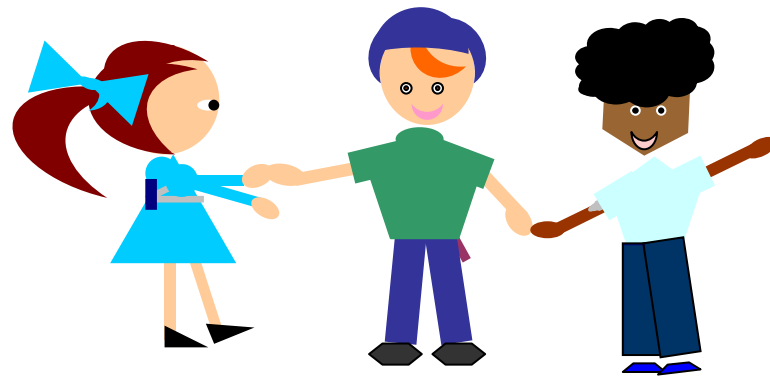


MY OWN BOOK ABOUT PUMPING

Written and illustrated by Sandra J. Hollenberg
(Malcolm's Grandma Sandy)
author of MY OWN TYPE 1 DIABETES BOOK



2008 Edition © Sandra J. Hollenberg
Additional copies available for free downloading at
www.grandmasandy.com

MY OWN BOOK ABOUT PUMPING is a very basic primer about insulin pump therapy. It will be useful to families considering such a step. It will also be helpful to children already on the regime; it is a source they can refer to and show their friends.

I am a grandmother, not a health care professional. If pump therapy interests you, visit the websites of the major pump manufacturers and discuss the options with your health care team and, of course, with the center of that team, your child.

The decision to 'pump insulin' is not to be taken lightly. It requires a major commitment from the primary care giver as well as from a supportive health care team. Certainly the child must be a willing participant and committed to wearing the pump constantly. As with all health care decisions the well being of the patient must be the prime consideration.

My grandson Malcolm began pump therapy the week he turned 4. Site changes were a challenge for years but his mother would remind Malcolm that he could always go back to having shots. That was an option he did not want!! I think that knowing the decision to pump was his choice made it easier for Malcolm to accept the less pleasant aspects. Now a teenager, Malcolm does his own site changes and accepts them as part of his everyday life.

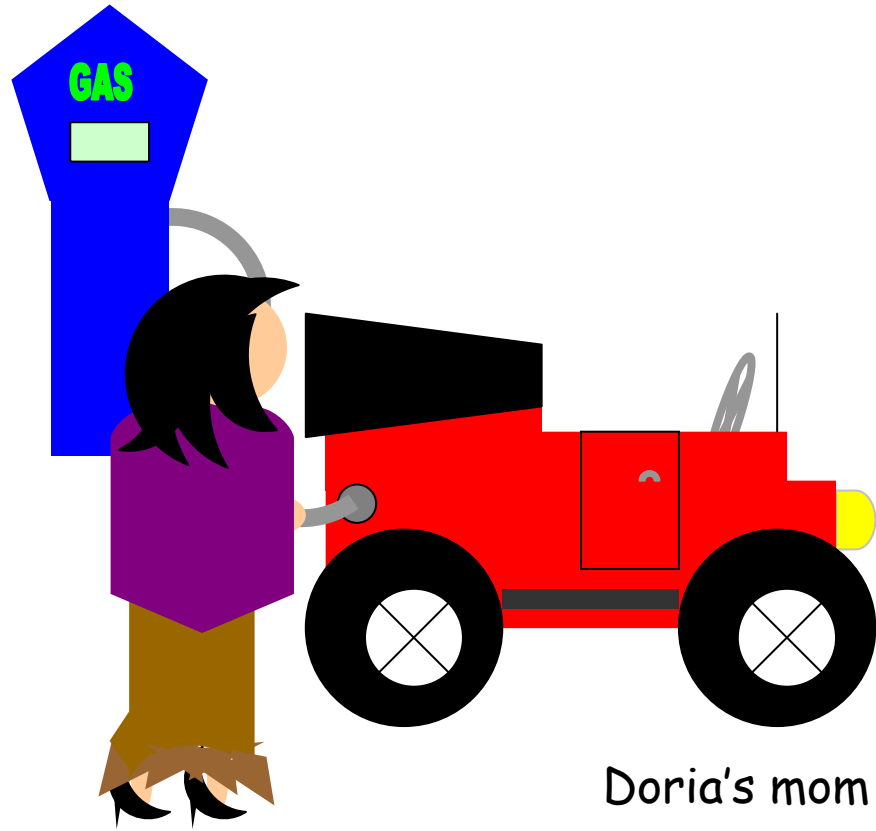
Pumping is not the only therapy for type 1 diabetes but it is the therapy Malcolm prefers. I prefer it too. I must admit I found giving shots daunting. With Malcolm on the pump I am comfortable spending long periods of time alone with him. (An added benefit to the family is that now I can look after Malcolm so my daughter can get away occasionally for much-needed vacations.)

