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PROCEDURE	Manual: Clinical	Section: Vascular Access	Code No.: VA S035	Old Code No.: PROS35, I S35, IV S035
Title: Subcutaneous Butterfly - Initiation, Use, Maintenance and Discontinuation			Original Effective Date: Jul 01, 2002	
			Review/Revised Effective Date: Jan 03, 2020	
			Next Review Date: Jan 01, 2023	
Cross Index:	Authoring Committee/Program/Dept: Medicine Program		Approved By: SLT	

Purpose:

- To establish and maintain a subcutaneous infusion therapy site using the BD Saf-T-Intima™ safety butterfly. The BD Saf-T-Intima™ is a closed subcutaneous system used for intermittent or continuous medication or fluid administration.

Subcutaneous infusions provide continuous long or short-term administration of parenteral drugs or fluids into the loose connective tissue underlying the dermis. Fluid is absorbed into the intravascular compartment by a combination of perfusion, diffusion, hydrostatic pressure and osmotic pressure. A short length of catheter is used for several days, although therapy may last for months.

Indications:

- Subcutaneous infusions are indicated for patients in whom it is difficult or unsuitable to administer medications or fluids via intravenous, intramuscular, rectal or oral routes.

Responsibility:

- Nurse

Equipment:

- Clean gloves
- Antibacterial skin cleanser such as Chlorhexidine 2% or Chlorhexidine 2%/Alcohol 70%
- Saf-T-Intima™ Subcutaneous Butterfly (24G short peripheral intravenous catheter)
- ONE-LINK Needle-free IV Connector (endcap)
- 0.3mL of 0.9% sodium chloride (normal saline) flush
- Extension tubing (if continuous infusion)
- Transparent dressing
- Tape

Method:

Initiation (see [Appendix A](#)):

1. Confirm provider's order for medication, dose, route and frequency.
2. Gather supplies.
3. Perform hand hygiene and don gloves.
4. Explain procedure to patient.
5. Remove the white plastic vent plug.
6. For intermittent medication administration: Prime the Saf-T-Intima™ Subcutaneous Butterfly with 0.9% saline flush for intermittent administration.
7. For continuous infusion: Assemble the Saf-T-Intima™ and extension tubing set. Prime the assembled administration set with solution or medication to be infused.
8. Select appropriate insertion site (see [Appendix B](#)).

Note: Two BD Saf-T-Intima™ should not be placed in the same areas, for example it is preferable that each BD Saf-T-Intima™ should be placed on a different limb, or alternatively opposite sides of the abdomen.

9. Cleanse selected insertion site with antibacterial skin cleanser in a circular motion moving out to a diameter of approximately 8 cm. Allow antiseptic to air dry completely before catheter insertion.
10. Remove the clear plastic needle guard.
11. Be sure bevel is pointed upwards and not covered by the cannula. If bevel is not upwards, rotate white safety shield until bevel is up.
12. Grasp the textured sides of wings and bring them together, pinching firmly.
13. With other hand, using thumb and index finger gently pinch the skin around selected site to identify the subcutaneous tissue.
14. Insert needle at a 20-45 degree angle to full length of needle in one quick, smooth movement and lay wings flat on the skin.

Note: When inserting needle, insert in same direction as venous return (i.e. towards the shoulder joint in arm; towards the hip in leg; any direction in the chest avoiding breast tissue; towards the umbilicus in the abdomen). When using the abdomen, avoid the 2-inch diameter around the umbilicus and direct the needle laterally to prevent pinching when the client sits or bends.

