

Diagnosing Diabetes?

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As you come in, please think about your answer to the following:

What is diabetes?

What is Diabetes?

What is diabetes?

- Diabetes – The need
- Diabetes – The symptoms
- Diabetes – The biology (the not boring version)
- Diabetes – The diagnosis
- Diabetes – The epidemic

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Diabetes – The need

- **Diabetes is one of the most common chronic diseases of childhood**
 - There are approximately 200,000 individuals under 20 years of age with diabetes in the U.S.
 - The SEARCH for Diabetes in Youth (SEARCH) study recently reported that 1.93 per 1,000 people under 20 were diagnosed with type 1 diabetes.
- Trained and knowledgeable staff are essential to provide a safe school and child care environment for children with diabetes.
- Many children who are diagnosed with T1D have been seen by a health care provider in the month prior to diagnosis.

What is Diabetes?

JW is a 9 year old boy who is otherwise healthy. He does well in school, but recently his teacher has been concerned that he is having trouble concentrating in class, he seems frequently distracted and for the last 2-3 weeks has been asking to go to the bathroom more frequently. Today he told the teacher he has a stomach ache and he sent JW to you for evaluation.

What additional information would be the most helpful to suspect diabetes as the cause of his symptoms?

What is Diabetes?

What additional information would be the most helpful to suspect diabetes as the cause of his symptoms?

- A. What has he been eating in the lunch room.
- B. Whether he is drinking water, full sugar sodas or diet sodas at home and during the school day.
- C. What color his urine is when he is going to be bathroom
- D. Whether he is going to the bathroom frequently at home as well as in school.

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Diabetes – The symptoms

- The most common early signs of **Type 1** Diabetes are:
 - Weight loss
 - Polyuria (peeing more than normal)
 - Polydipsia (urinating more than normal)
 - Nocturia (waking up from sleep to pee).
- Less common, but severe signs of diabetes:
 - Fast, deep breathing unable to speak a full sentence.
 - Severe abdominal pain and vomiting.
 - Abnormal thinking, confusion and odd behavior.

Diabetes – The symptoms

- The most common early signs of **Type 2** Diabetes are:
 -
 -
 -
 -
 -
 - Polyuria (peeing more than normal)
 - Polydipsia (urinating more than normal)
 - Nocturia (waking up from sleep to pee).
- Only occurs after children have begun puberty.
- Usually preceded by weight gain.
- Usually found with screening by a doctor and is often **asymptomatic**.

Diabetes – The symptoms

- A common sign of emerging **Type 2** Diabetes is a skin change called **Acanthosis Nigricans**.
- Usually seen at the back of the neck or under the arms.



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Diabetes – Back to biology class

For the next 2 minutes –

Think silently about the following & write your thoughts.

