

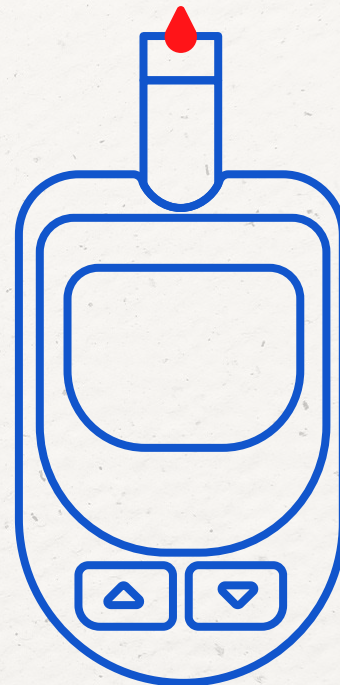


# Diabetes Risk Factors:

*In U.S. Adults*


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# Topic & Motivation

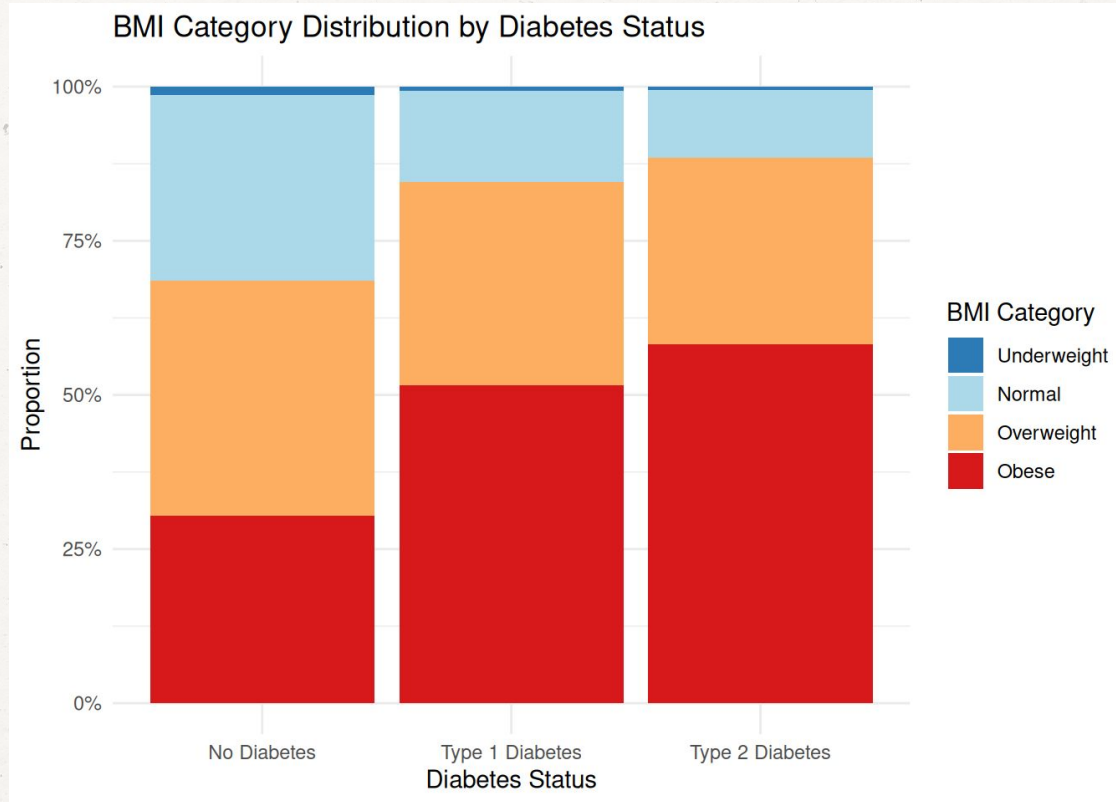
- Q: How are BMI, level of physical activity , and income level status associated with the likelihood of diabetes among U.S. adults?
    - Leading health concern in U.S.
    - Lifestyle & income may influence risk
  - Type 1 diabetes: known to be a purely genetically-linked autoimmune disease
  - Type 2 diabetes: partially genetically linked, but mostly influenced by environmental factors
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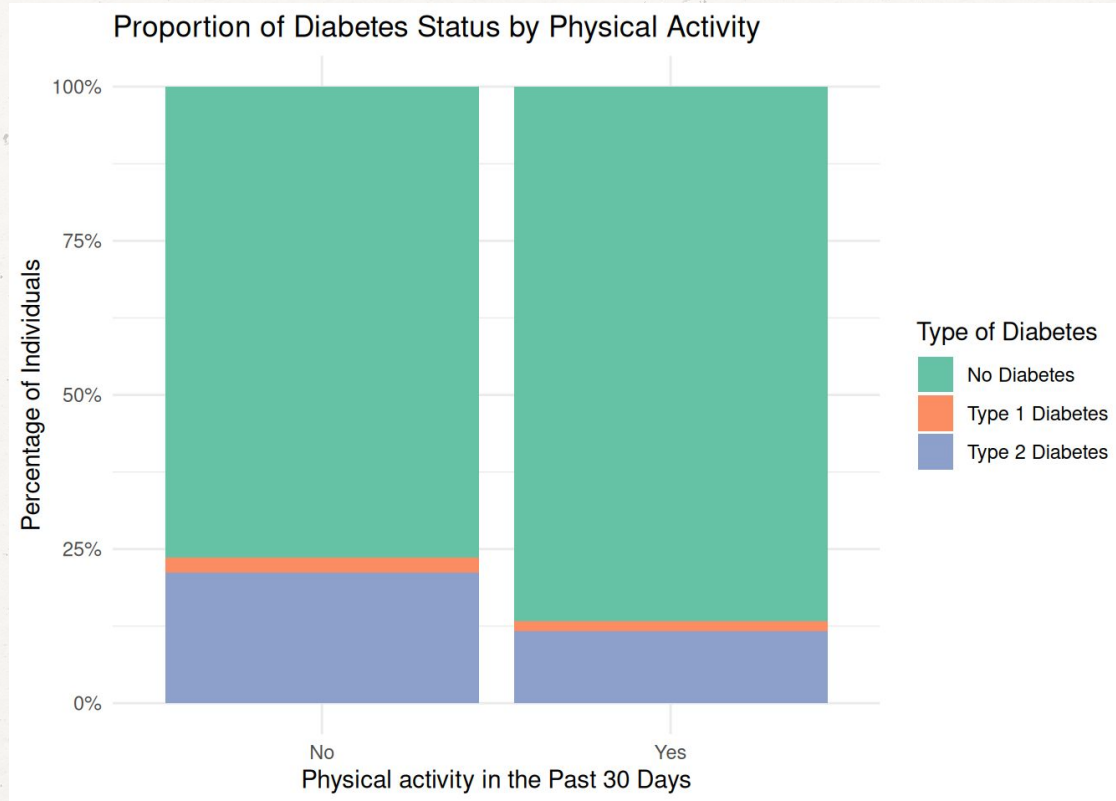
# Introducing the Data