15. There should be no blood return into the tubing. If blood return is noted, activate safety engineered device, remove catheter and initiate a new site using a new set.
16. To activate the safety mechanism, grasp the clear plastic safety shield and pull in a straight continuous motion while supporting the device by applying pressure to the wings. The shield will come off exposing the injection cap. Dispose of shield in sharps container.
17. Do not apply tape to wings. Cover with a sterile, transparent, semi-permeable dressing. Ensure the insertion site is visible for ongoing assessment. The tubing should be anchored with tape to avoid displacement.
18. Replace injection cap with a ONE-LINK Needle-free IV Connector to maintain a closed system and secure any loose tubing. Tighten all connections.
19. Remove gloves and perform hand hygiene.
20. Label site with date of insertion and initials of nurse inserting device.
21. Document date and time of insertion, insertion site, solution and complications during procedure.

** Note: Avoid insertion in the following sites: tender, hard, edematous, scarred, inflamed, bruised, bony prominence, tumour and ascites. Breast tissue will be avoided. It is best practice to use one BD Saf-T-Intima™ site exclusively for continuous infusion and another BD Saf-T-Intima™ site for breakthrough doses.

Use of Subcutaneous Butterfly (Intermittent/Continuous Medication Administration):

1. Assess condition of site and change site as necessary.
2. Prior to accessing any port or cap, clean the surface with a chlorhexidine 2%/alcohol 70% swab for 15 seconds using friction and a twisting motion. Allow to dry.
3. If administering a single medication, flush with 0.3 mL normal saline afterwards.
4. If administering multiple medications:
 - a. Compatible medications flush with 0.3 mL normal saline after last medication given.
 - b. Incompatible medications, flush with 0.3 mL normal saline in-between medications and following administration of the last medication given.

Note: Haloperidol requires its own designated site as it is not compatible with sodium chloride 0.9%.

Note: Refer to compatibility monographs and be mindful of the maximum volume of one time 3 mL per site for intermittent subcutaneous medications.

5. Attach labeled medication syringe and inject slowly.

Note: Tissue swelling is expected with subcutaneous injection. Do not massage site.

6. Deliver continuous subcutaneous administration of medications by infusion pump.
 - a. Note: The Y-sited (double port) BD Saf-T-Intima™ can be used for simultaneous infusion of two compatible medications.
7. Document medication administration on eMAR.

** Note:

- The maximum volume to be administered at one time is 3 mL per site.
- The maximum volume to be administered over an hour is 30 mL per site.
- The maximum rate of infusion for narcotics is not to exceed 10 mL/hr.

Maintenance of Subcutaneous Butterfly:

1. Monitor patient for systemic fluid overload, local and/or dependent edema, cellulitis, erythema, pain and leaking at site q shift and prn.
2. Change the subcutaneous site **every 7 days**, or immediately if there are signs of patency being compromised such as: redness, swelling, leakage, pain or hardness of the insertion site.
3. Change all tubing **every 7 days** for continuous infusions with site change or immediately if contamination or system integrity is compromised or with changes to the continuous medication orders.
4. Document solution type and volume infused every shift.

Discontinuation of Subcutaneous Butterfly:

1. Gather supplies.
 - o 2x2 gauze
 - o Tape
2. Perform hand hygiene and apply gloves
3. Explain procedure to patient.
4. Remove the transparent dressing.
5. Apply gauze over the insertion site and pull catheter out at the same angle it was inserted.
6. Apply pressure at site until no fluid leaks out. Apply gauze and secure with tape.
7. Dispose of subcutaneous butterfly in sharps container.
8. Remove gloves and perform hand hygiene.
9. Document the date and time, reason for discontinuing subcutaneous butterfly, condition of the site and skin, and patient tolerance.

Special Considerations:

Not applicable.

Appendix A

Points to Practice

Before you start

Wash your hands and prep the patient's skin according to organization's policy.

Priming...

To prime BD Saf-TIntima™ Y port: remove the vent plug and prime with IV fluids according to hospital procedure. replace the vent plug after priming before insertion.

2A



2B



Insertion

- Grasp the textured sides of wings and bring them together, pinching firmly (Fig. 2A).
- Using thumb and index finger gently pinch the skin around selected site to identify the subcutaneous tissue. (Fig.2B).
- Insert the full length of the catheter and needle through the skin at a 30°-45° angle. (Fig. 2B).



