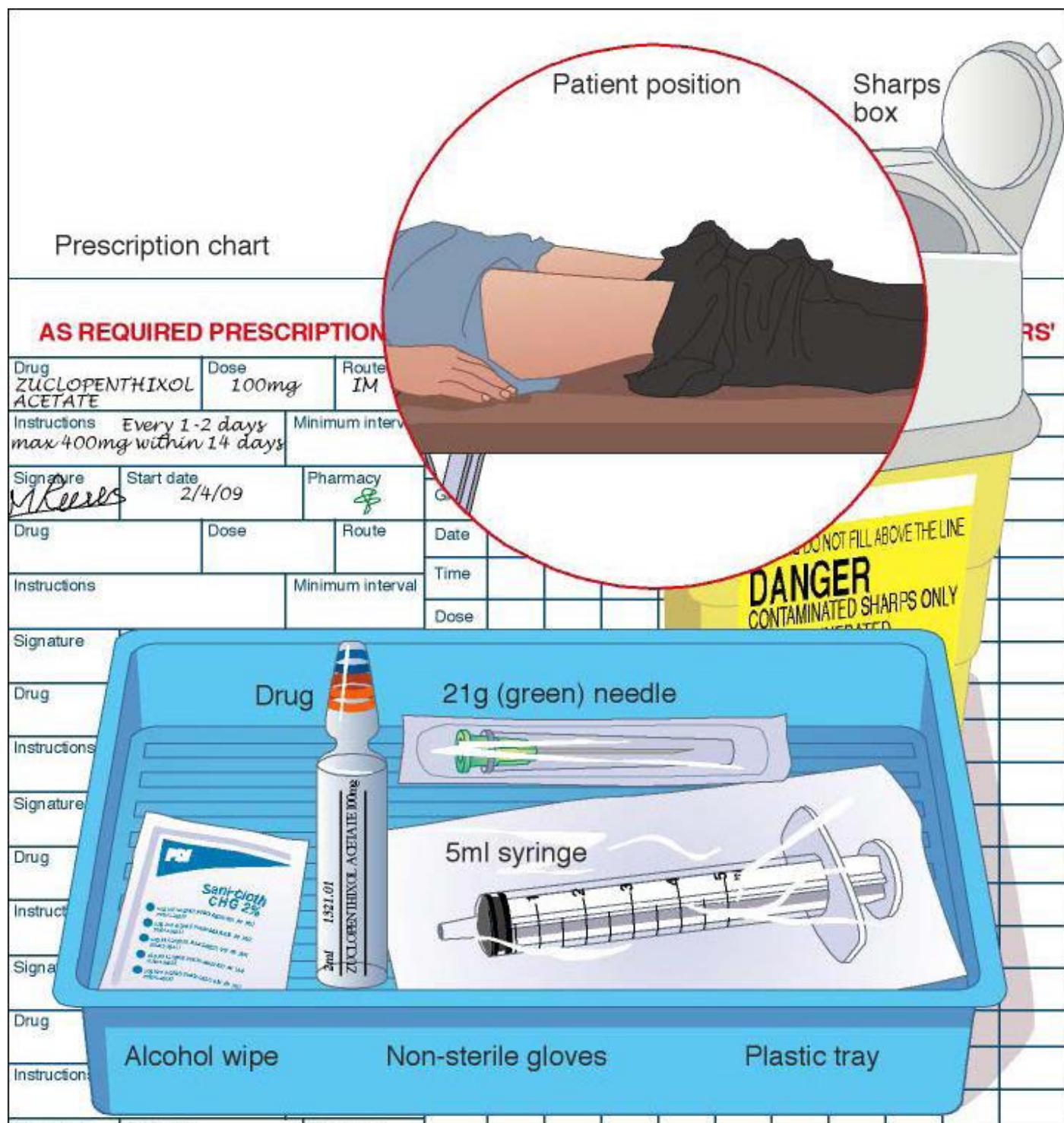
**Fig 2c**



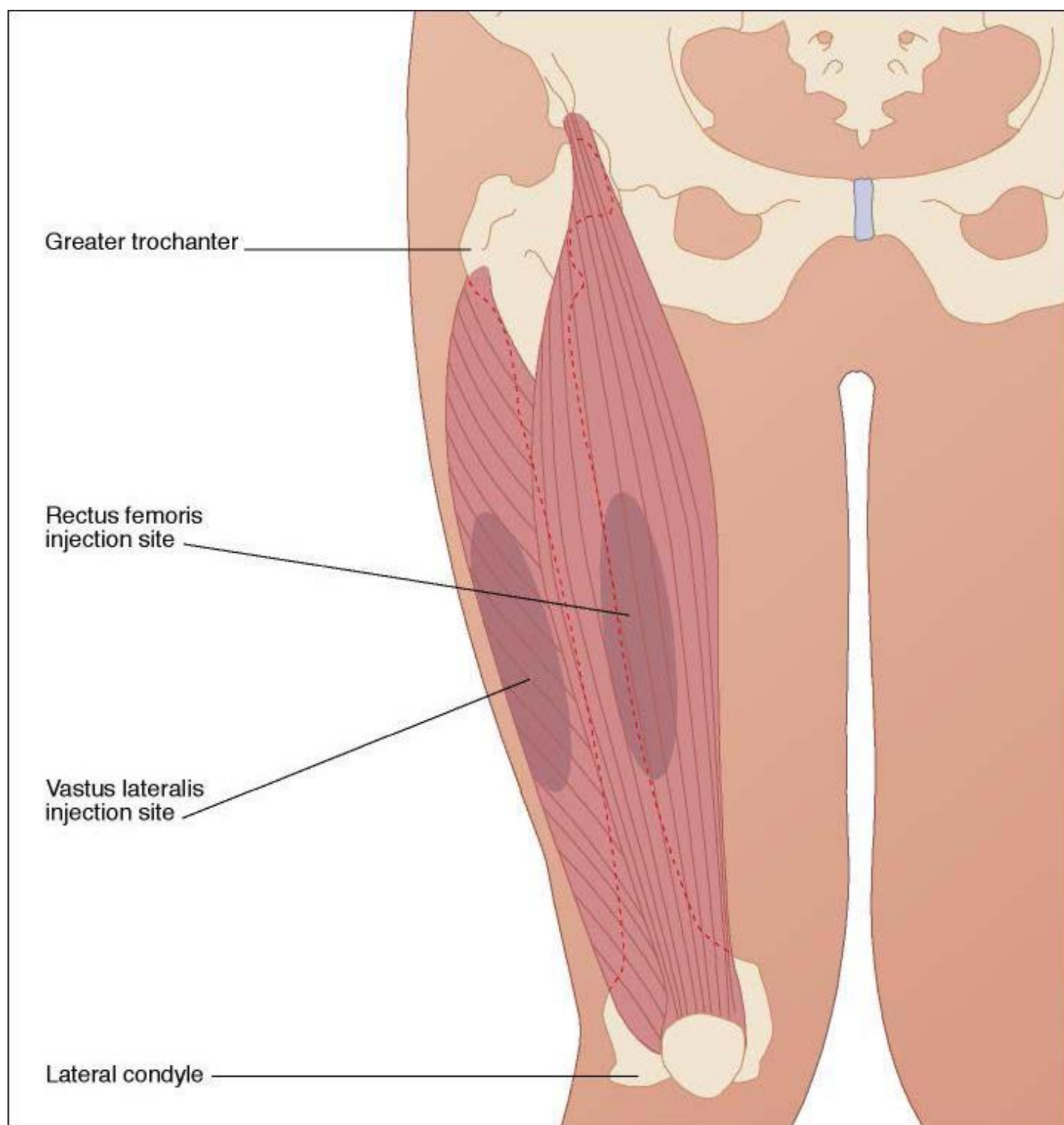
## Vastus Lateralis and Rectus Femoris

Ask the patient to either sit or lie down and expose their upper legs (**Fig 3a**)

The **Vastus Lateralis** site targets the lateral side of quadriceps femoris group of muscles and is situated in the anterior lateral aspect of the thigh. It can be located by placing the little finger of one hand on the Lateral Femoral Condyle of the knee and the little finger of the other hand on the Greater Trochanter. Both hands are then spanning the distance. The **Rectus Femoris** site also targets the quadriceps femoris group of muscles and is located midway between the patella and the superior iliac crest and the superior iliac crest on the mid anterior aspect of the thigh (**Fig 3b**).



