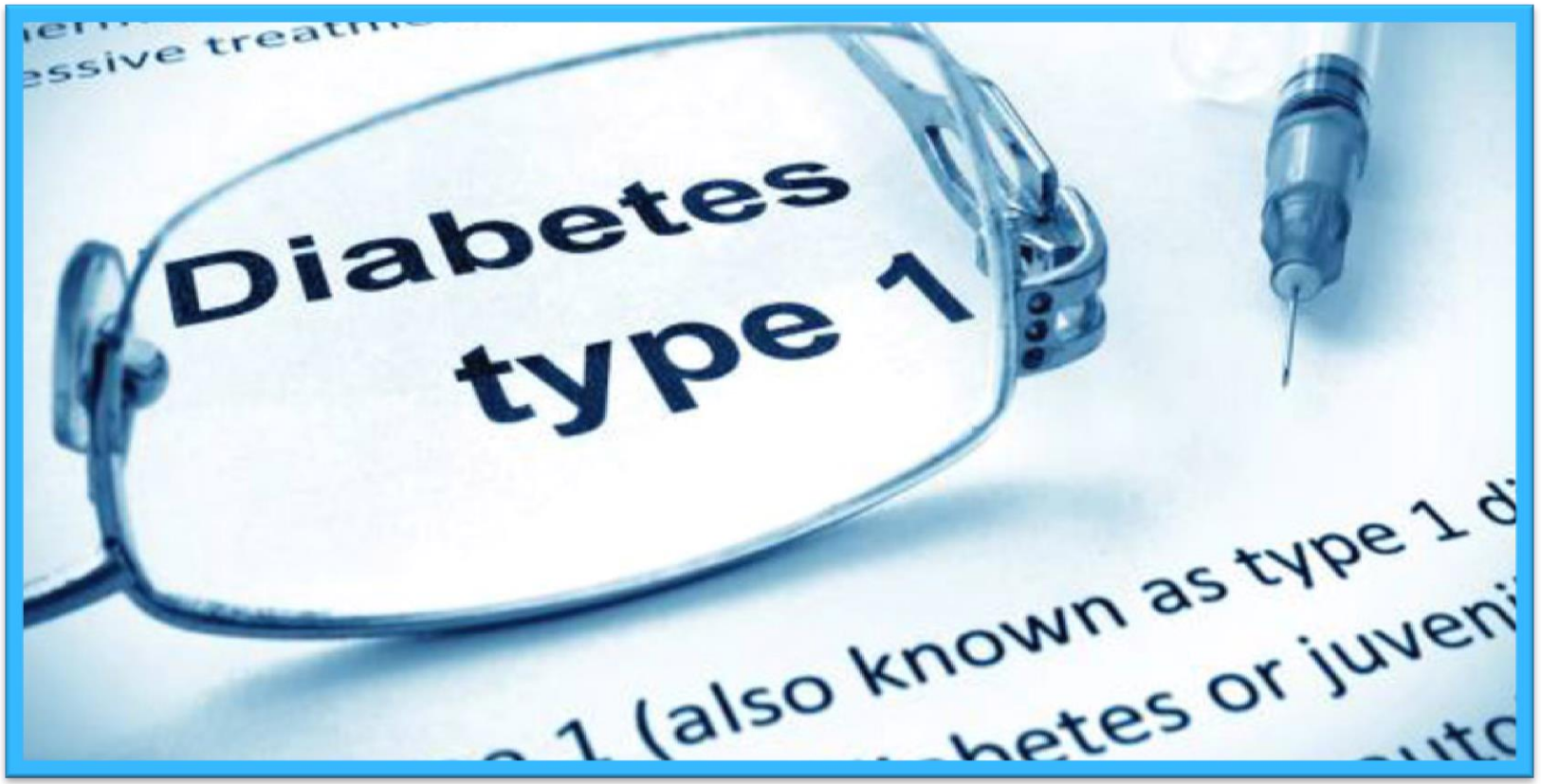
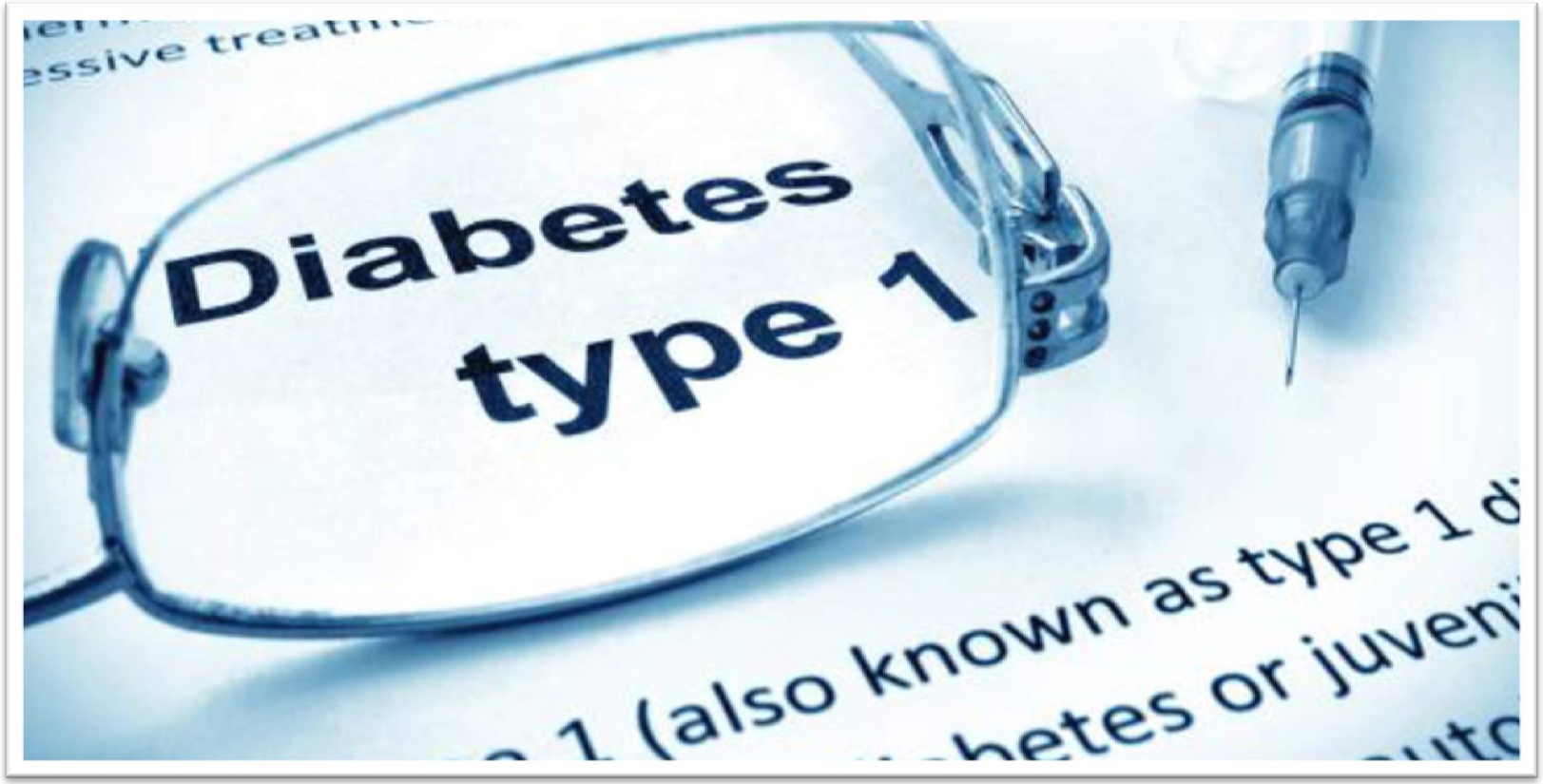


The webinar will begin shortly.