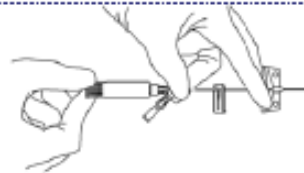
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Disposal

- Discard the needle immediately in a puncture resistant sharps container.



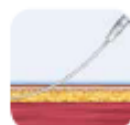
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Preparation

- Hold as shown (Fig. 1) and rotate the white safety shield to loosen the needle. (Fig. 1).
- Confirm that the needle bevel is facing up and that the catheter is not over the bevel before insertion.

3



Make sure the cannula end is sitting well within the subcutaneous layer - which is just under the skin - 2mm thick!

Needle Removal

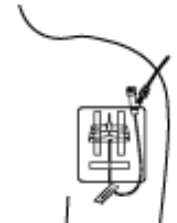
- Lay the wings flat on the skin surface and pull the white safety shield in a straight, continuous motion until the safety shield separates from the safety system. (Fig. 3).



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Stabilization

- Secure the catheter and apply a sterile dressing according to the organization's protocol.



1. Gibney MA, Azei CH, Byron KJ, Hinch LJ. Skin and subcutaneous adipose layer thickness in adults with diabetes at sites used for insulin injections: implications for needle length recommendations. *Curr Med Res Opin.* 2010; 26 (9): 1519-1530.

Refer to package insert for full instructions and safety information.

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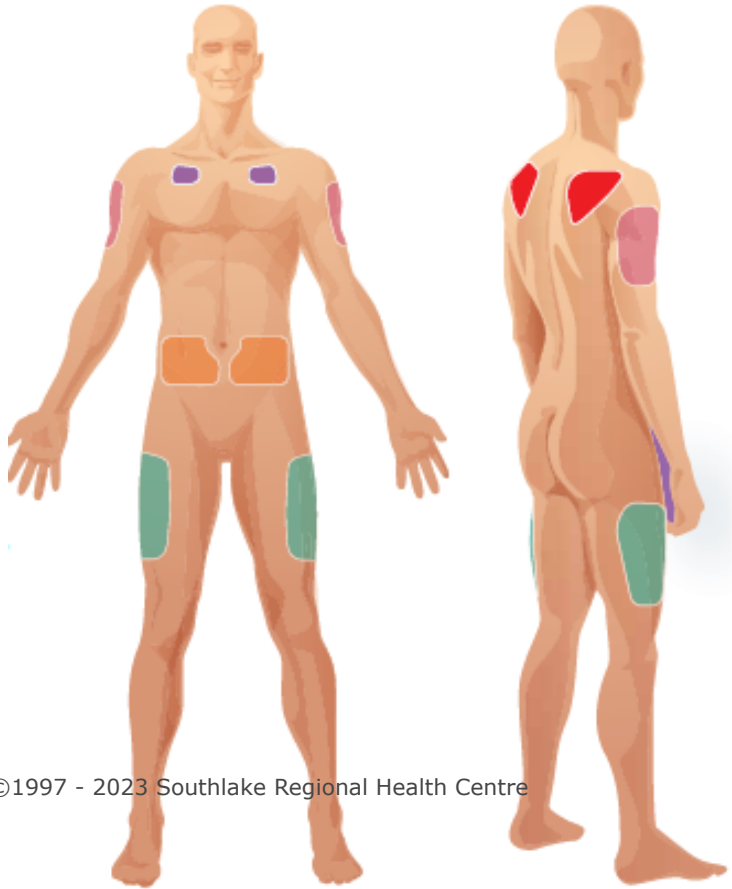


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Appendix B

Appropriate sites for subcutaneous infusion include:

- Scapula
- Subclavicular chest wall
- Anterior abdominal wall
- Anterior aspect of the upper arms
- Anterior aspects of the thighs



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References:

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