

# Insulin Pump Therapy



Shila Hill, BSN, RN, CDE

# Objectives

- Provide understanding of insulin pump therapy.
- Assessment of patients that are appropriate for insulin pump therapy.
- Advantages and disadvantages of insulin pump therapy.
- Different types of insulin pumps.

# Intro

- Insulin pump aka CSI:
- Continuous infusion of a short-acting insulin driven by mechanical force and delivered via a needle or soft cannula under the skin.



# Insulin Pumps

- Alternative to multiple daily injections of insulin by insulin syringe or an insulin pen and allows for intensive insulin therapy when used in conjunction with BG monitoring and carb counting.



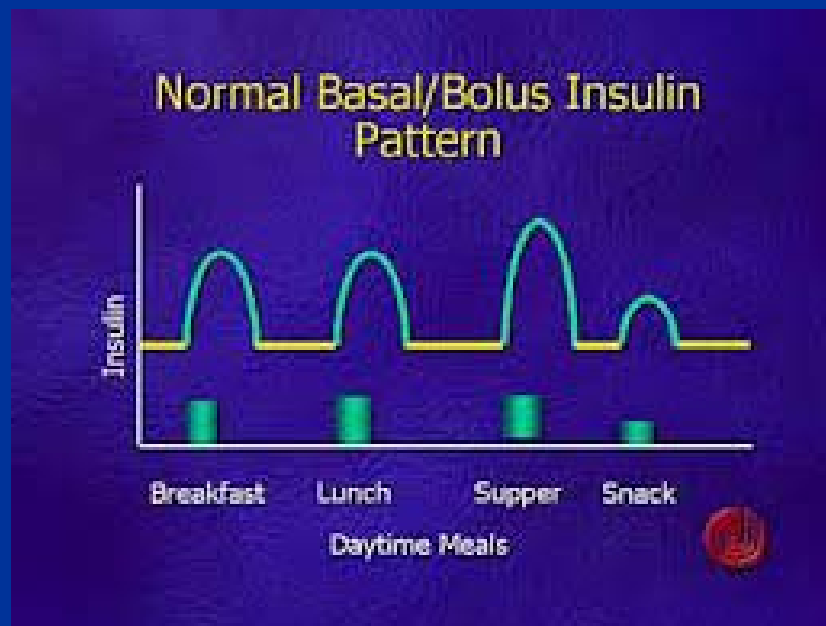
# Have you ever heard this?

- “My doctor said that I could have a device placed on me that will control my blood sugar because my diabetes is so poorly controlled...”
- Only as good as the user.



# Basal and Bolus

- Basal: background insulin needed by the body 24 hrs a day.
- Bolus: insulin released in response to food.



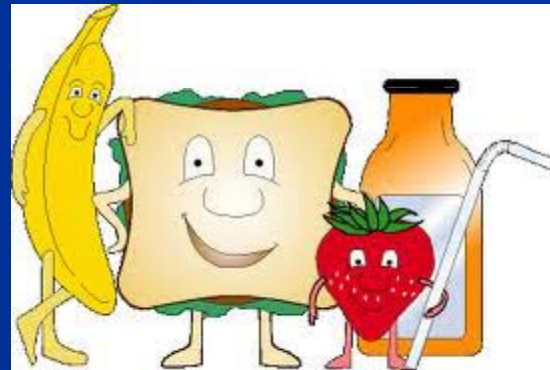
# Pump settings: Basal

- Basal rates 12a-3a: .20 u/hr, 3a-7a .25 u/hr, 7a-1p .30 u/hr...
- Why would it be helpful to have different rates?



# Pump Settings: Bolus

- BG target: i.e. 120
- Correction factor: how much 1 unit of insulin will bring blood glucose down. i.e. CF: 1:70.
- Insulin to carb ratio: 1 unit of insulin will cover this many grams of carbohydrate. i.e. CF: 1:15.





# Pumpers

Pump candidates:

- Ability to handle the technical and mechanical functions of the pump.
- Type I , Type II.
- Pregnancy.
- Good understanding of carb counting.
- Monitor BG regularly.
- Frequent hyper- or hypoglycemia.
- Nocturnal hypoglycemia.
- Problem solving.

# Advantages



- More flexibility by not having to follow a strict schedule for eating, activity, and insulin injections.
- Mimics physiologic insulin requirements.
- Better predictability for insulin absorption.
- Fewer injections.
- Improved A1C.
- Fewer hypoglycemic episodes.
- Reduced long-term complications related to diabetes.

# Disadvantages



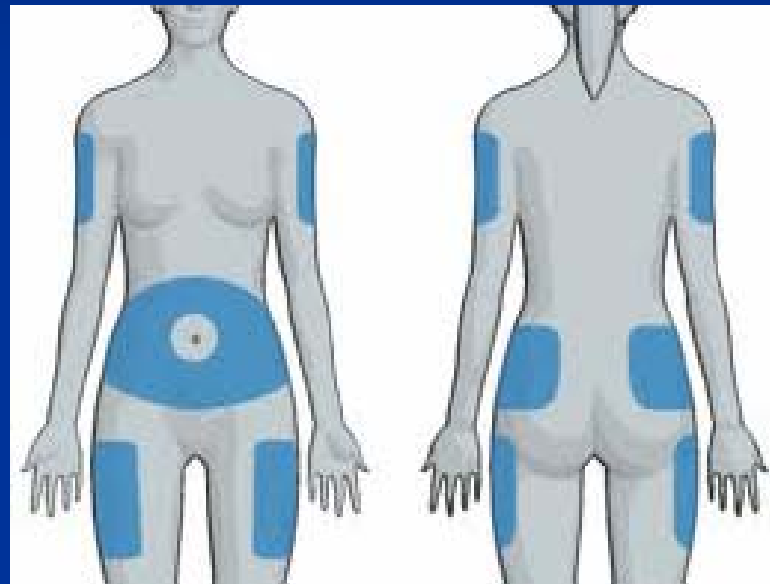
- If insulin delivery is interrupted, BG will rise quickly.
- Being attached to pump all of the time.
- Visibility.
- Issues with pump sites.

# Pumps have come a long way

- First insulin pump in the early 1960s.



# Infusion Sites



# Pumps



# Pump supplies

- Infusion set



- Reservoir

