

# What's New in Diabetes

Laughter is the best medicine... Well, unless you have Type 1 Diabetes. Then, insulin is probably better...



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# Disclosures

- Financial
  - Sanofi (Provention Bio): Speaker Bureau & Consultant
- Academic
  - TrialNet (Type 1 Diabetes research collaborative) has funded travel to research meetings
  - Type 1 Diabetes Exchange (QI collaborative) has funded travel to learning sessions
- Brand Name/Off-Label
  - Presentation will use proprietary names and images of specific diabetes technologies and insulins. No preference or support of any device or brand is implied
  - "Off-Label" use of technologies will be discussed throughout the lecture as most devices are only approved in subsets of pediatric patients
- Board Membership
  - Diabetes Education and Camping Association



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# DIAGNOSIS



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## Diagnosis & Classification

- Diabetes is a complex metabolic disorder characterized by chronic hyperglycemia
- Results from inadequate insulin secretion, action, or both

Criteria	Threshold
Symptoms	Present
Fasting BG	$\geq 126$ mg/dL
Random	$\geq 200$ mg/dL
OGTT 2hPP	$\geq 200$ mg/dL
Hemoglobin A1c	$\geq 6.5\%$



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## Type 1 vs Type 2

- Type 1 Diabetes (95%)
  - Autoimmune Disease
  - Beta-Cell Destruction
  - Insulin deficiency
  - Any Age, but typically < 45 years old
  - More common in children
- Type 2 Diabetes (< 5%)
  - Diet/Lifestyle driven
  - Ineffective use of insulin
  - Overweight/Obese
  - After puberty
  - More common in adult



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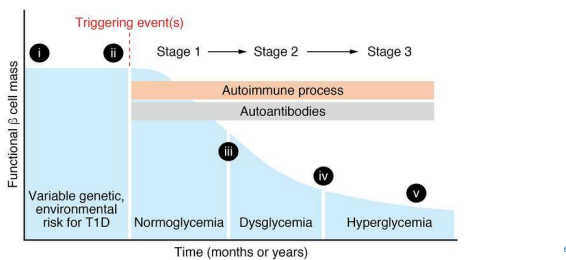
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## Stages of Type 1 Diabetes



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# INSULIN TREATMENT



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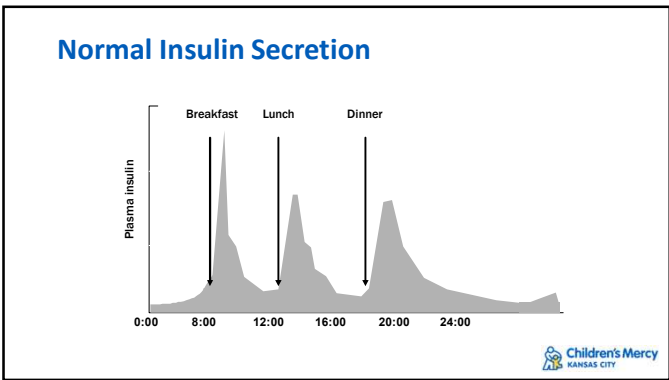
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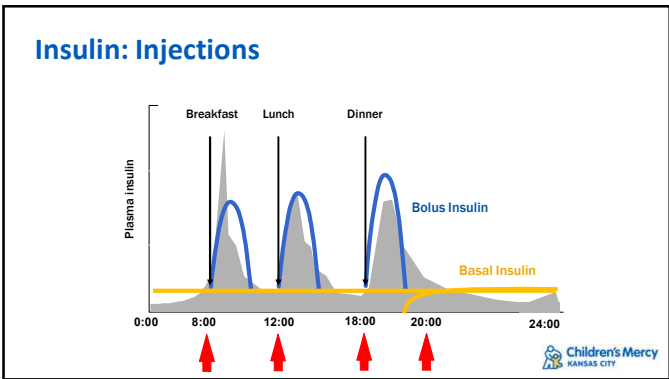
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## CONTINUOUS GLUCOSE MONITORS (CGM)



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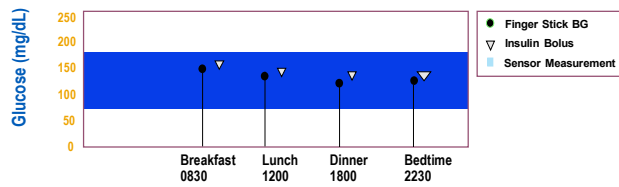
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### CGM



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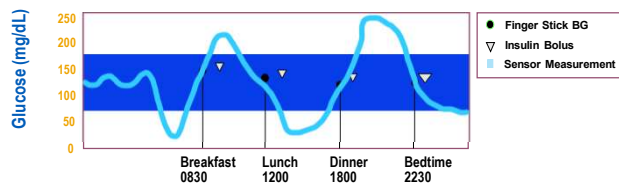
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### CGM



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What do those arrows mean?