**Fig 3a**



**Fig 3b**



**Visualize the site and administer using Z Track technique (Fig 3c).**

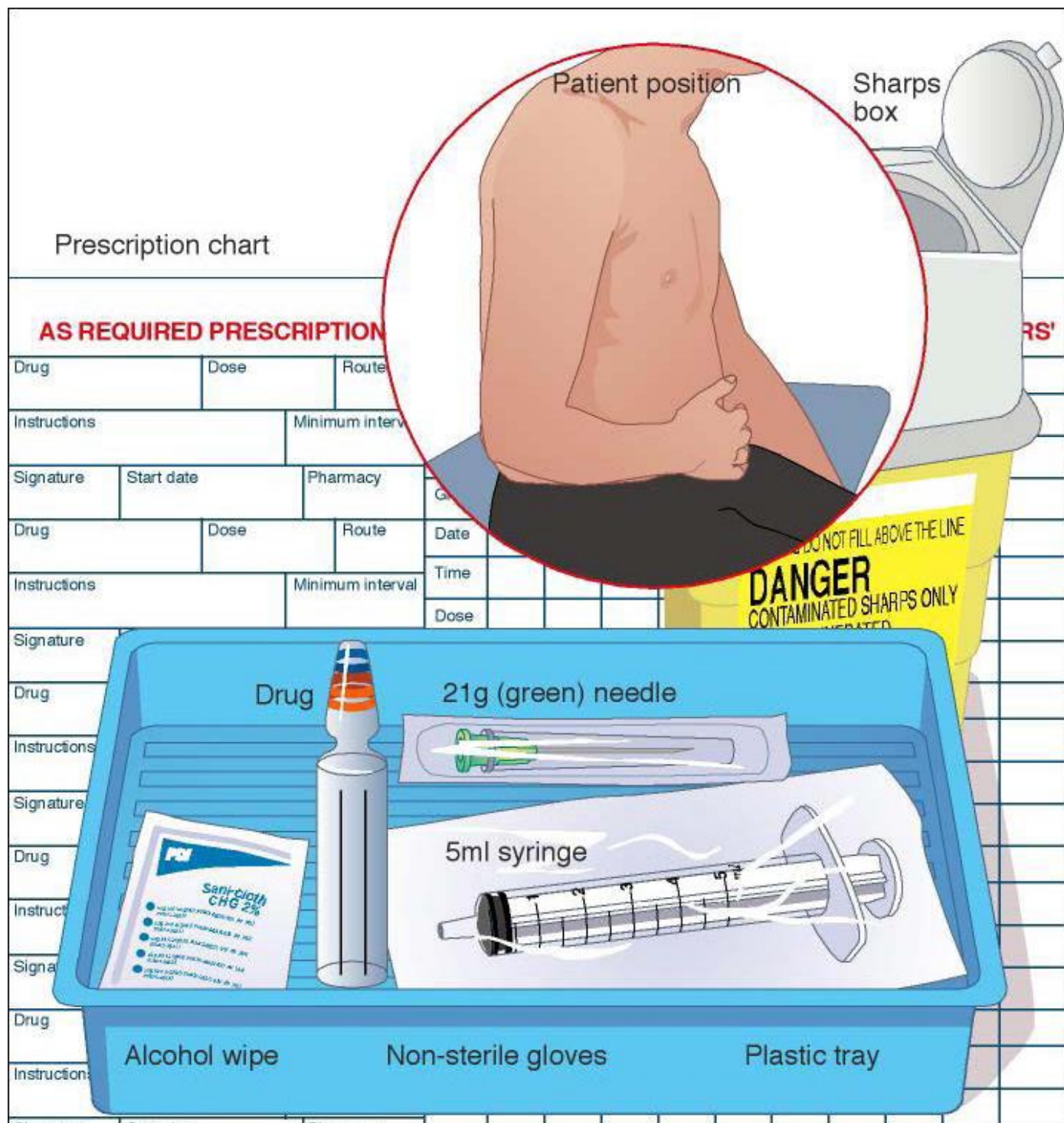


**Fig 3c**

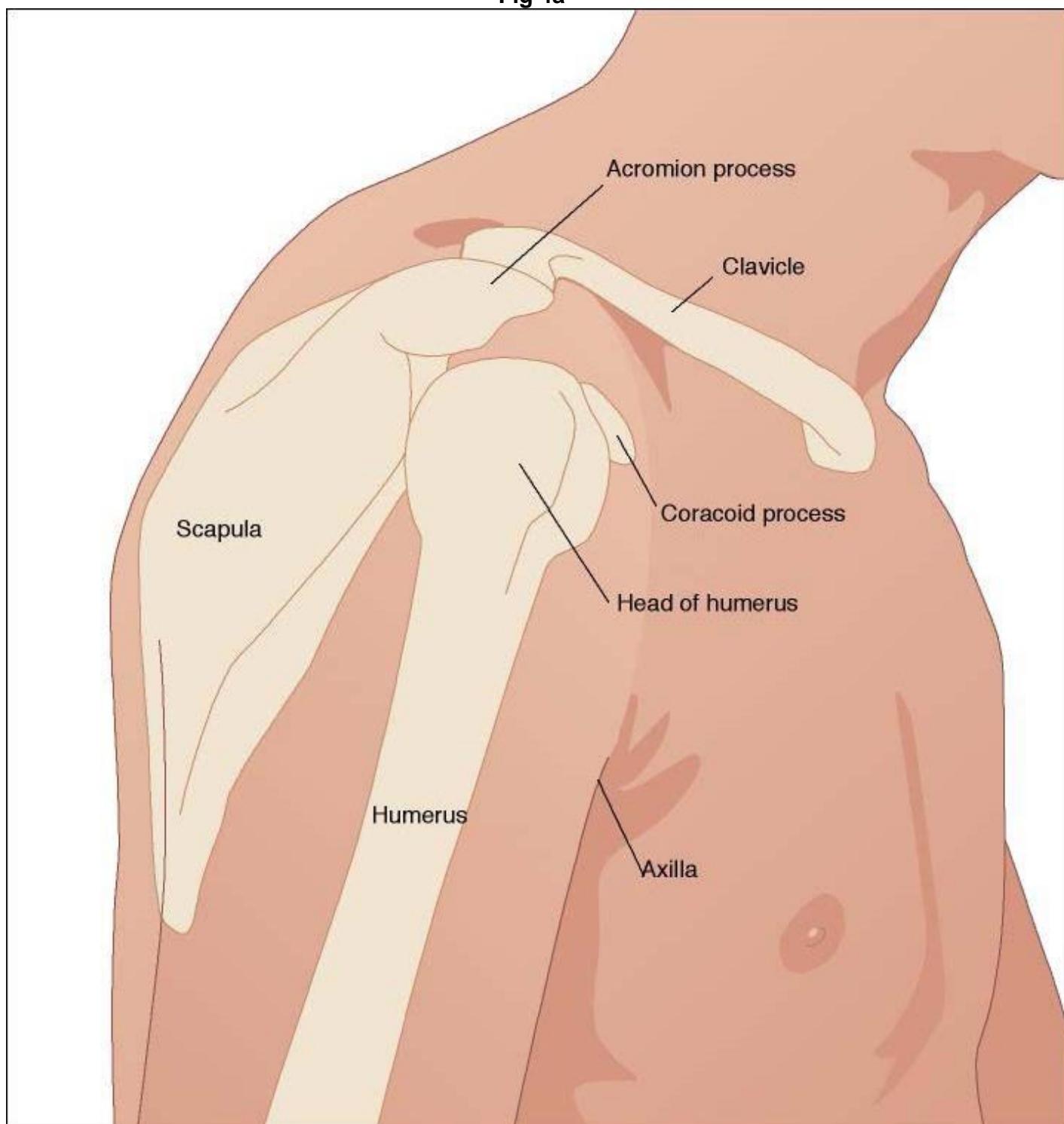
## Deltoid

Ask the patient to sit down and loosen their clothes so their arm and shoulder are exposed. Ask them to position their arm across their body to relax the muscles (**Fig 4a**).