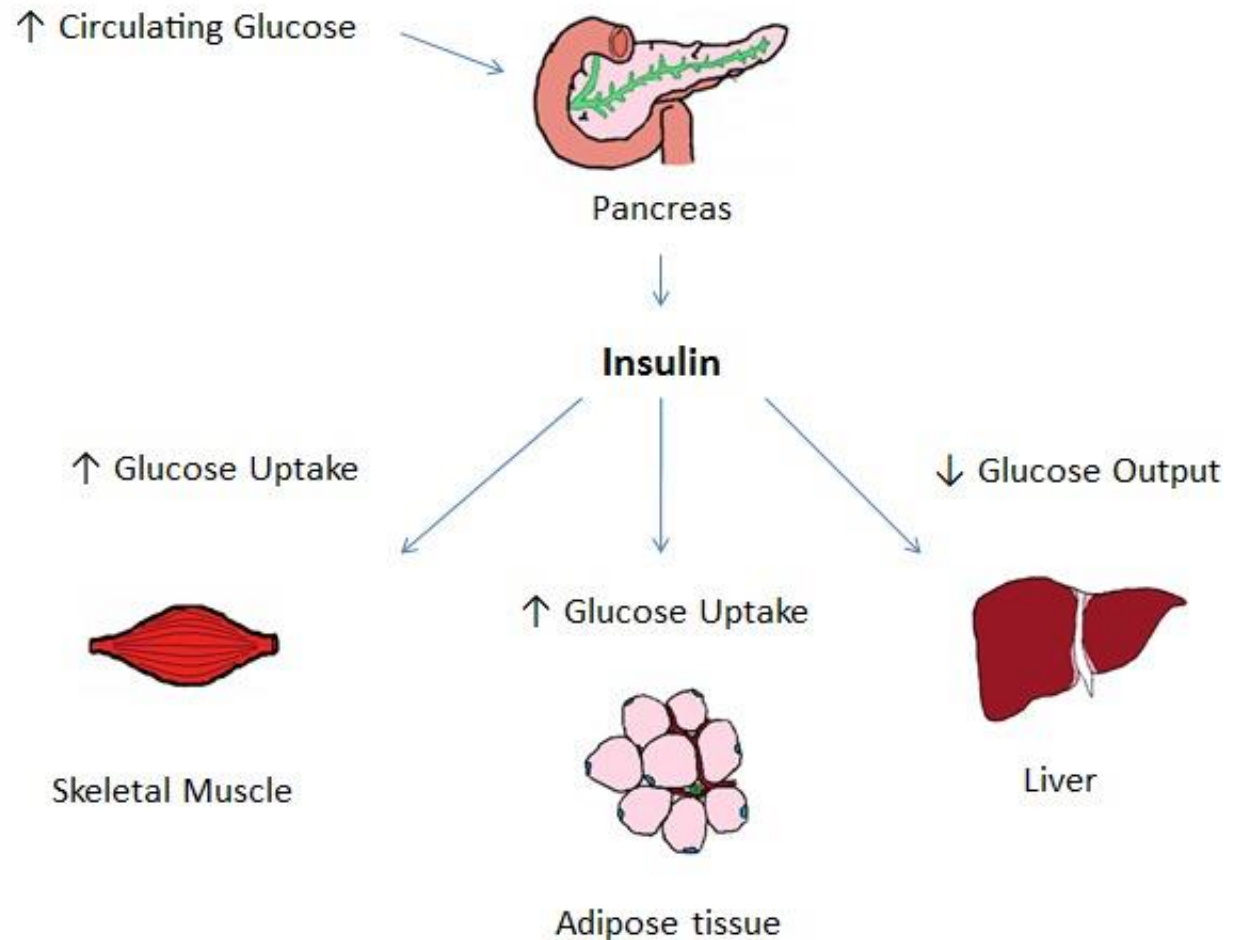
What does insulin do in the body?

For the next 3 minutes –

Turn to the person next to you and discuss your thoughts.

Diabetes – Back to biology class

- **ALL people with diabetes (Type 1 or Type 2) don't have as much insulin in their body as they need.**
- **Type 1** – The pancreas doesn't make enough insulin
- **Type 2** – There is plenty of insulin, but the body is resistant to its effects.