Thanks to my inspiration, Malcolm's wonderful mother, my daughter Barbi Lazarow, and to my dear friend and editor, Dyane Lynch.

All the best,
Sandra J. Hollenberg
(Malcolm's Grandma Sandy)
www.grandmasandy.com

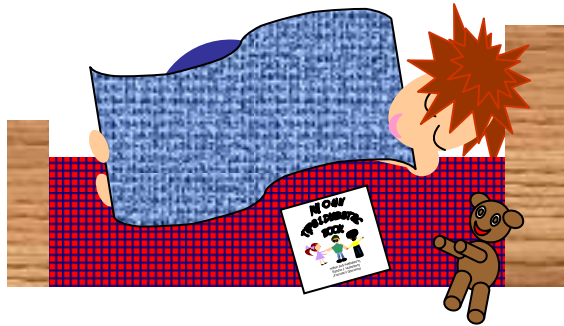
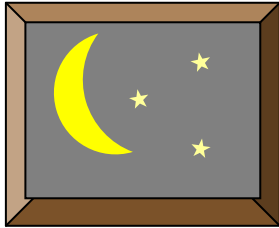
Jonathan is pumping.
Air is going into the balloons.





Doria's mom is pumping.
Gas is going into the car.

Adam and Tara are pumping.

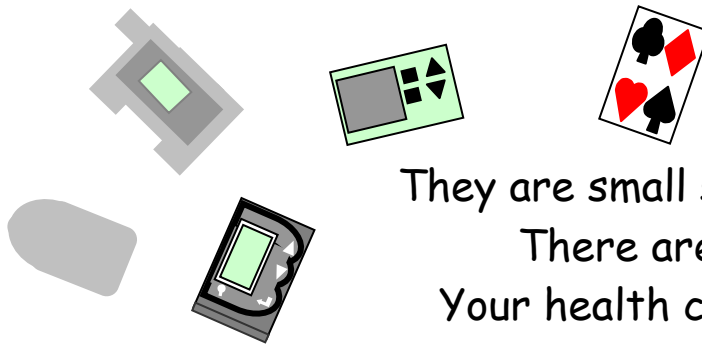
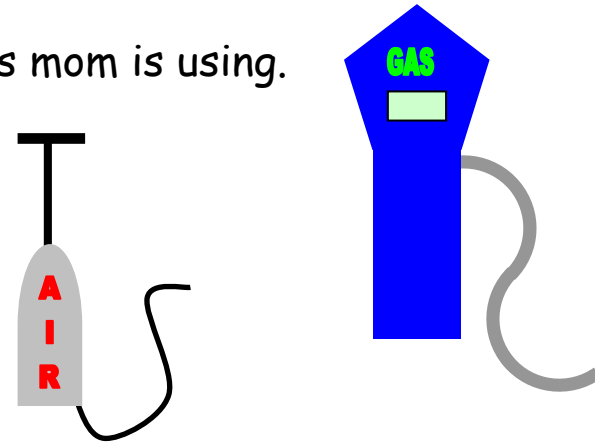


Glucose is going into their cells.

Tara and Adam are pumping insulin.
They have type 1 diabetes, just like you.

An insulin pump isn't like the pump Doria's mom is using.
That would be way too big.

It isn't like Jonathan's air pump
that is also too big.



Insulin pumps are small,
like a deck of cards.