- Source: Kaggle
  - Collected in 2015 via the Behavioral Risk Factor Surveillance System (BRFSS), a "health-related telephone survey that is collected annually by the CDC."
  - Key variables
    - Body Mass Index (BMI): numerical variable; we then divided into categories
    - Physical Activity Status: categorical variable; yes/no
    - Income level: categorical variable; income ranges
  - Number of observations: 253680
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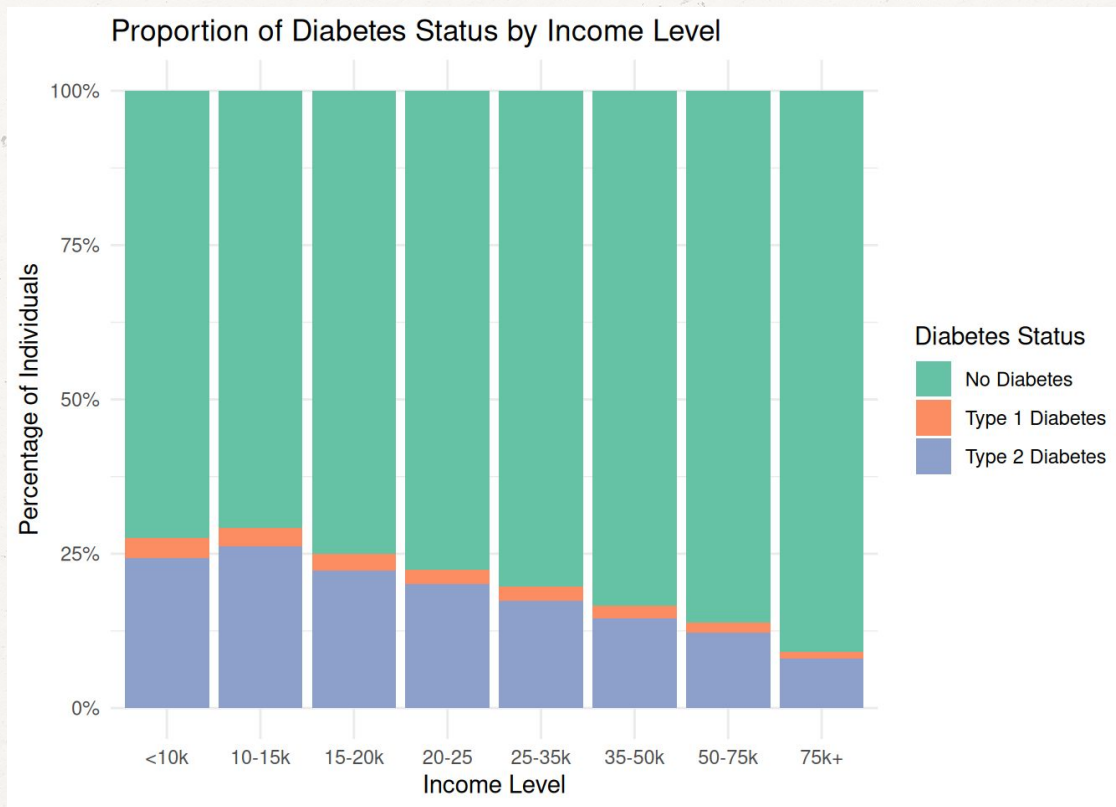
# EDA 1: BMI vs. Diabetes Status



# EDA 2: Physical Activity vs. Diabetes Status



# EDA 3: Income Level vs. Diabetes Status





# Conclusions + discussion + critique ...

- No clear correlation between physical activity and Type 1 diabetes
  - Negative correlation between physical activity and Type 2 diabetes (less exercise → higher prevalence)
  - Type 1 diabetes appears consistent across income levels (not lifestyle-driven)
  - Type 2 diabetes shows higher prevalence in lower-income groups
    - Likely explanations:
      - Lifestyle factors (exercise, diet, weight) influence Type 2 diabetes
      - Limited access to healthy foods and healthcare in lower-income populations
  - Type 2 diabetes is strongly associated with lifestyle and socioeconomic factors
  - Correlation does not imply causation (cannot determine direction of effects)
  - Self-reported data (e.g., exercise in past 30 days) may be unreliable
  - Other confounding variables may not be accounted for
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