Diabetes Self Management

Insulin Pump Training Program

Pre-Pump Class

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The Diabetes Self – Management
Insulin Pump Therapy Program

- Is part of a Nationally recognized program taught by CPT’s
- Offers classes during the daytime in a three part series:
  PRE-PUMP CLASS
  SALINE START CLASS
  INSULIN START CLASS
- One week and month MD follow-up
PRE-PUMP CLASS

- What is pump therapy?
- Criteria for insulin pump use
- Why you are interested in pump therapy?
- Skills survey
- Intro to using pump blood sugar log sheets
- Hands on experience with pumps/infusion sets
- Handouts: DVDs and pump packets
- Consents / Contracts signed.
Insulin Pump Therapy

Should You Use an Insulin Pump?

- Goal is to keep blood sugar as close to normal as possible/prevent long term complications.

- Ask yourself these questions.
  - Why pump therapy?
  - What are you not getting now?
  - Do children become self conscious?
  - How will your child handle the pump away from home?
  - How do you know your child wants the pump?
  - What should a parent’s job be with the pump?
The insulin pump delivers insulin very similar to the way the normal pancreas does: a small amount of insulin throughout the day and a delivery of insulin “on demand” when you eat or other times you need extra insulin.

**BASAL RATE:**
A continuous flow of insulin given throughout the day. This rate can be programmed to increase or decrease according to your individual needs. A properly set basal rate will keep your blood glucose (BG) within target range with no food or exercise.

**BOLUS:**
A delivery of insulin you give each time you eat (all meals and all snacks) or other times you need extra insulin.
Rapid Insulin For Pump Therapy

Rapid acting insulin is used in the pump

- Novolog, Humalog, Apidra

- Improved before meal glucose (preprandial)

- Improved after meal glucose (postprandial)

- Improved overnight glucose
How Does Pump Therapy Work?

- How is the pump made?
- How is the pump powered?
- How big is the pump?
- What is a pump reservoir/cartridge?
- What is an infusion set/pod?
- What does a cannula/catheter do?
- How do you do an insertion and where is it placed?
- How often do you change your infusion set/pod?
- What kind of warranty/upgrade do pumps have?
Variety of Infusions Sets
Insertion needle size
Example of size of cannula
How Does Pump Therapy Work?

An insulin pump administers insulin through a catheter in the abdominal fat to help control a person's blood sugar levels.
SITES MUST BE ROTATED!
Pump Management Involves a High Level of Diabetes care

- Family commitment
- Family learning
- Counting carbohydrates
- Calculating insulin doses
- Understanding rapid acting insulin
- Detailed record keeping
Insulin therapy using the PUMP

Pros

- Lifestyle flexibility - meals, snacks, exercise, sports, parties, sleeping in
- Insulin can be matched to daily schedule
- Easier sick day management
- Managing growth spurts
- Managing Dawn phenomenon
- Improved hypoglycemia awareness
- Dosing increments as small as .025 unit
- Improved exercise management
- Improved control (less roller coaster effect)
- More physiologic insulin delivery: basal/bolus
- Extended meal delivery/dual wave
- No injections in public
Insulin therapy using the PUMP

- **Cons**
  - It is not perfect
  - Visibility
  - Always being attached
  - If disconnection or no infusion - KETONE production in less than four hours
  - Greater cost than injections
  - Risk of infection at the injection sites
  - Increased monitoring
  - Allergies to tape, skin, prep products
  - Excessive sweating causing lack of adhesion
  - Pump runs dry
  - Ignoring Alarms of hyper/hypoglycemia
  - School issues ---- Who will bolus / trouble shoot
Candidates must be able to:

- Stay motivated to improve blood glucose control
- Cooperate and be responsible
- Self-monitor blood up to 6-8 times/day
- Count carbohydrates
- Give insulin based on blood glucose and food intake
- Understand risk factors for failure
- Make the most of financial resources
- Maintain Realistic goals for pumping insulin
“Red Flags” In Patient Selection

- Frequently misses office visits
- Has poor problem solving skills
- Mistrusts health care providers
- Does not have time for intensive diabetes management...competing life demands
- Will not monitor BG levels or keep records
What's Your Number?

Hgb A1c
- Required by all Insurances
- Relates to average blood glucose (mg/dl)

C-Peptide
- Required by some Insurances
  Must be less than 0.5
- Relates to how much insulin your pancreas is making
**Insulin Pump Management Record for Harrison Ford 15 yo Paradigm 512**

**Correction Bolus: Blood Sugar-150/30**  **Carbohydrate Bolus: 1 Unit(s) per 15 Grams Carb**

| Date  | 12 MN | 1 AM | 2 AM | 3 AM | 4 AM | 5 AM | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | 12 PM | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM |
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| Carb Bolus |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Correction Bolus |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Total Bolus** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Basal Rate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Other (See Key) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**KEY:** *Site Change  ^Set Change  SI Syringe Injection  E Exercise  KO Urine Ketones, Neg  K1 Urine Ketones, Trace or Small  K2 Uring Ketones, Mod or Large*
Correction Bolus: **Blood Sugar-150/30** Carbohydrate Bolus: 1 Unit(s) per 15 Grams Carb.

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**Key:**   *Site Change   ^Set Change   SI Syringe Injection   E Exercise   KO Urine Ketones, Neg   K1 Urine Ketones, Trace or Small   K2 Urine Ketones, Mod or Large   Temp basal set 0.35 uh
Since 1970's

Figure 1. Insulin pumps: a. Early design by Arnold Kadish, MD. b. Early portable pump. c. Modern pump.
Pumps Currently Available

- Animas: One-Touch Ping
- Medtronic Mini Med: Paradigm
- Omnipod
The Animas Insulin Pump
One Touch Ping
Medtronic Mini-med Paradiagm pump Revel
Omnipod

Tubeless

Insulin Management System
Changing Perspective: Today

Real time continuous glucose monitoring systems

Dexcom

Medtronic
Insulin Pump Therapy Contract

To do well with insulin pump therapy you must:

- Understand blood sugar goals
- Test blood sugar frequently
- Know carbohydrate counting
- Get regular physical activity
- Keep good insulin pump management records
- Adjust insulin doses with your Endocrinology Team
- Follow up with Insulin Pump therapy team as scheduled
- Send insulin pump management records routinely (see handout)
- Understand that pump therapy may be stopped by MD as clinically indicated or if above is not followed
SO...What's Next?

1. Skill Survey Sheets reviewed: call if skill help is needed
2. Choose one or two Pumps
   Call Insulin Pump Office to finalize choice 205-638-9546.
3. Call Pump companies to order
4. Call Insulin Pump Office to schedule training when shipping date known.
How to contact us!

Office Phone
(205) 638-9546
Fax (205) 638-7005

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V. Joye Taylor, MS, RD, CPT, CDE

Certified Insulin Pump Trainers