

3.1 Types of Soft Sets

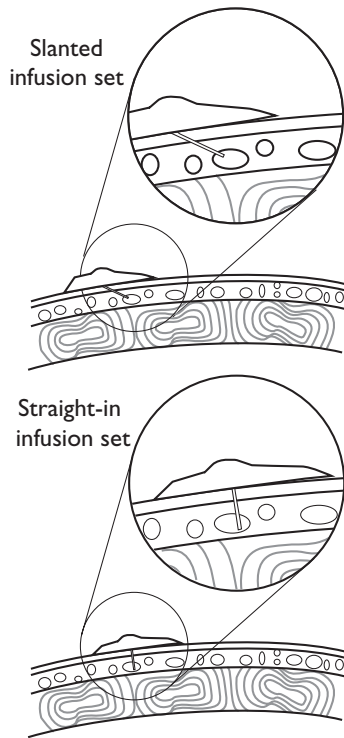
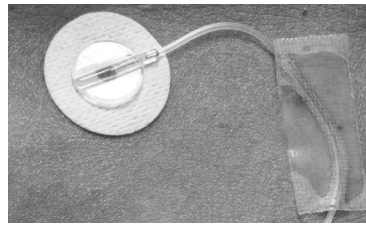


Fig. 3.3 Anchoring Helps



Anchor the infusion line with tape to significantly reduce set failures.

3.2 Wide Variety of Infusion Sets to Choose From

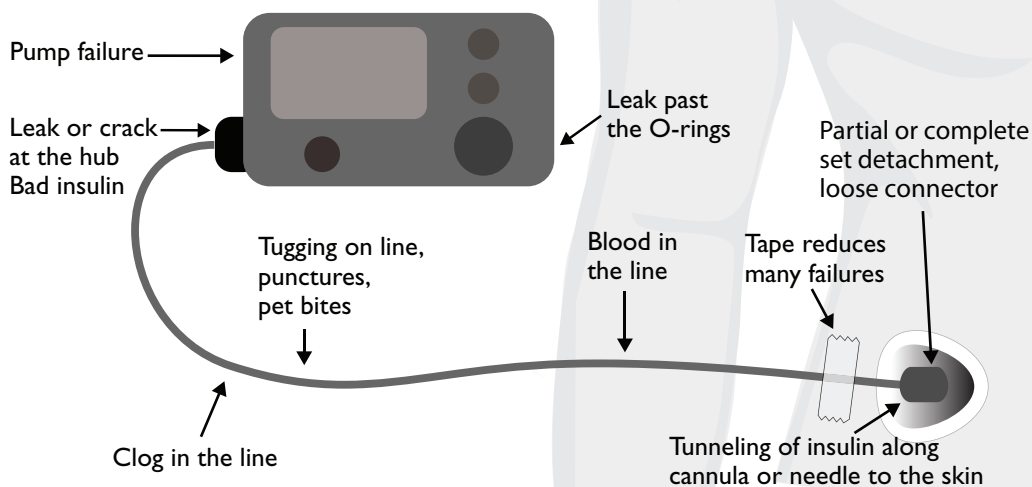
	Name	Cannula/Needle	Connection	Tubing
	Extended up to 7 days	Plastic, 90 degree, straight-in 6, 9 mm, 25 gauge cannula	Pinch & pull at site, proprietary	23, 32 inches
	TruSteel, Sure-T, Contact Detach, Rapid D	Metal, straight-in 6, 8, 10 mm 29 gauge needle	Pinch & pull 3 inches from site. Luer lock or proprietary	23, 32, 43 inches
	Ultraflex *	Plastic, straight-in 6, 8, 10 mm 25 gauge cannula	Pinch & pull at site Luer lock	24, 32, 43 inches
	AutoSoft 90, Mio 90 *	Plastic, straight-in 6, 9 mm 25 gauge cannula	Pinch & pull at site* Luer lock for Inset or proprietary for Mio	18, 23, 32, 43 inches
	Inset 30, Mio 30, and AutoSoft 30*	Plastic, slanted 30-45 degree, 13 mm 25 gauge cannula	Pinch & pull at site* Luer lock	23, 43 inches
	Varisoft, Silhouette *, Tender, * Comfort*	Plastic, 20-45 degree slanted, 13 or 17 mm cannula 25 gauge cannula	Pinch & pull at site* Luer lock or proprietary window over site	23, 32, 43 inches
	Autosoft XC	Larger grip for disconnecting	Pinch & pull at site*	5, 23, 32, or 43 inches