WaterlooWellington
DIABETES



CDE Exam Preparation

Wendy Graham RD CDE
Mentor/Best Practice Facilitator

March 2018

WaterlooWellington
DIABETES

Adults

Adolescents

Children

WaterlooWellington DIABETES

Objectives

- Review the etiology, signs and symptoms and prevalence of type 1 diabetes
- Discuss insulin requirements
- Review various types of insulin
- Discuss the management of exercise
- Review the driving guidelines for diabetes
- Review hypoglycemia
- Discuss the challenges of treatment of type 1 diabetes in children and adolescents that differ from adults

Type 1

Autoimmune disorder

Genetic predisposition

+

Environmental trigger

Causing destruction of β-cells

- No insulin secretion
- Require exogenous insulin

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Type 1

- Onset
  - Rapid
  - Symptomatic
    - Sudden Weight loss
    - Polydipsia
    - Polyuria
    - Polyphagia
    - Blurred vison
- Young and Lean
- Ketosis prone

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Type 1 Prediagnosis

Stage 1:

- Presence of two or more islet antibodies

Stage 2:

- Presence of β-cell autoimmunity
- Dysglycemia is presymptomatic

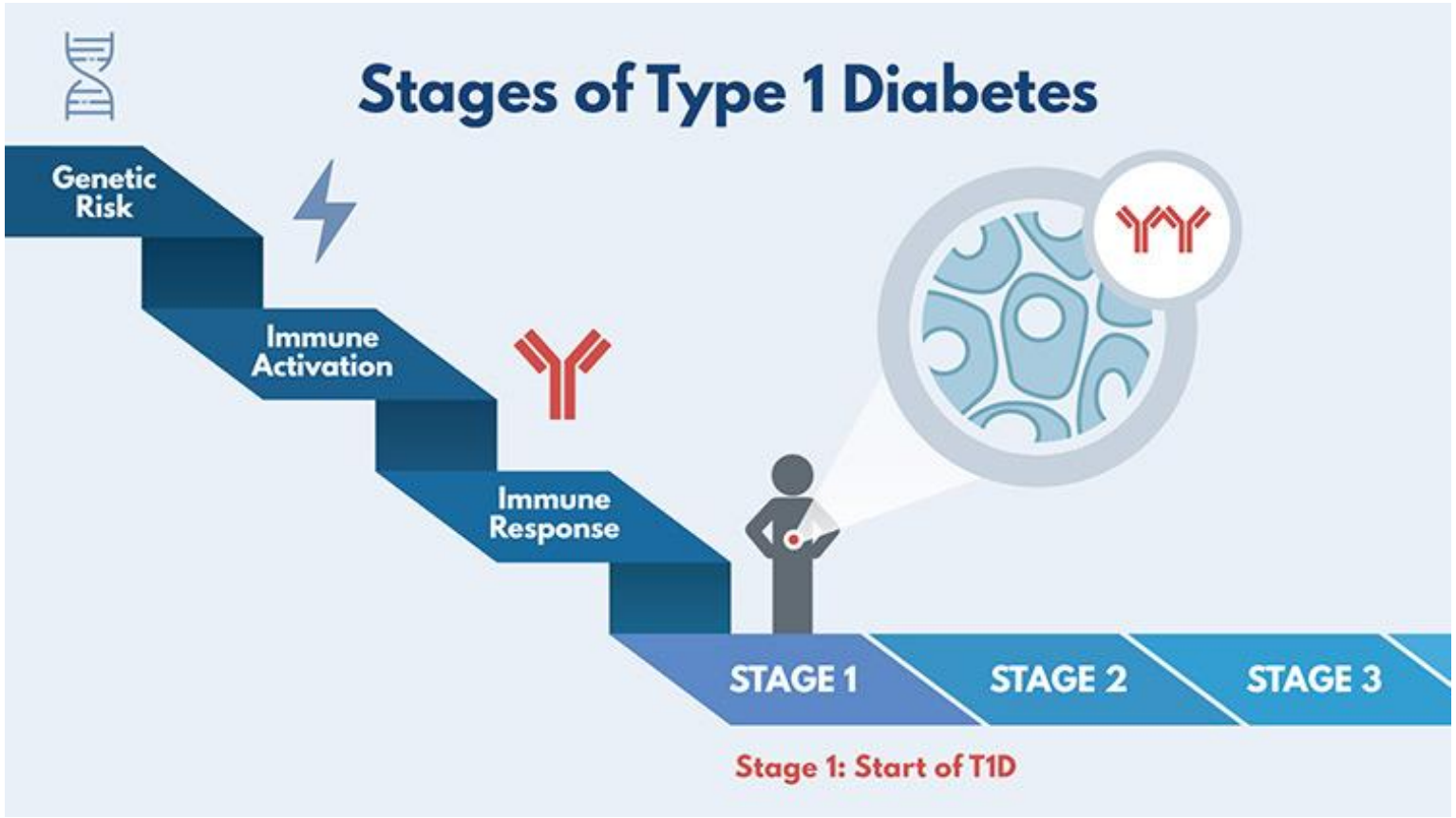
Stage 3

- Onset of the symptomatic disease
- Only 10% of β-cell remain

Insel R et al. Staging Presymptomatic Type 1 Diabetes: A scientific Statement of JDRF, The Endocrine Society and the American Diabetes Association. Diabetes Care 2015;38:1964-1974.

WaterlooWellington DIABETES

Type 1



WaterlooWellington DIABETES

Prevalence

2016 prevalence of diabetes was 9.3%

Diabetes

Type 1

- 10% of diabetes
- 25% of Type 1 are diagnosed as adults
- Parents, children and siblings of a person with type 1 have a **10 fold greater risk of developing diabetes**

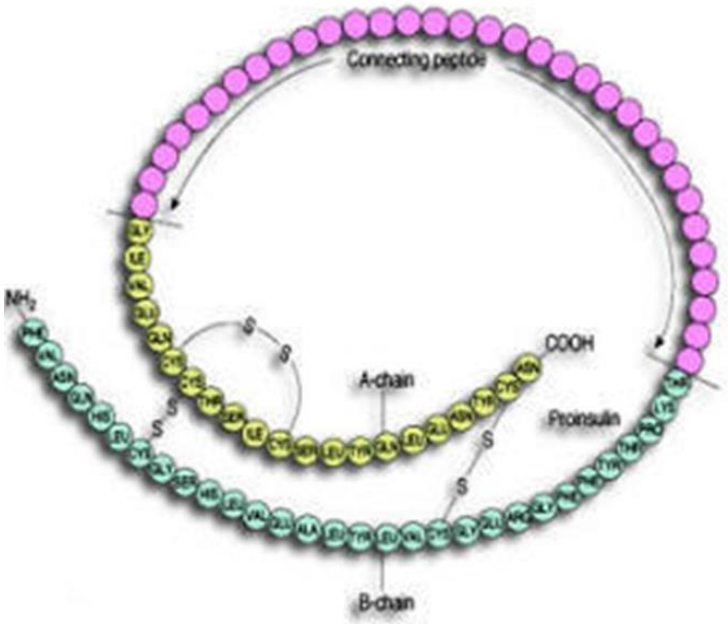
Type 2

- 90 % of diabetes
- 10 - 20 % may be misdiagnosed LADA

Diabetes

Type 1

- GAD (glutamic acid decarboxylase)
- Ketones
- C-peptide



Proinsulin structure

DIABETES

LADA- Latent autoimmune diabetes in adults

- Autoimmune
- Presence of antibodies
  - GAD 65(glutamic acid decarboxylase)
- Diagnosis is difficult
- Slow destruction of β-cell
- Older, lean
- Often started on oral agents
- Don’t have high TG or low HDL
- Higher rate in underdeveloped countries

