

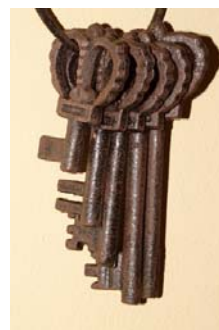
## Healthy Habits to Prevent Type 2 Diabetes In Children and Adolescents

Rachel Klein, MD, Internal Medicine/Pediatrics (Double-Board Certified)  
Sharp Rees-Stealy Del Mar

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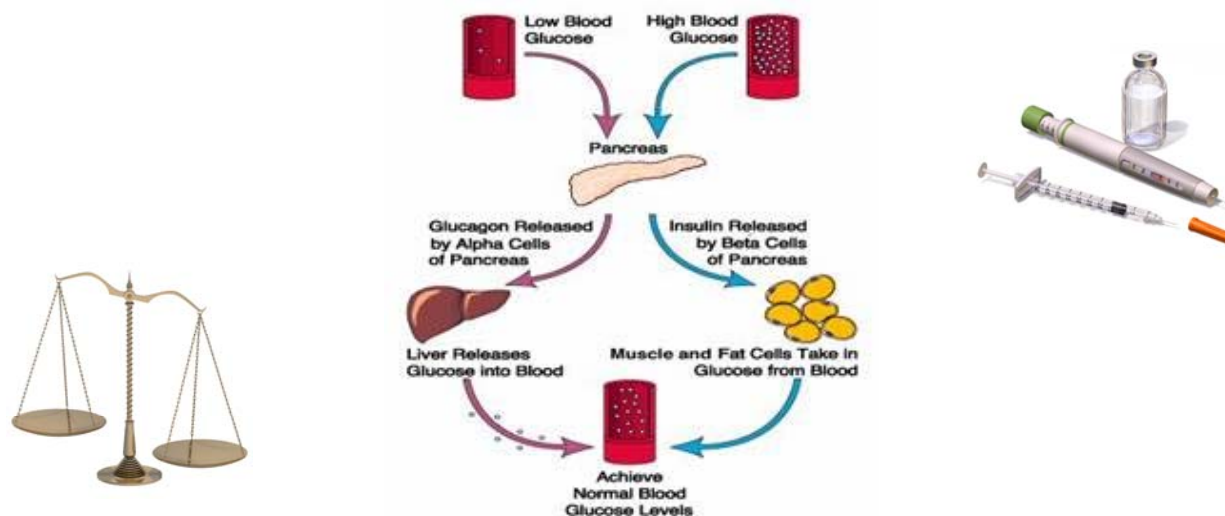
## What is Diabetes?

Diabetes is a condition in which the body cannot produce enough insulin or cannot use the insulin properly.



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## Balancing Body Needs and Insulin



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## Diabetes Effect on the Body

- Vision Loss
- Neuropathy
- Heart Disease
- Kidney Failure
- Stroke

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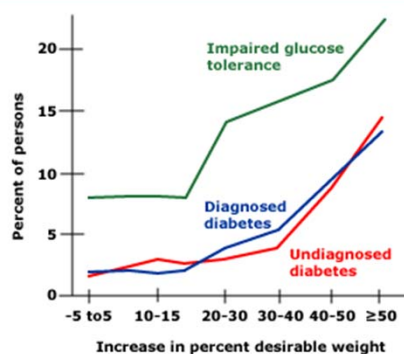
## Growing Epidemic

- More than 29 million Americans have diabetes
- Rising in children and adolescents



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### Increasing body weight increases risk of diabetes



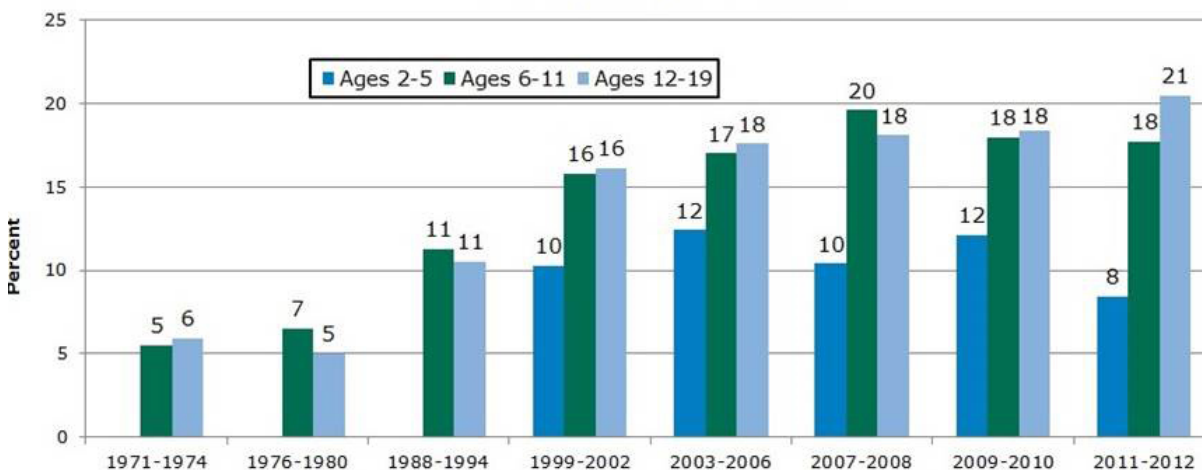
Rates of impaired glucose tolerance and diagnosed and undiagnosed type 2 diabetes in the United States adult population according to increase in percent desirable weight from age 25 years to age at maximum adult weight (about 50 years).