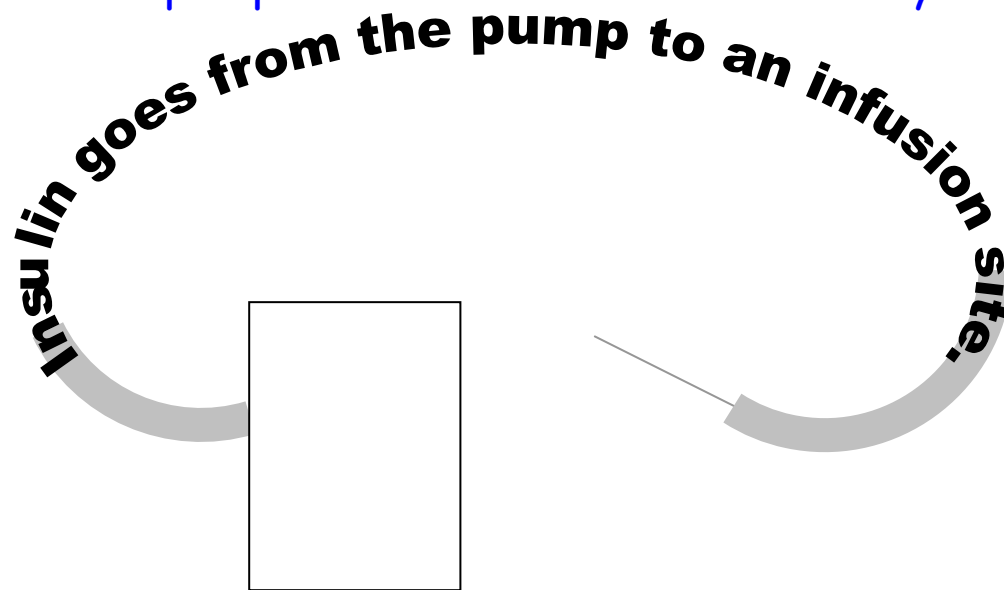
They are small so you can wear them all the time.

There are different kinds of insulin pumps.
Your health care team will help you choose one.

The insulin pumps are different but many things about using them are the same.

Those are the things this book will tell you about.

All pumps deliver insulin the same way.



Some pumps have a tube that connects to the infusion site.
Some pumps do not have a tube.

You can wear your pump in different places.

Pumps without a tube are worn directly on your skin.

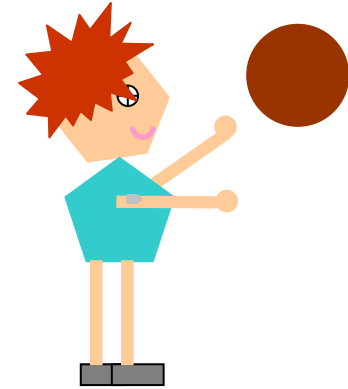
Jason wears his on his arm.

Pumps with tubes are carried on your clothing.

Tara wears hers in a special pocket.

She uses a harness for tennis.

Adam clips his pump on his pants.



You can have your infusion site in different places.

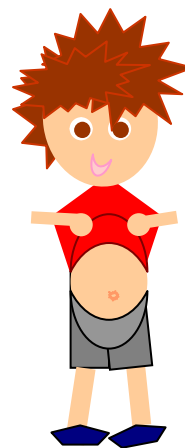
Tara has her infusion site high on her backside.

Adam likes his infusion site on his tummy.

Sometimes he has it on his arm.

You can also wear it on your thigh.

The infusion site must be changed every two or three days.



Special creams can be used to numb the skin.

Adam doesn't feel it
when the infusion site is changed.
Neither does Tara.

It doesn't hurt.
Still, some days Tara fusses.

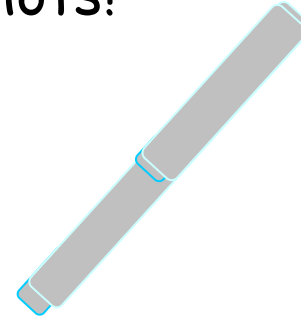
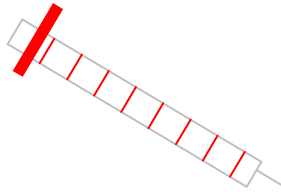
Her mother says,
"Think of something wonderful!"



Tara pretends she is dancing on clouds.