TYPE 1 TREATMENT

Blood Glucose control is always a balance between

optimal blood glucose control

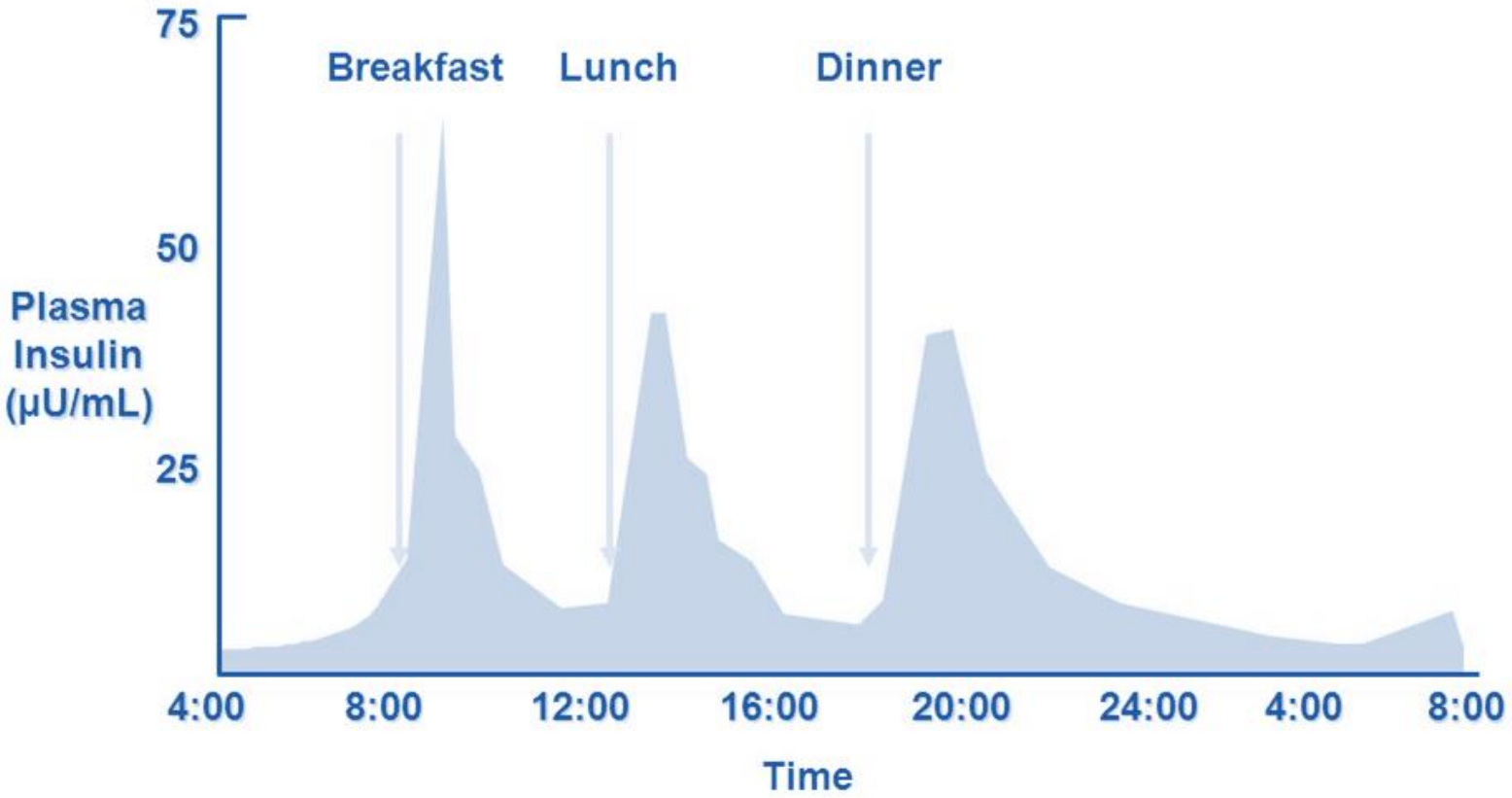
and the

risk of Hypoglycemia

Insulin requirements- Adults

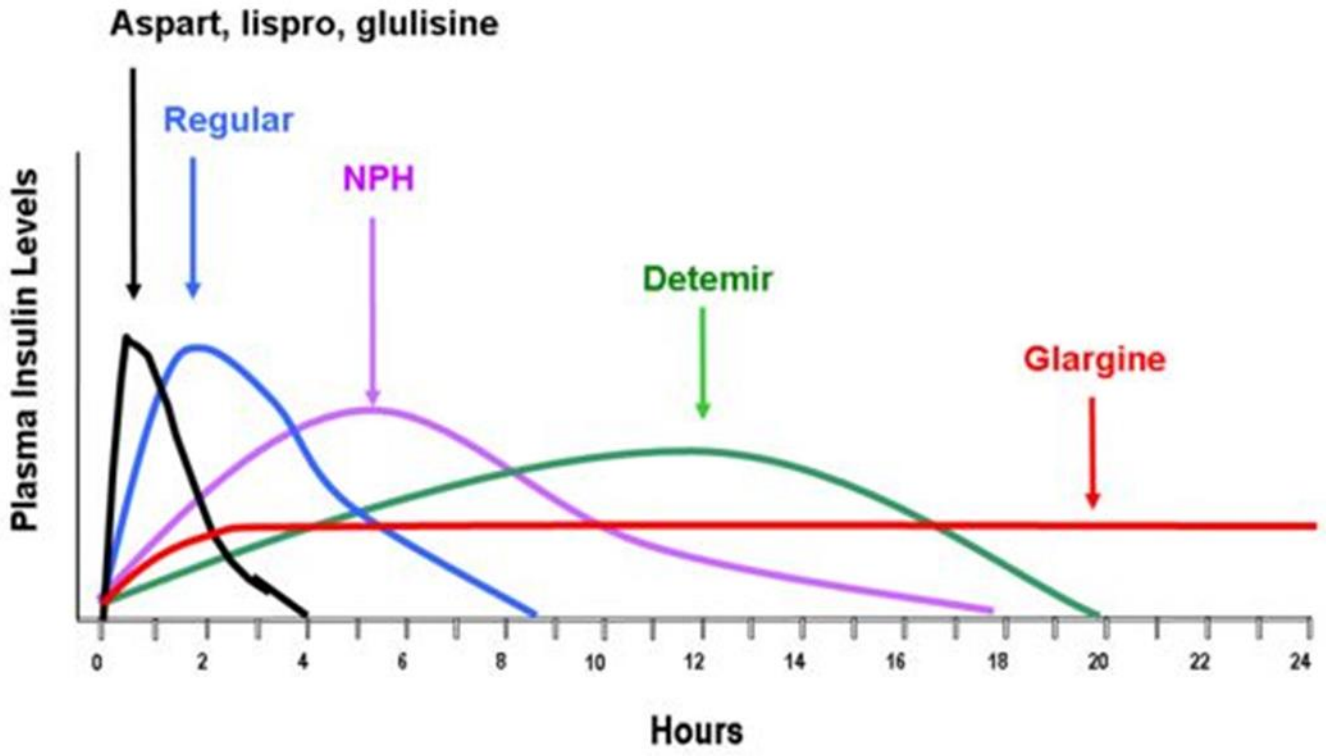
0.5 units/kg body weight

Physiologic Insulin Secretion

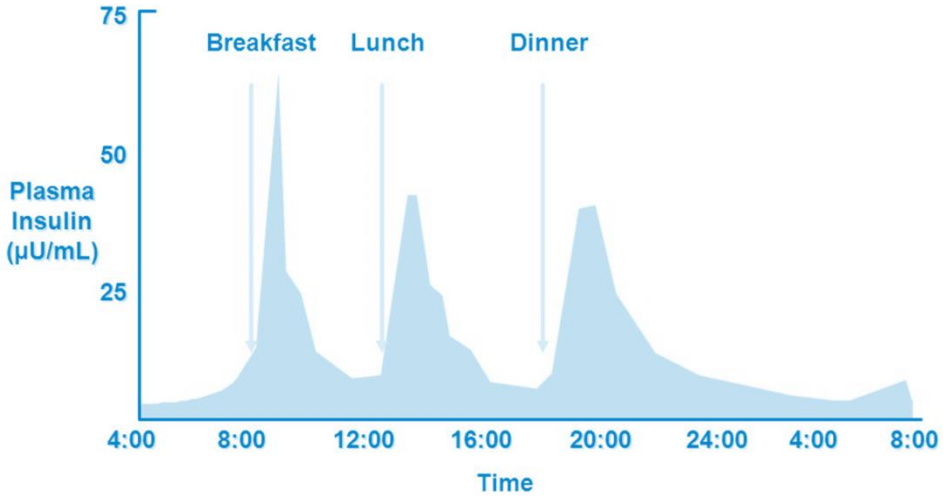


