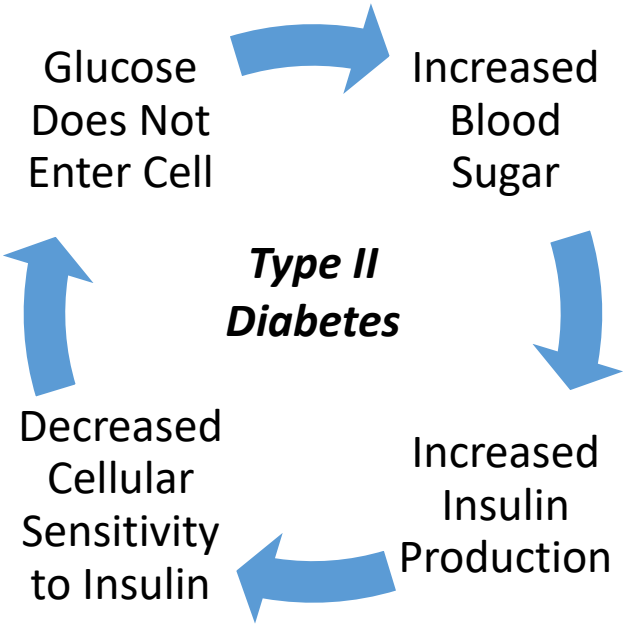
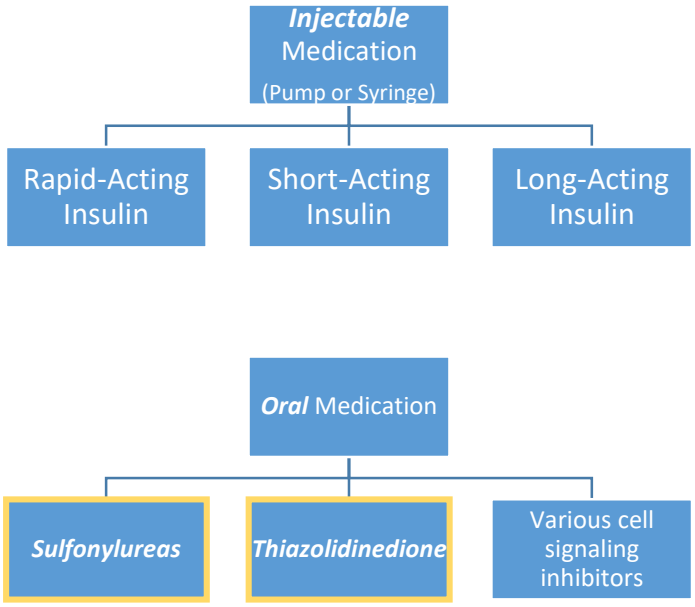
What is Type II Diabetes?