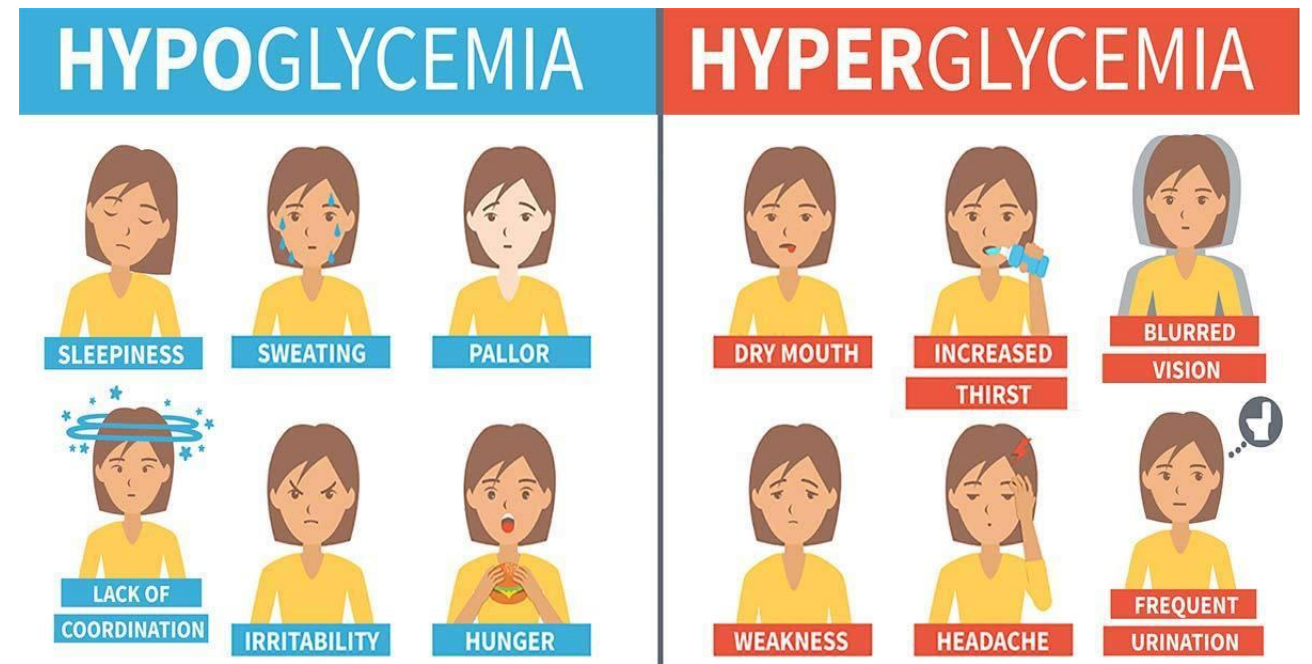


Diabetes – Back to biology class

If sugar is too high, then the body tries to get rid of sugar through the urine.

This causes **increased urination** which, in turn causes **increased thirst**.

If sugar, an important nutrient, is being lost then the body has to turn to other areas for food and muscle and fat are broken down for fuel so people will tend to **lose weight!**



What is Diabetes?

DM is a 14 year old boy who comes to your office and tells you that for the last 2 months he has had to pee about every 3 hours and he constantly feels thirsty. He looks tired and tells you its because he is peeing 2-3 times per night and can't get any rest. He says that he is otherwise feeling well.

What should you do next?

What is Diabetes?

What should you do next?

- A. Use Suzie Q's blood glucose meter to check his blood sugar.
- B. Use a urine test strip to check for glucose in his urine.
- C. Use a urine test strip to check for ketones in his urine.
- D. Call his parents to discuss your concerns.
- E. Tell him that he has diabetes and run to give Dan a high-five.

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Diabetes – The diagnosis

How do we diagnose diabetes?

FASTING blood sugar of 127mg/dL or more

OR

HgbA1C of 6.5% or more

OR

A blood sugar over 200mg/dL after a standardized 75g glucose ingestion.

OR

ANY patient with classic symptoms: a random plasma glucose ≥ 200 .

Diabetes – The diagnosis

- 1) Call the parents or primary care doctor – tell them you are worried!
- 2) IF you are comfortable, AND have a strong suspicion of diabetes, AND it is allowed by student/parent/district/schoolboard etc.

You could consider:

- A random blood sugar:
 - Obtained with a fingerstick.
 - With symptoms, a value over 200mg/dL is abnormal & needs further testing.
 - A reading UNDER 200mg/dL does not “rule out” diabetes! If it is normal and you are suspicious, you should still have the child evaluated by a doctor.

Diabetes – The diagnosis

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- 2) IF you are comfortable, AND have a strong suspicion of diabetes, AND it is allowed by student/parent/district/schoolboard etc.