Adapted from White JR, Campbell RK, Hirsch I. Postgraduate Medicine. June 2003;113(6):30-36.

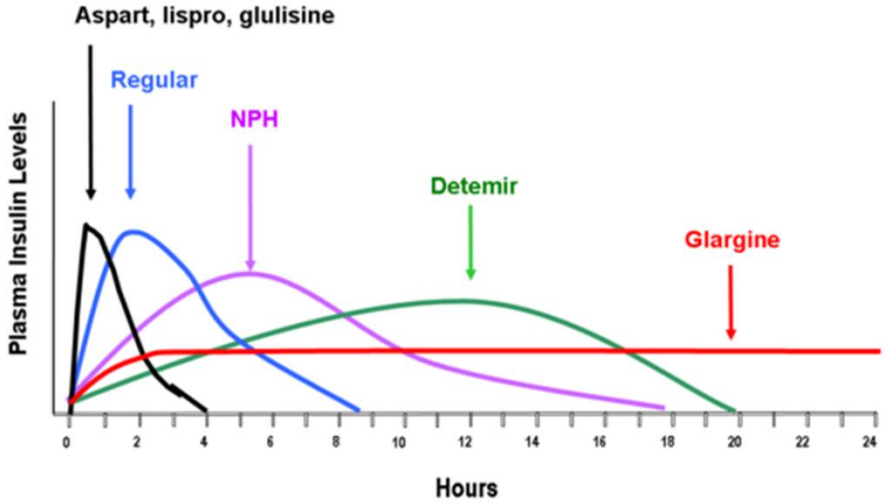
TYPES OF INSULIN



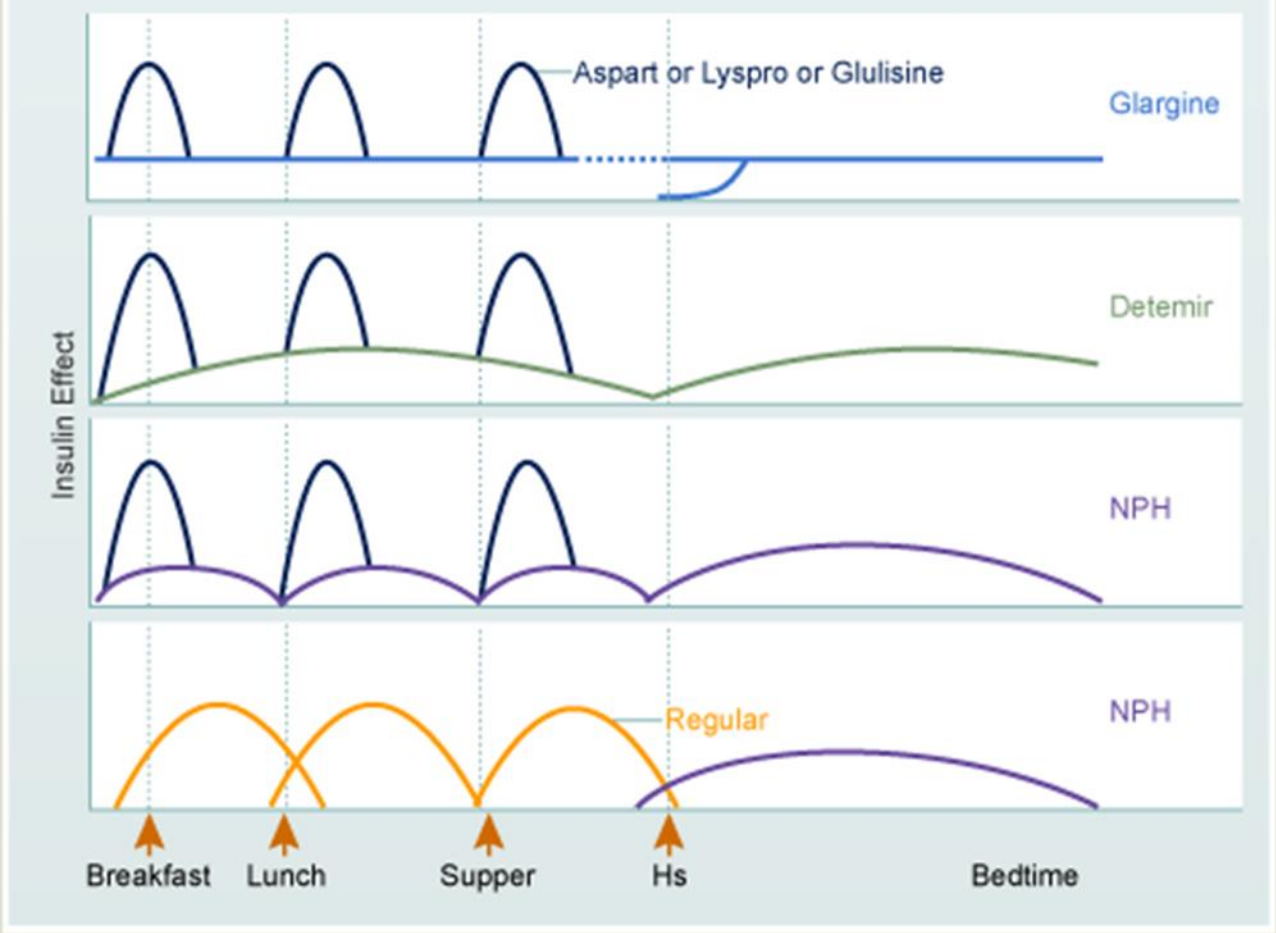
Physiologic versus Insulin injections



Adapted from White JR, Campbell RK, Hirsch I. Postgraduate Medicine. June 2003;113(6):30-36.