Devinco G5/G6*		Guardian Connect		FreeStyle Libre		Eversense	
Arrow	Meaning	Arrow	Meaning	Arrow	Meaning	Arrow	Meaning
↗	Glucose rapidly rising >2 mg/dL/min >0.2 mmol/L/min	↗	Glucose rapidly rising >2 mg/dL/min >0.2 mmol/L/min	—	—	—	—
↑	Glucose rising 2-3 mg/dL/min 0.1-0.2 mmol/L/min	↑	Glucose is rising 2-3 mg/dL/min 0.1-0.2 mmol/L/min	↗	Glucose rapidly rising >2 mg/dL/min >0.2 mmol/L/min	↑	Glucose rapidly rising >2 mg/dL/min >0.2 mmol/L/min
↘	Glucose slowly rising 1-2 mg/dL/min 0.06-0.1 mmol/L/min	↗	Glucose slowly rising 1-2 mg/dL/min 0.06-0.1 mmol/L/min	↘	Glucose rising 2-3 mg/dL/min 0.06-0.1 mmol/L/min	↘	Glucose slowly rising 1-2 mg/dL/min 0.06-0.1 mmol/L/min
→	Glucose steady decreasing/decreasing <1 mg/dL/min <0.06 mmol/L/min	—	Glucose steady decreasing/decreasing <1 mg/dL/min <0.06 mmol/L/min	→	Glucose steady decreasing/decreasing <1 mg/dL/min <0.06 mmol/L/min	→	Glucose steady decreasing/decreasing <1 mg/dL/min <0.06 mmol/L/min
↘	Glucose slowly falling 1-2 mg/dL/min 0.06-0.1 mmol/L/min	↓	Glucose slowly falling 1-2 mg/dL/min 0.06-0.1 mmol/L/min	↘	Glucose slowly falling 1-2 mg/dL/min 0.06-0.1 mmol/L/min	↘	Glucose slowly falling 1-2 mg/dL/min 0.06-0.1 mmol/L/min
↓	Glucose falling 2-3 mg/dL/min 0.1-0.2 mmol/L/min	↓	Glucose is falling 2-3 mg/dL/min 0.1-0.2 mmol/L/min	↓	Glucose rapidly falling >2 mg/dL/min >0.2 mmol/L/min	↓	Glucose rapidly falling >2 mg/dL/min >0.2 mmol/L/min
↘	Glucose rapidly falling >3 mg/dL/min >0.2 mmol/L/min	↘	Glucose rapidly falling >3 mg/dL/min >0.2 mmol/L/min	—	—	—	—

Kruger DF, Edelman SV, Hinnen DA, Parkin CG. Reference guide for integrating CGM into clinical practice. Diabetes Educ. 2019;45(suppl 1):3S-20S



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INSULIN PUMPS



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The First Pump: 1978





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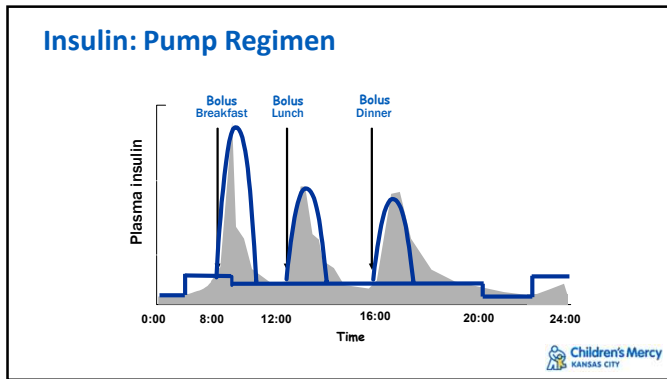
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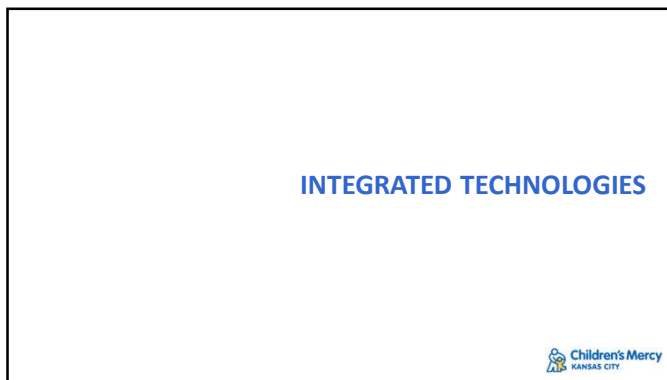
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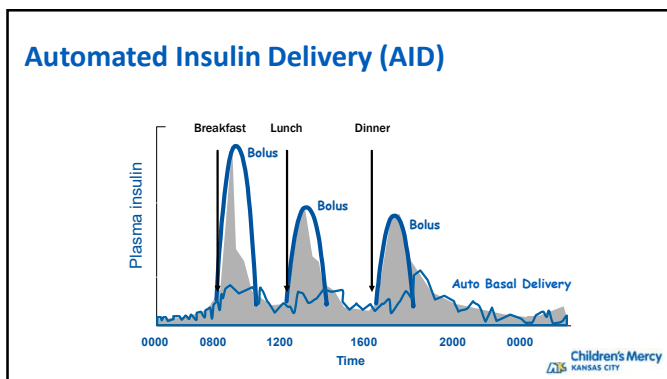
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## More than SANE

Violence is becoming an alarmingly frequent part of our society

Kids are often victims of violence, particularly in Urban areas

What are we doing to help ensure social justice for children who are victims of violent crime?

We are good at helping children survive violent crime, now we need to focus on helping them receive justice afterwards



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## According to the CDC...



3,500 children and teens are shot and killed yearly

15,000 children are shot and wounded annually (CDC, "Underlying Cause of Death 2016-2020, Ages 0-19")  
WE HAVE A PROBLEM!!!



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## Current State

- Victims of violent crime (such as gunshot wounds and stabbings) receive excellent trauma care, helping them to survive their injuries.

Victims of Sexual assault and abuse receive excellent forensic care. Evidence collection, court, trials, etc.



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