You could consider:

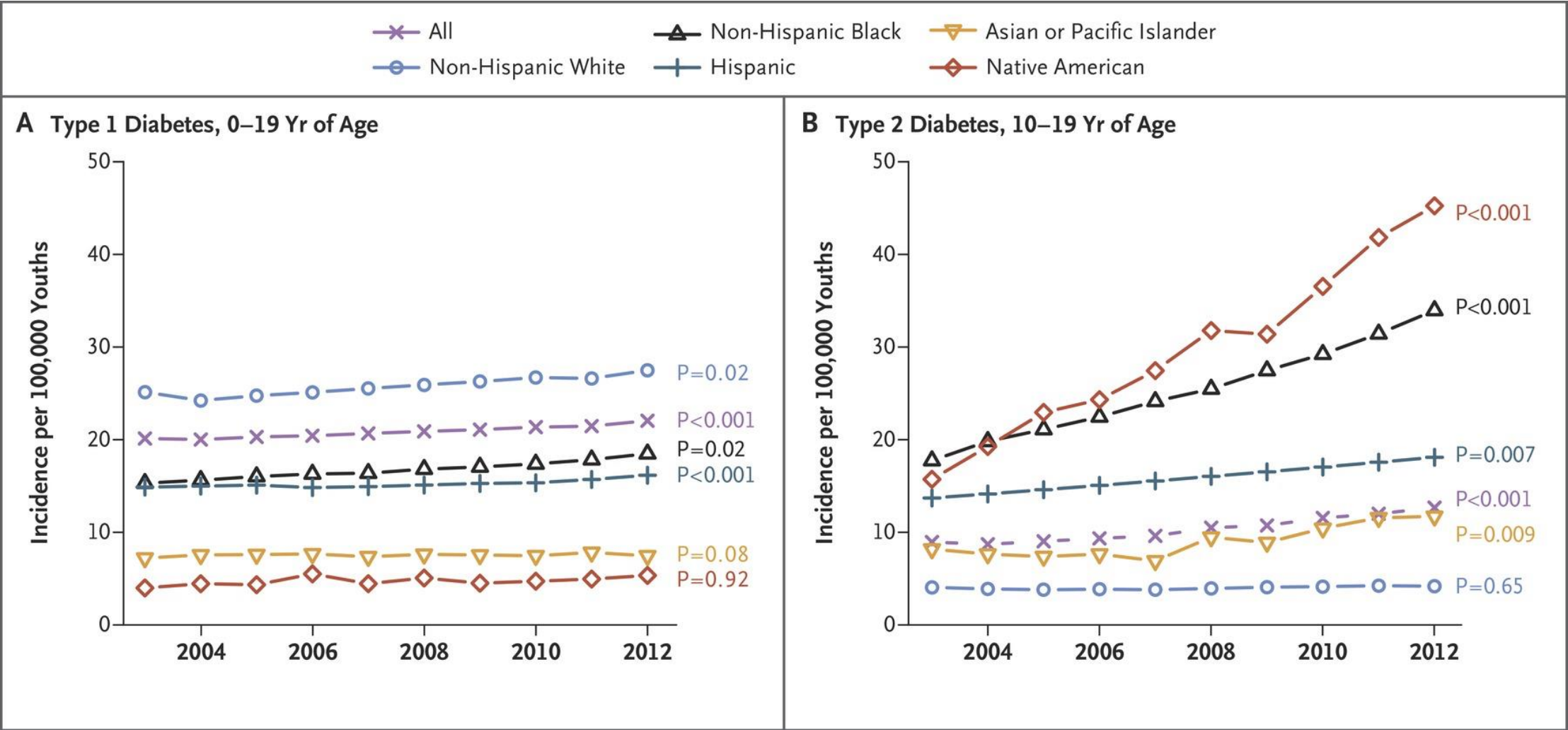
- A urine dipstick:
 - Obtained by dipping a chemical strip into the urine.
 - Positive glucose is abnormal & needs further evaluation
 - Positive ketones is abnormal & needs further evaluation.
 - A normal result does not “rule out” diabetes! If it is normal and you are suspicious, you should still have the child evaluated by a doctor.