BASAL / BOLUS 40/60 OR 50/50



BASAL INSULINS

Summary of Canadian Insulin Products 2018

Company →	Novo Nordisk		Lilly		sanofi		
↓Category	Generic	Brand	Generic	Brand	Generic	Brand	
Intermediate Onset 1-3 h Duration up to 18 h *Cloudy solution*	NPH	**Novolin ge NPH** 10 mL vial 3 mL cartridge Expiry after opening: **30 days**	NPH	**Humulin N** 10 mL vial 3 mL cartridge Prefilled Pen (KwikPen) Expiry after opening: **28 days**			
Extended Long Acting Onset 90 min Duration 24 h *Clear solution*	detemir	**Levemir** 3 mL cartridge Prefilled Pen(FlexTouch) Expiry after opening: **42 days**	glargine biosimilar	**Basaglar** 3 mL cartridge Prefilled Pen (Kwik pen) Expiry after opening: **28 days**	glargine	**Lantus** 100u/mL 10 mL vial 3mL cartridge Prefilled Pen (SoloStar) Expiry after opening: **28 days**	**Toujeo** 300u/mL ***for adults only** Once daily admin Prefilled Pen (SoloStar) Expiry after opening: **42 days**
Ultra Long Acting Onset 1 h Duration 42 h *Clear solution*	degludec	**Tresiba** 100u/mL or 200u/mL Once daily admin Prefilled Pen (FlexTouch) Expiry after opening: **56 days**					

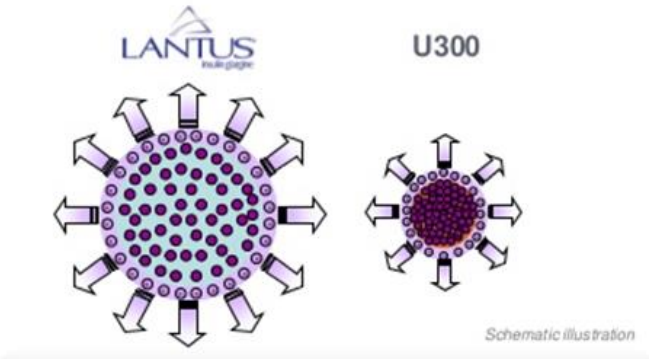
Prepared by: B. Young, Quality Management, March 2003. Reviewed by M. Gingras, Pharmacy, D. Hollahan, DEC, Credit Valley Hospital Rev 2007.
Revised by: D. Hollahan, W. Graham Waterloo Wellington Diabetes2015, April 2017,Nov 2017, Jan 2018

Basal Insulins

- **Concentrated**

  Toujeo

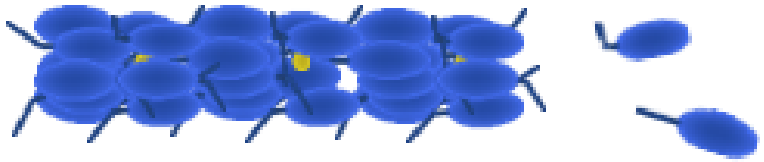
*Do not draw into a syringe!



Basal Insulin

Ultra Long Acting

- Tresiba
  100 u/ml
  200 u/ml*



- **Duration: 42 hours**
- **Missed dose can be taken up to 8 hours later**

*Do not draw into a syringe!

BOLUS INSULIN

Summary of Canadian Insulin Products 2018						
Company →	Novo Nordisk		Lilly		sanofi	
↓Category	Generic	Brand	Generic	Brand	Generic	Brand
Fast Acting Onset 4-10 min Duration 3-5 h *Clear solution*	aspart	**Fiasp** 10 mL vial 3 mL cartridge Prefilled Pen (FlexTouch) Expiry after opening: **28 days**				
Rapid Onset 10-15 min Duration 4-5 h *Clear solution*	aspart	**Novorapid** 10 mL vial 3 mL cartridge Prefilled Pen (FlexTouch) Expiry after opening: **28 days**	lispro	**Humalog** **100u/ml** 10 mL vial 3 mL cartridge Prefilled pen (KwikPen) **200 u/ml** Prefilled pen (KwikPen) Expiry after opening: **28 days**	glulisine	**Apidra** 10 mL vial 3 mL cartridge Prefilled pen (Solostar) Expiry after opening: **28 days**
Short Onset 30-60min Duration 5-8 h *Clear solution*	regular	**Novolin ge Toronto** 10 mL vial 3 mL cartridge Expiry after opening: **30 days**	regular	**Humulin R** 100u/ml 10 mL vial 3 mL cartridge Prefilled Pen (KwikPen) Expiry after opening: **28 days** **Entuzity** 500u/ml 3 ml cartridge Prefilled Pen (KwikPen) Expiry after opening: **28 days**		

Prepared by: B. Young, Quality Management, March 2003. Reviewed by M. Gingras, Pharmacy, D. Hollahan, DEC, Credit Valley Hospital Rev 2007.
Revised by: D. Hollahan, W. Graham Waterloo Wellington Diabetes2015, April 2017,Nov 2017, Jan 2018

Bolus Insulins

Fast Acting

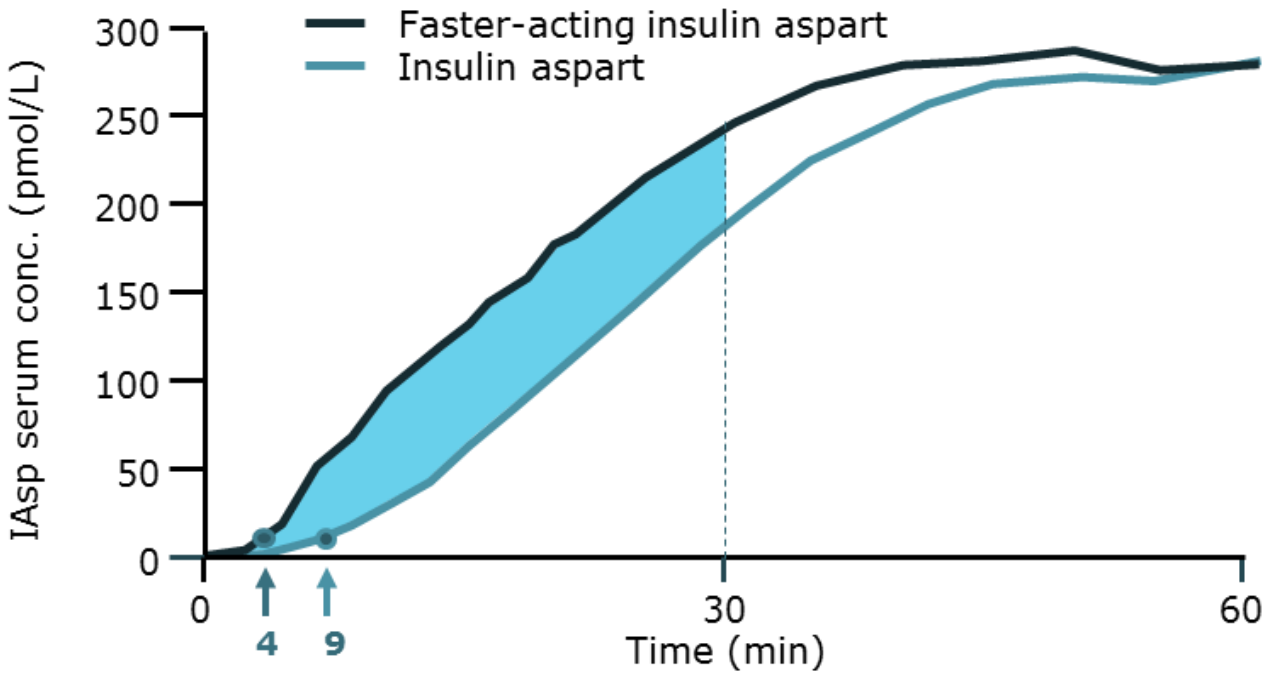
- Fiasp

- 50% of insulin in first 30 min
- Improved post prandial BG
- Can be taken 20 min after a meal

Bolus Insulin

Fast Acting

- Fiasp



Bolus Insulin

Short Acting Concentrated

- Entuzity
  - Humalin R 500u/ml

*Do not draw into a syringe!

Indication is:

- >200 units/day
- A1c > 8 %
- BMI > 40
- Dial 5 unit
- Increase by %

FIT : Recommendations for Best Practice in Injection Technique

- Injection technique
- Use of devices
- Factors Affecting Absorption
- Injection Sites
- Lipohypertrophy
- Special Populations

www.FIT4diabetes.com/canada-english

INSULIN:CARBOHYDRATE RATIO

$$\frac{\text{\# grams carbohydrate}}{\text{\# units of rapid insulin}} = \text{1 unit of insulin per}\_\_\_\_\text{ gm CHO}$$

John eats 2 sandwiches and a large apple every day for lunch.

