Meet Sylvia

- Sylvia is 33 years old and expecting her second child.
- She had gestational diabetes with her son who is now five years old.
- Three years ago Sylvia developed type 2 diabetes.
- Since then she has adopted healthy eating habits and walks for exercise as part of her daily routine.

When Sylvia was planning her second pregnancy she attended a preconception counselling session with her interprofessional team where she learned that she should:
- Have an A1C ≤ 7% prior to conception
- Supplement her diet with 5mg of folic acid at least 3 months preconception
- Discontinue any ACE, ARB or statin medication
- Switch from non insulin antihyperglycemic agents to insulin

What does the research say?

GAPP 2012
94% of patients have anxiety related to insulin use.

Valk 2011
Hypoglycemia is a limiting factor in insulin use in pregnancy.

Valk 2011
Insulin requirements increase in the second and third trimester.

Injection sites for pregnancy

With the growing abdomen and the stretching skin you may become concerned that the injection will touch the baby. However, when properly used, 4-6 mm needles can safely deliver insulin past the skin layer and into the fatty layer where it is absorbed best. The baby is safely encased in the uterus many layers beneath this fat. Although the legs, arms or buttocks are acceptable sites the abdomen is recommended due to its consistent rate of absorption, thickness of the fat layer underneath the skin and the ease of use.

The subcutaneous fat is thickest in the abdomen in women.

During pregnancy the abdominal fat increases and the fatty layer of the skin is not affected by the expanding uterus or the taut skin.

Suggestions for Sylvia

- Use shortest needle possible
- Use abdomen for most rapid and consistent absorption
- Use needles one time only
- Use insulin pens for ease of injection
- Avoid areas around the umbilicus and areas on the abdomen with taut skin
- Avoid stretch marks
- Rotate the injection sites with each injection at least 2cm away from the last.

If your health care team has suggested that you need to inject insulin during your pregnancy you will probably have some very important questions.

1. Will taking insulin hurt the baby?
   - having your blood glucose in target before and during your pregnancy is the most important factor for the health of your baby; when you have type 1 or type 2 diabetes before pregnancy good control is needed to prevent early development problems as the baby is forming
   - when you have gestational diabetes good control is needed to help prevent large size babies and complications for the baby at birth
   - insulin, in the prescribed dose, does not circulate in the baby’s blood
   - If your blood glucose stays high during your pregnancy it can cause low blood glucose for your baby at birth

2. Will the injection hurt the baby?
   - insulin should be delivered into the fat layer below the skin; in adults, skin is 1.9 to 2.4mm thick with the abdominal area having the thickest fat layer
   - when short needles (4 to 6mm) are used there is less risk of injecting into the muscle below the fat
   - the baby is growing many layers below the skin, in the uterus, which cannot be touched by 4-6mm insulin pen needles

3. Are the injections painful?
   - patients report that shorter, finer needles are more comfortable; right site and right injection technique is key

How should I give the insulin injection?

Use an insulin pen at a 90° angle to the skin and inject through the skin into the fatty layer.

During pregnancy if the skin is taut over the central part of the abdomen, choose the sides of the abdomen for injection sites.

Insulin requirements

Requirements during pregnancy:
- 1st trimester
- 2nd & 3rd trimester
- postpartum

Injection Tips

- Inject straight into the skin
- Rotate injection sites at least 2cm apart
- Avoid the area around the umbilicus
- Use a new needle for each injection


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