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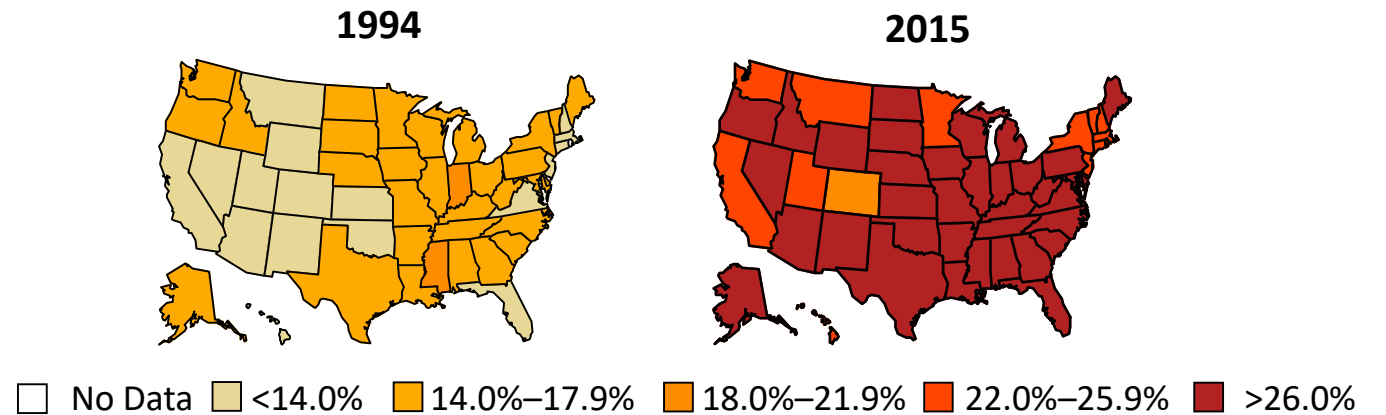
Diabetes – The epidemic



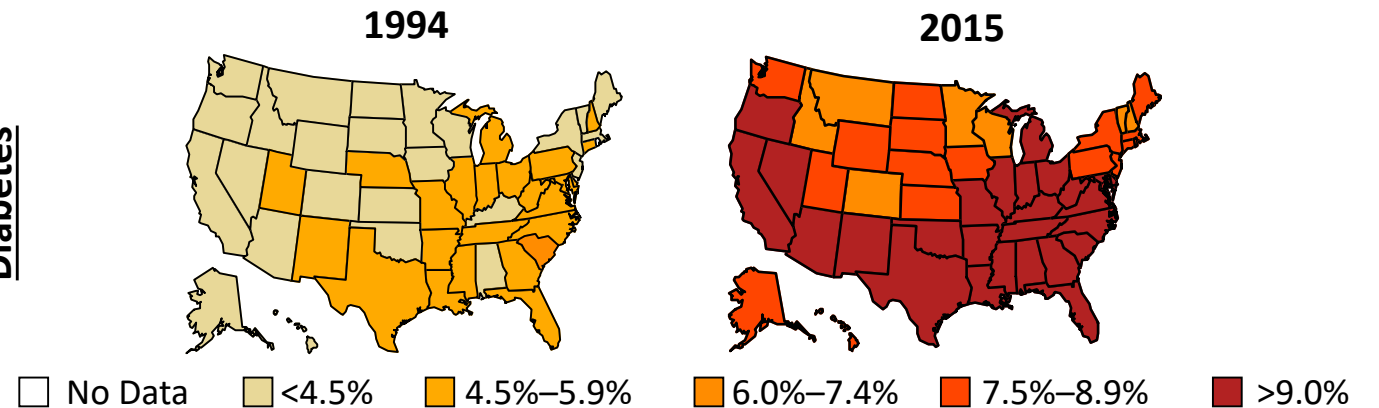
Diabetes – The epidemic

- Rates of obesity have risen drastically since the early 1990s.
- Along with obesity rates, the rate of diabetes has risen as well.
- Rates among children are similar to those among adults.

Obesity (BMI \geq 30 kg/m²)



Diabetes



Questions?

Thank You!