Carbohydrate: bread 4 x 15= 60, apple 20, total =80 grams

He takes 10 units of insulin

80/10= 8

His ratio is 1 unit insulin to cover 8 grams of carbohydrate

INSULIN:CARBOHYDRATE RATIO

$$\frac{\text{\# grams carbohydrate}}{\text{\# units of rapid insulin}} = \text{1 unit of insulin per}\_\_\_\_\text{ gm CHO}$$

Sandra has a salad, chicken and a smoothie for lunch.

Carbohydrate: smoothie= 75 grams

She takes 5 units of insulin

75/5= 15

Her ratio is 1 unit insulin to cover 15 grams of carbohydrate

USING THE RATIOS

Maureen's ratio is 1:8 at breakfast

Her meal is 375 ml of rice krispies, 250 ml milk, 125 ml raspberries (38 + 12 + 8).

How much insulin would she need?

58/8= 7. 25

USING THE RATIOS

Aziz uses 1:5 ratio at dinner.

His dinner consists of 2 beef kabobs with peppers, salad of tomatoes and cucumbers, 30 ml hummus and 2 pita bread.

Carbohydrate 4 + 2 x 30= 64

How much insulin would he need?

64/5= 12.8

He would take 13 units of insulin

INSULIN SENSITIVITY OR CORRECTION FACTOR

- **The amount a person's blood glucose will drop (mmol/L) for each unit of insulin.**
- "100 Rule"
- 100 divided by Total daily dose of insulin

INSULIN SENSITIVITY OR CORRECTION FACTOR

Francine takes 11 units of basal insulin and bolus insulin (7 + 3 + 4)

TDD = 25

Calculate the ISF 100/25= 4

I unit (rapid insulin) will ↓blood glucose 4mmol/L

USING ISF

Present blood glucose – target blood glucose= correction

Sam's blood glucose is 14 mmol/L
His target is 6 mmol/L
14-6=8
He needs to correct 8mmol/L

His ISF is 1:2
8/2= 4
He would take 4 extra units of rapid insulin as a correction

Kathy

- Basal bolus with Lantus and Apidra
- Ratio is 1:10
- How much insulin would she need for this meal?

- 2 slices WW toast
- 1 orange
- 175 ml artificially sweetened yogurt
- 1 egg
- Coffee, black

a) 4 units
b) 10 units
c) 6 units
d) 3 units

Kathy

- Basal bolus with Lantus and Apidra
- Ratio is 1:10
- How much insulin would she need for this meal?

- 2 slices WW toast
- 1 orange
- 175 ml artificially sweetened yogurt
- 1 egg
- Coffee, black

c) 6 units

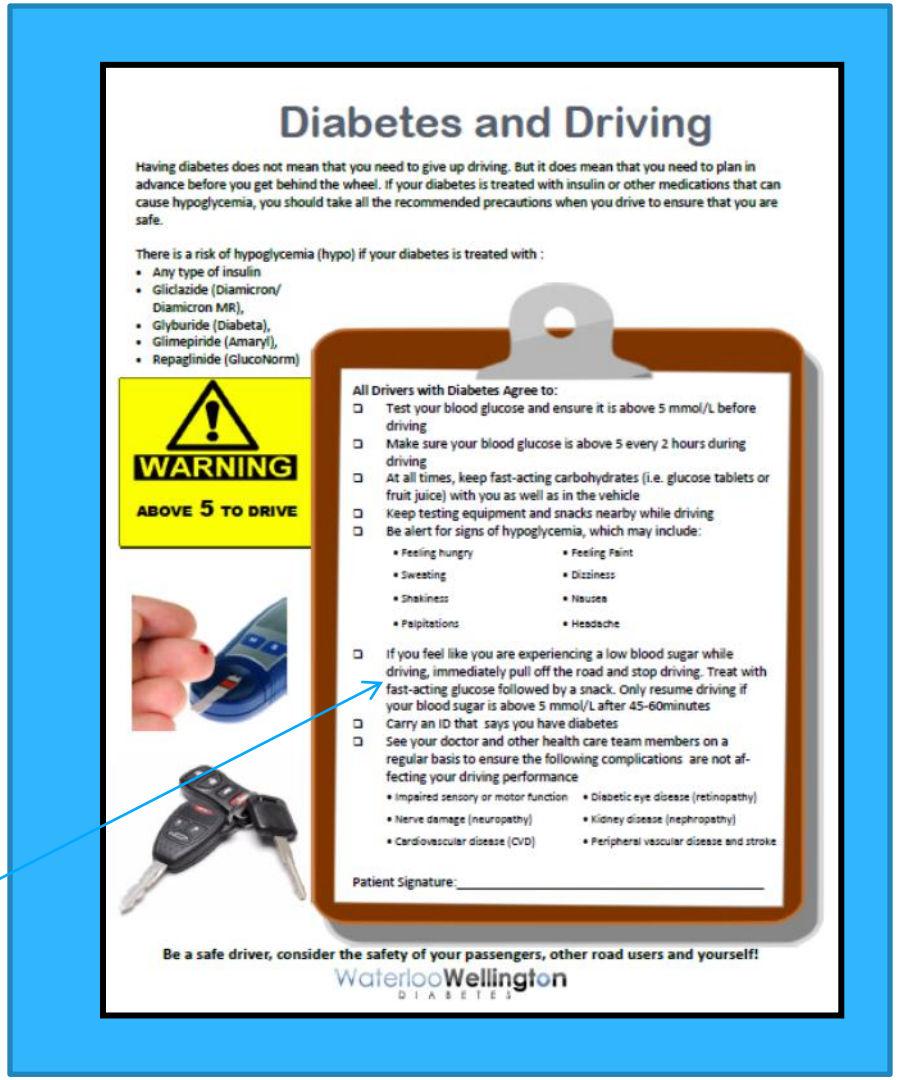
Kathy

- Target is 7 mmol/L
- Present blood glucose 11 mmol/L
- ISF: 1 unit to decrease 2 mmol/L

How much extra insulin would Kathy require?
Blood glucose – target
11-7= 4
4 divided by ISF of 2
Kathy would add 2 extra units of insulin

DRIVING

After a low wait
45 minutes
and
ensure blood glucose
is above 5



Diabetes and Driving

Having diabetes does not mean that you need to give up driving. But it does mean that you need to plan in advance before you get behind the wheel. If your diabetes is treated with insulin or other medications that can cause hypoglycemia, you should take all the recommended precautions when you drive to ensure that you are safe.

There is a risk of hypoglycemia (hypo) if your diabetes is treated with :

- Any type of insulin
- Gliclazide (Diamicron/ Diamicron MR),
- Glyburide (Diabeta),
- Glimepiride (Amaryl),
- Repaglinide (GlucoNorm)

WARNING
ABOVE 5 TO DRIVE

All Drivers with Diabetes Agree to:

- ❑ Test your blood glucose and ensure it is above 5 mmol/L before driving
- ❑ Make sure your blood glucose is above 5 every 2 hours during driving
- ❑ At all times, keep fast-acting carbohydrates (i.e. glucose tablets or fruit juice) with you as well as in the vehicle
- ❑ Keep testing equipment and snacks nearby while driving
- ❑ Be alert for signs of hypoglycemia, which may include:
  - Feeling hungry
  - Feeling Faint
  - Sweating
  - Dizziness
  - Shakiness
  - Nausea
  - Palpitations
  - Headache
- ❑ If you feel like you are experiencing a low blood sugar while driving, immediately pull off the road and stop driving. Treat with fast-acting glucose followed by a snack. Only resume driving if your blood sugar is above 5 mmol/L after 45-60minutes
- ❑ Carry an ID that says you have diabetes
- ❑ See your doctor and other health care team members on a regular basis to ensure the following complications are not affecting your driving performance
  - Impaired sensory or motor function
  - Diabetic eye disease (retinopathy)
  - Nerve damage (neuropathy)
  - Kidney disease (nephropathy)
  - Cardiovascular disease (CVD)
  - Peripheral vascular disease and stroke

Patient Signature:_____

Be a safe driver, consider the safety of your passengers, other road users and yourself!