* Inserter Available

See also www.diabetesnet.com/diabetes-technology/infusion-sets

Figure 3.4 Where Insulin Delivery Can Fail

Successful insulin delivery brings insulin into your body through a flexible tube that ends with a small plastic cannula or metal needle inserted just under the skin. The cannula or needle is held in place on the skin by an adhesive patch.



3.5 Be Prepared for Infusion Set Failure

1. Suspect Infusion Set Failure When:

- You have symptoms of high glucoses such as thirst, frequent urination, tiredness, fruity breath or stomach ache.
- Ketones are elevated. See Box 3.8.
- Glucose stays high (above 300 mg/dL or 16.7 mmol/L) after a correction bolus and continues to rise.

2. Act Fast:

- Give insulin by pen or syringe to cover the high glucose and missing basal delivery.
- Change the infusion set and resume basal rate.
- Check glucose every 30 minutes until you are sure the infusion set is working and your glucose stays below 240 mg/dL (13.3 mmol/L).

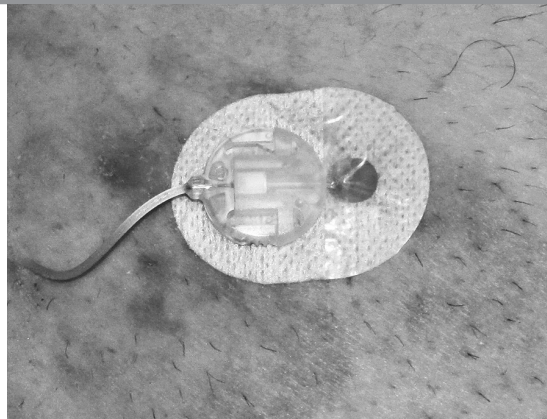
3. Know Who to Call:

- Manufacturer's help line
- Your healthcare professional

3.6 Infusion Set Options

Steel	Soft
<ul style="list-style-type: none"> • No kinking • Straight • Lower profile for children, sports, or carrying a child • Disconnects away from needle – anchoring only needs to be done once at insertion • Manual insertion • Few to no silent occlusions • Small 28-30 gauge needle • Biocompatible with less back pressure³⁷ • Straightforward insertion 	<ul style="list-style-type: none"> • More selection • Straight or slanted • Less needle phobia with autoinserters • Disconnects at cannula – anchoring of line advised after each disconnect • Higher profile • Manual or automatic insertion • No tugs on cannula if anchored • Possible silent occlusions • A larger 25 gauge plastic cannula and 27 gauge introducer needle
<ul style="list-style-type: none"> • Omnipod has an angled soft cannula that reaches a depth of about 5 mm or 0.2 inch. • Tandem Mobi is a small attached pump that uses infusion sets as short as 5 inches. 	

Fig. 3.7 Pump Bumps & Lipohypertrophy



Multiple pump bumps (dark spots) can be seen at infusion sites in someone not rotating sites or anchoring infusion lines with tape. Lipohypertrophy (fat enlargement) was also present.

3.8 Ketone Testing Meters

The **Freestyle Optium Neo**, **Abbott Precision Extra**, and **Nova Max Plus** meters test glucose in 5 seconds and ketones in 10 seconds using different strips. A blood ketone level below 0.6 mmol/L is normal. A level between 0.6 and 1.5 mmol/L shows early ketosis. When a ketone level is above 1.5 mmol/L, you are at a high risk of developing serious DKA.

Bayer Ketostix or Keto-Diastix strips test urine ketones without a meter. A moderate or large urine ketone test indicates ketosis or severe diabetic ketoacidosis (DKA) is underway. Urine testing takes longer to detect DKA.

Ask your clinician for a prescription.