What does Adam think about changing his infusion site?

"It's a drag," he says,
"but it's better than shots!"



What about all those blood checks, Adam?
Every time before you eat.
Sometimes in the night when you are sleeping.
Ten checks a day or more.

What about that, Adam?

"It's still a lot better than shots!"

Tara has *CGM* (constant glucose monitoring) -
"It makes it a lot easier," she says.



Adam used to have his shots
before meals.

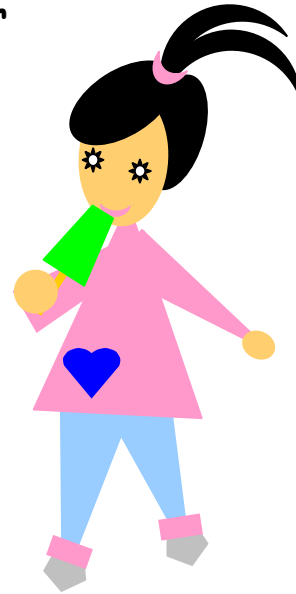
Then he *always* had to eat at
certain times.

Then he *sometimes* had to eat
when he wasn't hungry.

Now, Adam can eat whenever he wants - but

don't spoil dinner!

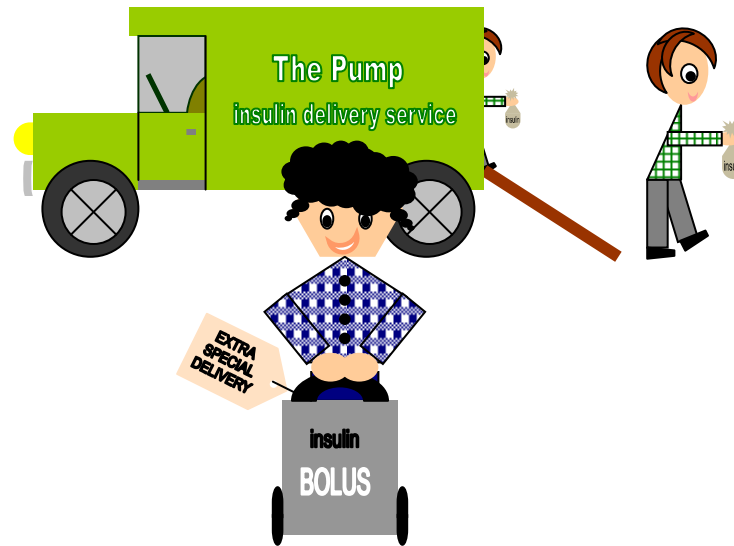
Tara used to have her
shots after she ate.



Every time she had
carbohydrates she
needed an insulin shot.

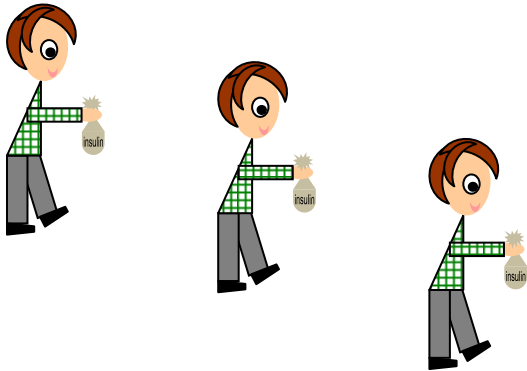
Tara still needs insulin after she eats carbohydrates.
But she doesn't get shots!

The pump
delivers the
insulin she needs.



The amount of insulin needed is programmed into the pump.
This insulin is called a '*bolus*'.

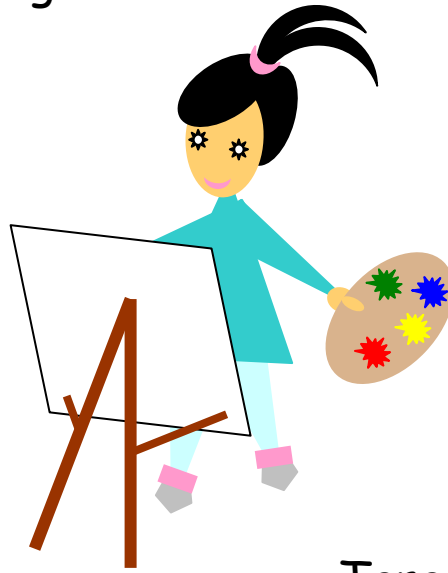
The **bolus** is *extra* insulin.