WaterlooWellington DIABETES

Compensation for Physical Activity

Exercise requires:

- Add additional food
- Decrease Insulin
- Both

Compensation for Physical Activity

	Insulin	Carbohydrate
Light exercise	Reduce bolus by 10%	Add 10 grams before activity (May not be needed)
Moderate Exercise	Reduce Bolus by 20%	Add 15-30 grams before exercise
Vigorous Activity	Reduce Bolus by 30-50%	Add 30-60 before or after exercise

Compensation for Physical Activity

Also consider:

- Timing of exercise compared to meal
- Blood glucose before starting exercise
- Weight goal: maintenance or loss
- Do not exercise if blood glucose is above 16.7 mmol/L

Compensation for Physical Activity

Things to consider to prevent Hypoglycemia
Injection site- avoid working muscles
Timing of exercise versus insulin action
Food Intake
Alcohol

Hypoglycemia can occur up to 24 hours after an activity

Hypoglycemia

Definition

- the development of autonomic or neuroglycopenic symptoms
- a low plasma glucose level (<4.0 mmol/L for patients treated with insulin or an insulin secretagogue); and
- symptoms responding to the administration of carbohydrate. The severity of hypoglycemia is defined by clinical manifestations

Risk Factors for Severe Hypoglycemia

- Prior episode of severe hypoglycemia
- Current low A1C (<6.0%)
- Hypoglycemia unawareness
- Long duration of insulin therapy
- Autonomic neuropathy
- Low economic status
- Food insecurity
- Low health literacy
- Cognitive impairment
- Adolescence

2013 Clinical Practice Guidelines

Risk factors for Severe Hypoglycemia

- Prior episode of severe hypoglycemia
- Current low A1C (<6.0%)
- Hypoglycemia unawareness
- Long duration of insulin therapy
- Autonomic neuropathy
- Low economic status
- Food insecurity
- Low health literacy
- Cognitive impairment
- Adolescence

Hypoglycemia

Severity of hypoglycemia

- Mild: Autonomic symptoms are present. The individual is able to self-treat.
- Moderate: Autonomic and neuroglycopenic symptoms are present. The individual is able to self-treat.
- Severe: Individual requires assistance of another person.
- Unconsciousness may occur. PG is typically <2.8 mmol/L.

Hypoglycemia Symptoms

Neurogenic (autonomic)

- Trembling
- Palpitations
- Sweating
- Anxiety
- Hunger
- Nausea
- Tingling

Neuroglycopenic

- Difficulty concentrating
- Confusion
- Weakness
- Drowsiness
- Vision changes
- Difficulty speaking
- Headache
- Dizziness

Hypoglycemia

Teach glucagon to family members

Carry glucagon when traveling

Treatment for Hypoglycemia

- 15 grams of carbohydrate

Sick Day Management

- Illness can result in elevated blood glucose requiring more insulin
- NEVER omit insulin even if vomiting
- Untreated hyperglycemia can result in DKA

SICK DAY MANAGEMENT

Sick Day Guidelines for Insulin users

S	Sugar	Check every 2-4 hours
I	Insulin	**Continue to take it!**
C	Carbohydrate	Take some every 1-2 hours
K	Ketones	Test if your blood glucose is above 16

Illnesses like a cold, flu or sore throat can cause your blood sugar to rise. It is important to continue to monitor your blood sugar levels, eat and/or drink, and take insulin.
Insulin often needs to be increased during an illness.

Always take your _____
(long acting insulin)
Take your _____
(rapid insulin)
If you are able to eat/drink.
Use the chart on the next page to add extra insulin.

Call your Health Care provider if you:

- Vomit more than twice in 12 hours
- Have severe stomach pain
- Have rapid breathing
- Have a rapid heart beat
- Have fruity smelling breath (ketones)
- Have difficulty staying awake

Often when people are sick they prefer to nibble or sip fluids during the day. Be sure to include items with carbohydrate. Use the sample meals below as a guide. Add sugar-free fluids to prevent dehydration.

Breakfast: 1/2 cup apple juice and 8 crackers (*Carbohydrate 30 grams*)
+ water or sugar free beverages
Morning snack: 4 melba toast or 3/4 cup of gingerale (*Carbohydrate 15 grams*)
+ sugar free beverages
Lunch: 3 arrowroot cookies and 1/2 cup regular jello (*Carbohydrate 30grams*)
+ water or sugar free beverages
Afternoon snack: 1 ready-to-serve pudding (*Carbohydrate 25 grams*)
+ sugar free beverages
Evening meal: 1/2 cup mashed potatoes and 1/2 cup gingerale (*Carbohydrate 30 grams*)
+ water or sugar free beverages
Evening snack: 1 popsicle (2 sticks) (*Carbohydrate 20 grams*)

September 2015

WaterlooWellington DIABETES

Clear Fluids

For People with Diabetes

"Clear Fluids" means you can see through them and there are no particles or pulp.

Carbohydrates need to be consumed anytime you are using clear fluids, to provide glucose for energy. You will need to continue with your medication and insulin to control blood sugars. In addition to carbohydrate containing beverages you will need sugar free fluids to prevent dehydration.

CAUTION: Red and purple beverages are to be avoided when preparing for a colonoscopy.

Here is a sample menu to use.

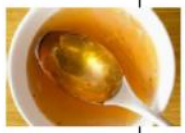
Breakfast: 2/3 cup apple juice and 1/2 cup gingerale (Carbohydrate 30 grams)
Morning snack: 1 cup powerade or 3/4 cup of gingerale (Carbohydrate 15 grams)
Lunch: 1/2 cup white grape juice and 1/4 cup regular jello (Carbohydrate 30grams)
Afternoon snack: 1 cup regular gingerale (Carbohydrate 15 grams)
Evening meal: ½ cup regular jello and 3/4 cup Gatorade (Carbohydrate 30 grams)
Evening snack: ½ cup regular jello and 1 popsicle (Carbohydrate 20 grams)

Carbohydrate Beverages
Each contain 10 grams of carbohydrate and can be substituted in the menu:

Apple Juice: 1/3 cup
Cranberry Juice (white): 1/4 cup
Cranberry Cocktail (white): 1/3 cup
Cranberry Cocktail Low Calorie : 1 cup
Gatorade: 3/4 cup
Grape Juice (white): ¼ cup
Powerade: 3/4 cup
Regular Jello: ¼ cup
Regular Iced Tea: 1/3 cup
Regular Gingerale: ⅓ cup
Regular Popsicle: 1 stick

Sugar Free Beverages:

Clear Coffee or Tea
Clear Broth
Club Soda
Crystal Light
Diet Cranberry
Diet Jello
Diet Pop
Powerade Zero
Water



Use as desired

WaterlooWellington DIABETES

Revised January 2016

Insulin adjustment for Sick Days

Blood Glucose mmol/L	Blood Ketones mmol/L	Urine Ketones	Action Required My rapid insulin is_____
< 3.9	negative		Decrease pre-meal insulin
4.0- 16.0	<0.6	+ or -	Usual insulin dose
4.0 – 16.0	≥ 0.6	Small light purple +2	Add an Extra 10% in addition to pre-meal dose
>16.0	<0.6	+ or -	Add an Extra 10% in addition to pre-meal dose
>16.0	≥0.7- 1.4	Moderate purple +3	Add an Extra 15% in addition to pre-meal dose
>16.0	≥1.5 – 3.0	Large dark purple +3	Add an Extra 20% every 4 hours in addition pre-meal dose Contact your Dr. or healthcare team as soon as possible.