Palpate the upper arm and find the landmarks of the acromion process and the axilla. The target injection site can be located by visualizing an inverted triangle, which extends from the base of the acromion process and extends down to a point level with the axilla. Now form a rectangle within the original triangle by placing two fingers below the acromion process – forming the top edge of the target site and with the bottom edge level with the axilla. The side edges should be parallel to the arm. The injection site is in the middle of this visualized triangle (**Figs 4b & 4c**). Administer using Z Track technique.

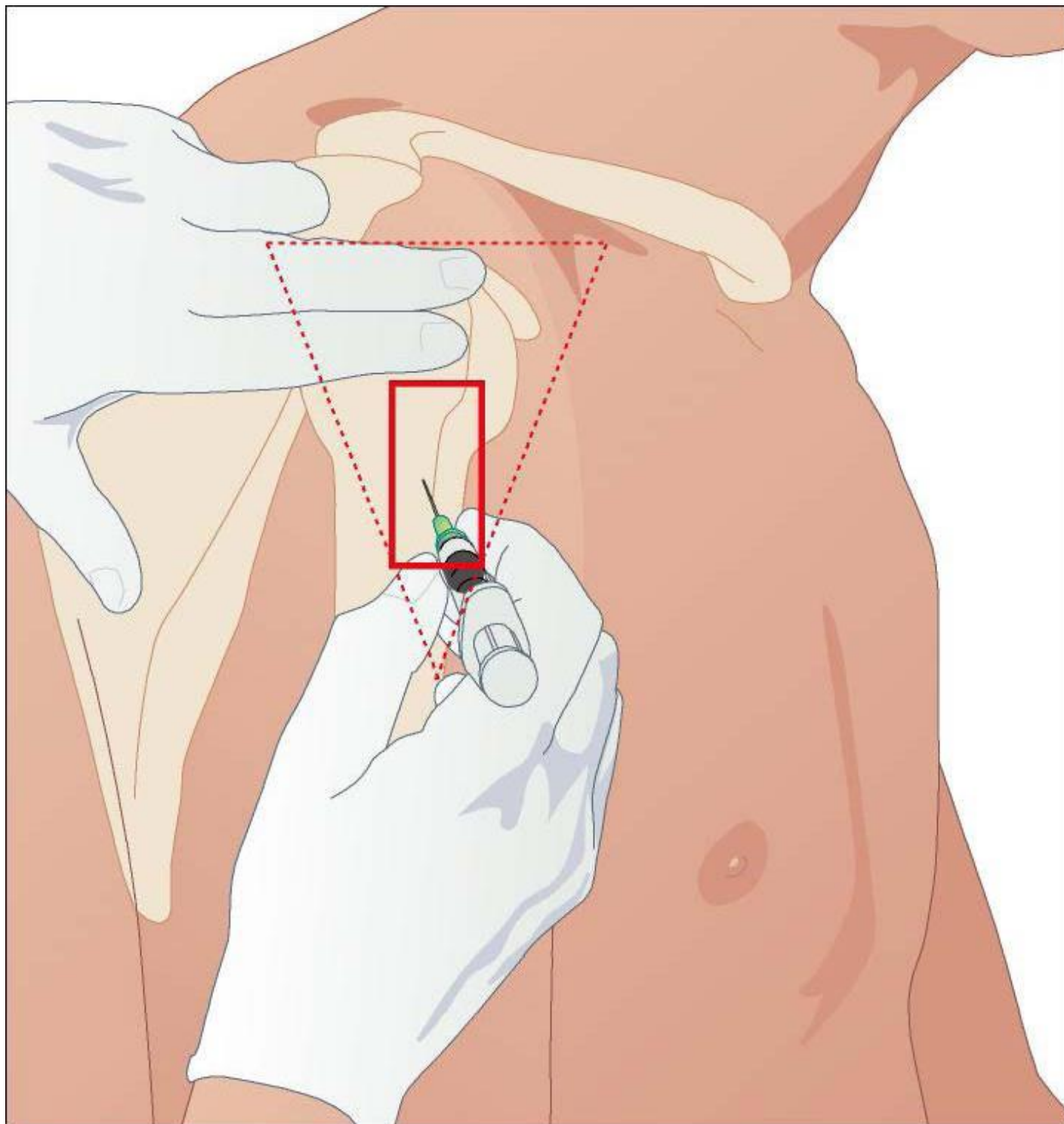


**Fig 4a**



**Fig 4b**





**Fig 4c**