It is extra because the pump delivers insulin every few minutes.

This *every few minutes* insulin is called the '**basal rate**'.

The **basal rate** is balanced with your energy needs.
Your interests and activities affect your energy needs.
When your interests and activities change your energy needs change too.



Tara takes tennis after school now.
Next month she is switching to art.
Will she be using more or less energy in the afternoons?

In the mornings Adam sleeps late.
He hangs around in his pajamas watching TV.



Soon Adam will be starting kindergarten.
He will have to get up early and go to school.
Will he be using more or less energy in the mornings?

Your interests and activities affect your energy needs.
Your energy needs also change as you grow.

Your basal rate must be changed
when your energy needs change.

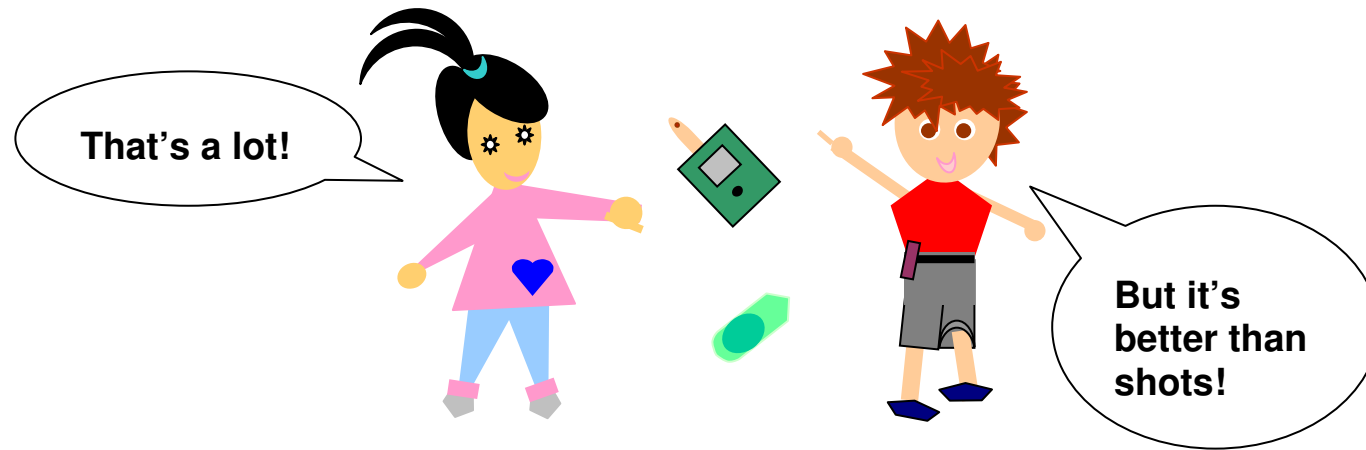
The basal rate changes will be programmed into the pump.

How will you know *when* to make changes?
How will you know *what* changes to make?

Your diabetes log or diary has that information.

REMEMBER:

every time your blood is checked - **an entry in the log!**



When do you check your blood?

When you wake up and when you go to bed.

Before and after you exercise.

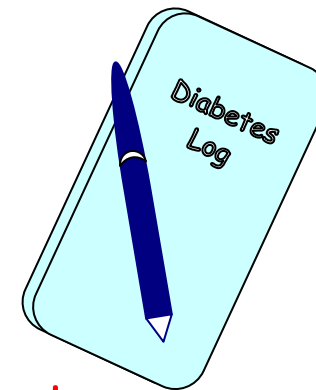
An hour or so after an insulin correction for 'highs'.

A half-hour or so after a carb correction for 'lows'.

Before meals and before carb snacks.

There is other information in your diabetes log.

- 1) The grams of carbohydrates you eat.
- 2) The insulin delivered for those carbs.
- 3) The carb correction for 'lows'.
- 4) The insulin correction for 'highs'.
- 5) Your exercise.



This information is important!

It shows how your body uses energy.

It helps calculate your ratio of insulin to carbohydrates.