Data from Harris, MI, *Diabetes Care* 1989; 12:464.

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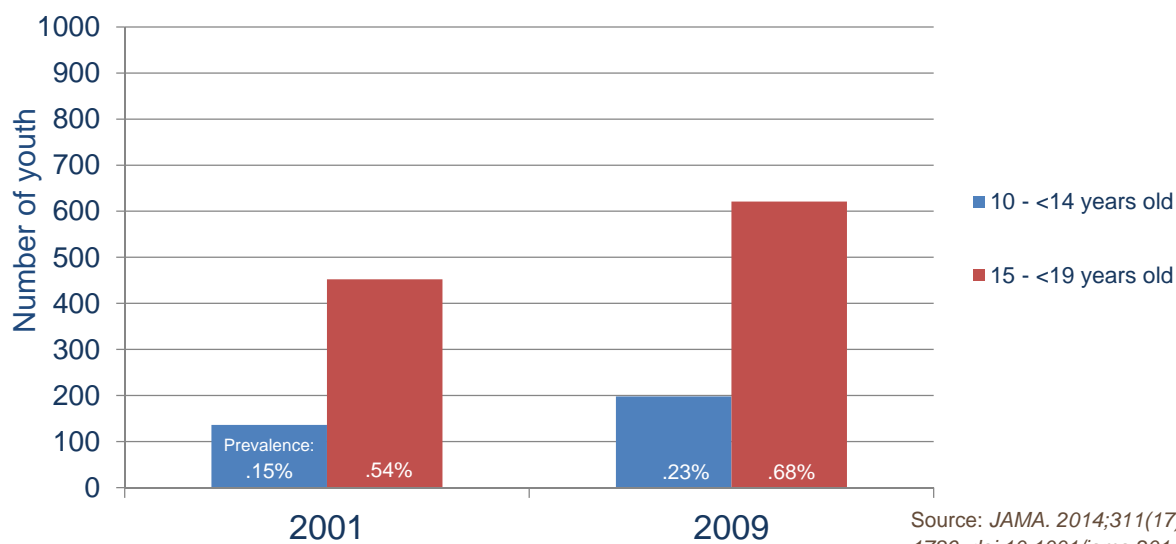
**Percentage of Children Ages 2 to 19 Who Are Obese, by Age:  
Selected Years, 1971-2012**



Source: Child Trends Data Bank

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**Prevalence of Type 2 Diabetes per 1000, by Age**



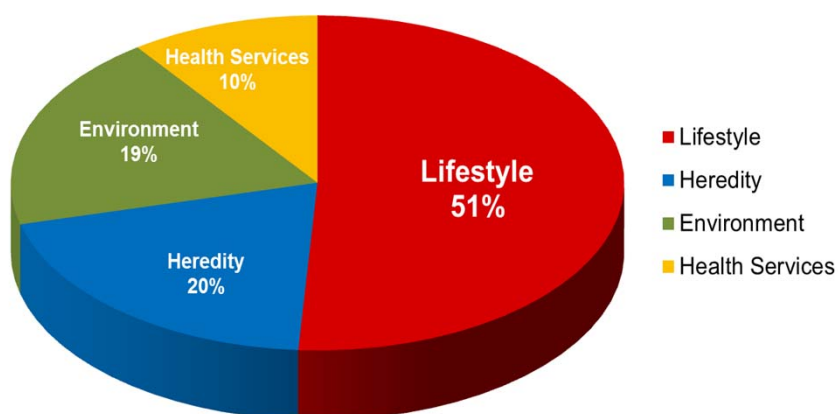
Source: JAMA. 2014;311(17):1778-1786. doi:10.1001/jama.2014.3201

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## Risk Factors for Childhood Type 2 Diabetes

- Family member with Type 2 diabetes
- Gestational diabetes in mother
- Overweight/obesity
- Inactivity
- High birth weight
- Certain high-risk ethnic groups

## Main Mortality Risk Factors in U.S.



Mokdad AH, et.al. Actual Causes of death in the United States, 2000. JAMA. 2004; 291:1238-1245

## Pre-diabetes vs. Diabetes

### Pre-diabetes

- Fasting Blood Glucose 100-125
- A1C between 5.7-6.4

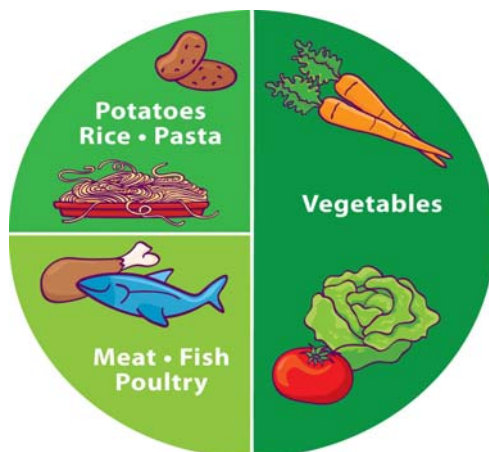
### Diabetes

- Fasting Blood Glucose >126
- A1C 6.5 or higher

## Lifestyle Modification - Step One: Making Better Food Choices



## Dietary Recommendations



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## Healthy Fats



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## Lifestyle Modification - Step Two: Get Active!



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## Learn More

- American Diabetes Association - <http://www.diabetes.org/>
- National Institute of Diabetes and Digestive and Kidney Diseases - <https://www.niddk.nih.gov/>
- National Diabetes Education Program - <https://www.cdc.gov/diabetes>

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