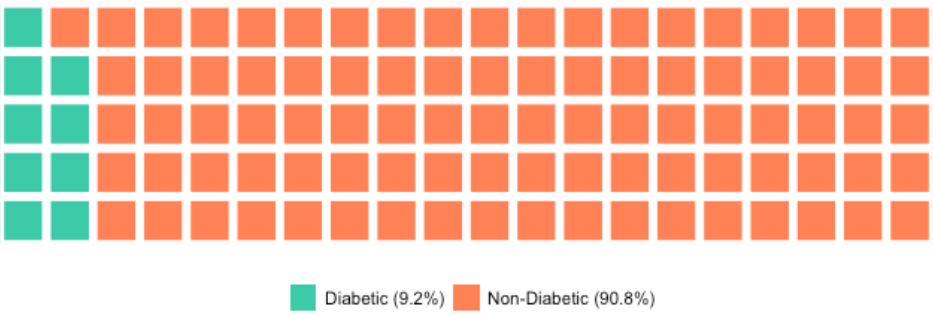


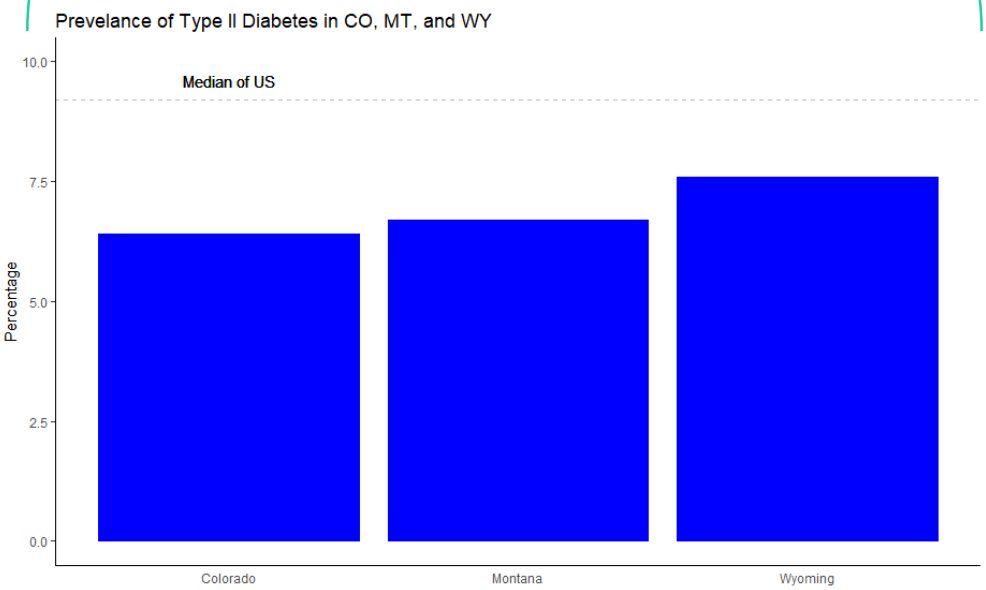
Medications



http://www.diabetes.org/living-with-diabetes/treatment-and-care/medication/

Prevalence of Diabetes in the US





Diabetes Statistics

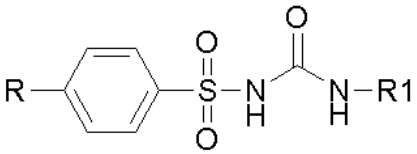
- 9.4% of the US population has diabetes (2015)
  - 30.3 million
- 1.5 million new diagnoses annual
- 7th leading cause of death in the US

Diabetes by Race/Ethnicity

- 7.4% non-Hispanic whites
- 8.0% Asian Americans
- 12.1% Hispanics
- 12.7% African Americans
- 15.1% Native American

Created using R from CDC data (Carson Keeter)

Sulfonylureas



Mechanism of Action: **Pancreatic β-cell**

Blocks ATP-sensitive K^+ from releasing K^+ → Cellular Depolarization occurs → Ca^{++} channels open → Insulin released from cell → Decreased plasma glucose levels

Implications for Physical Activity:

Increased likelihood of hypoglycemia

Increased difficulty monitoring insulin levels

Common Brands	Generic Name
DiaBeta	***gly***buride
Amaryl	***gli***mepiride
Glucotrol	***gli***pizide

Major Side Effects (rare)

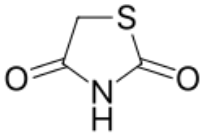
- Hypoglycemia
- Pale Skin
- Jaundice
- Various heart problems
- Hyponatremia
  - Headache
  - Severe weakness
  - Feeling unsteady

Minor Side Effects (common)

- Nausea
- Heartburn
- Full feeling

Sulfonylurea Agents: "Oral Hypoglycemic Agents," Joslin Diabetes Center.

Thiazolidinedione (TZD)



Mechanism of Action: **Muscle and Adipose Tissue Receptors**

TZD binds to PPARγ receptor on adipose tissue → Regulates gene transcription → Increases sensitivity to Insulin → Increases glucose uptake in adipose and muscle tissue → Decreased plasma glucose levels

Implications for Physical Activity:

Possibility of increased exercise capacity

Increased functionality of mitochondria

Common Brands	Generic Name
Actos	Pio***glitazone***
Avandia	Rosi***glitazone***

Major Side Effects (rare)

- Fast heartbeat
- Seizures
- Anxiety
- Depression
- Dizziness

Minor Side Effects (common)

- Cold symptoms
- Joint pain
- Muscle soreness
- General feeling of discomfort

Carson Keeter: University of Wyoming