It lets you know **when** to change the basal rate.
When the basal rate is off your log will show a pattern.
Highs and lows will *always* happen once in a while.
When they happen several days in a row at the same time,
that's a pattern.

The pattern will tell **how** the basal rate should be changed.



Do you need
more insulin?



Do you need
less insulin?

The pattern will tell if the bolus calculation should change.



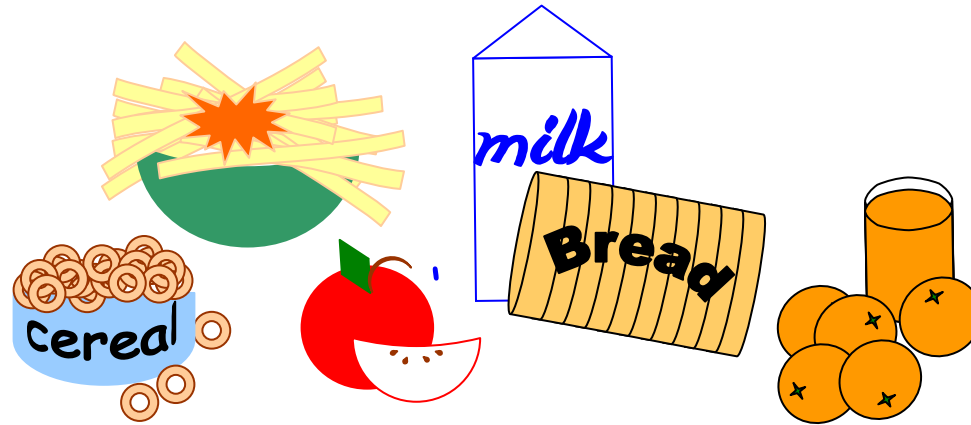
The Bolus Calculation

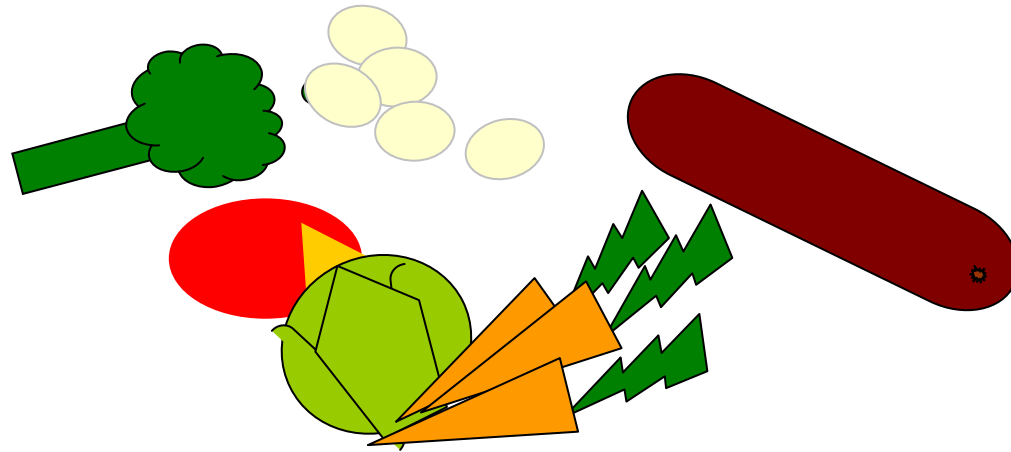
Units of insulin delivered
must balance out the
grams of carbohydrates

Another way to check your insulin use
is a *carb fast*.

The *carb fast* will show if
the basal rate is correct.

A carb fast means NO eating carbohydrates.





Eat lots of meat, eggs and cheese and
yummy veggies* instead.

*NOT starchy vegetables.
Do you know why?

Pumping insulin is a very big decision.

Think about it.

Talk about it.

Talk to your folks and your health care team.

Talk to other kids on the pump,
in person or on the 'net'.

www.KidsRPumping.com

www.childrenwithdiabetes.com

www.Insulin-Pumpers.org

Check out the websites of the major pump providers.

It is a very big decision.
Adam and Tara are glad they made it.



2008 Web sites

www.animascorp.com

www.cozmore.com

www.disetronic-usa.com

www.myomnipod.com

www.minimed.com