Other autoimmune comorbidities

- Thyroid
  - 15-30%
  - Screening is important
- Celiac
  - 4-9% ?
  - Silent
- Addison Disease
  - Recurrent hypoglycemia
  - Decreased insulin requirements

WaterlooWellington DIABETES

DAWN 2 STUDY

- Which statement about people with type 1 diabetes is accurate?

a) 49% of people experience diabetes distress

b) 10 % of people have depression

c) 90% of people feel their health care providers listen to them

d) 90% of people were helped to set goals by their health care providers

Elevated Blood Sugar

What is the name given to an elevated blood sugar following a low blood sugar?

a)Dawn Effect

b)Pseudo hypoglycemia

✓ c)Somogyi effect

d)Szycofski effect

QUESTIONS

Diabetes and Children

Goals:

- Optimal Growth and development
  - Physical and psychologically
- Prevent severe hypoglycemia
  - Disrupts cognitive function
  - Severe Hypoglycemia age <6 can result in later cognitive impairment
- No symptoms of hyperglycemia
  - Hyperglycemia has also been shown to affect cognitive function
- Lots of Energy
- Interest in Friends and Activities
- Regular School Attendance

Challenges

- Growth Spurts
  - **HORMONES**
  - Altered patterns of eating and activity
- Recognition of Hypoglycemia
  - Nocturnal Hypoglycemia
  - Fear of seizures (parents)
- Changing behavior
  - Is this a normal response for a child this age or is this diabetes related?
- Variable Appetite
- Food Jags
- Illness
  - Regular colds, flu, infections require additional attention to maintain blood sugar control and prevent DKA

Insulin Dose

- Children .3-.5 u/kg
- Adolescents 1.0-1.5 u/kg

Blood Sugar Targets

Age	A1c	AC Meals	2 hr PC Meals
<6	<8.0	6-10	-
6-12	<7.5	4-10	-
13-18	<7.0	4-7	5-10

2013 Clinical Practice Guidelines

Rational for Targets

- Infants/Toddlers/Preschool
  - Unpredictable food intake
  - Can't recognize hypoglycemia
  - Prevent Hypoglycemia due to effect on cognitive function
- School Age
  - Communicate Hypoglycemia
  - Food more predictable
  - Lacking in Judgment
- Teenagers
  - Recognize and Treat Hypoglycemia
  - Understand concept of Balance
  - Able to Plan Ahead

Honeymoon

- Can last from a few weeks up to 2 years
- Good blood glucose control with decreased insulin requirements
- Insulin may even be stopped

Hypoglycemia

Child's Weight	< 15 kg	15- 30 kg	> 30 kg
Carbohydrate	5 g	10 g	15 g

Mini dose glucagon 10 ug per year of age

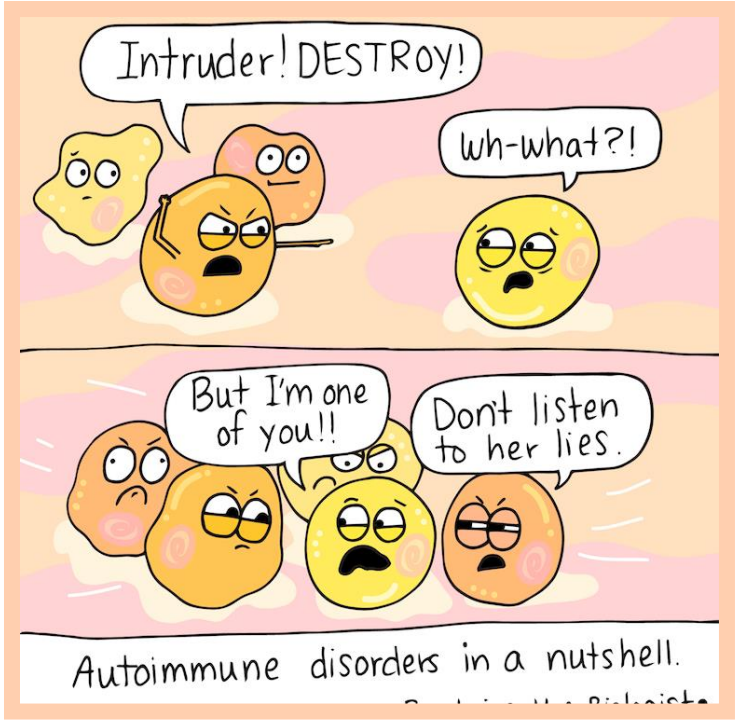
- minimum 20 ug,
- maximun 150 ug

Glucagon

Other Autoimmune Disease

Thyroid

- Most likely girls at onset of puberty
- Testing at Diagnosis and every 2 years
- +ve antibodies screen 6-12 months



Other Autoimmune Disease

Celiac

- 4-9% of children with Type 1
- Screening controversial,

Done as clinically indicated

No wheat, rye, barley
Non-contaminated oats

Screening for Complications

	Screen at:
Nephropathy	• Age 12 with 5 years duration-yearly
Retinopathy	• Age 15 and 5 years duration-yearly
Neuropathy	• Post puberty, 5 years duration and poor control
Hypertension	• twice per years
Dyslipidemia	• age 12 and 17 or
	• <12 if BMI> 95th or fam history

Eating Disorders

Females with diabetes have a 2 fold risk of eating disorders

Eating Disorders

- Anorexia- restriction of calories
  - Inadequate food intake
- Binge Eating
- Bulimia
  - binge eating then purging
  - Food intake is often out of control when binging
- Diabulimia-Insulin under dosing or omission

A1c over 12% is indicative of insulin omission

Eating Disorders Red Flags!

- Unexplained lows
- Unexplained weight loss or lack of weight gain
- A1c above 10%
- Restriction of carbohydrate
- A1c/meter and log book discrepancy
- Recurrent DKA
- Reverting to symptoms pre-diagnosis
- Lack of fingerpricks

Krishnamoorathy, MacDonald. S Diabetes and Eating Disorders: Are we feeding the problem? Presentation at Vascular 2013 conference.

Eating Disorders

8 - 30 % of Adolescents with diabetes have either an eating disorder or disordered eating.

Misc

- Flu shots yearly
- Females counseling about contraception

Risk of developing Type 1 Diabetes?

- Identical Twin — 1 in 2-3 chances
- Father — 1 in 16-20 chances
- Sibling — 1 in 20 chances
- Mother, child born before age 25 — 1 in 25 chances
- Mother, child born after age 25 — 1 in 100 chances
- No Family Members — 1 in 250-400 chances

Teenager

- Jessica is a 17 year old who has had diabetes for 12 years. She had a recent admissions for DKA and has lost 20 pounds since her last clinic visit.
- What would be the most likely cause of the weight loss?

a) Additional exercise

b) Starvation diet

✓ Insulin omission

d) Less hypoglycemia from frequent use of fibre snacks

Sick Day Management

Justine has just had her wisdom teeth removed. She is trying to convert her lunch to liquids which she can tolerate. She normally has 45 grams of carbohydrate. Which answer is **not** equivalent ?

a) 1 cup orange juice and 1 stick of popsicle

) 1 cup jello and 1 cup apple juice

c) 1 pudding cup and ½ cup ice cream

d) 1 cup chicken noodle soup and 8 crackers and ½ cup gingerale

Questions