



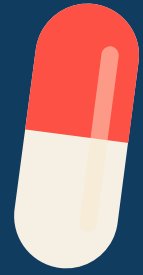
DIABETES HEALTH INDICATOR PROJECT

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+ Presented by:
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Data Analytics | COOP Careers | Spring 2025 | C522





INTRODUCTION TO TEAM



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TABLE OF CONTENTS

01

OBJECTIVE

- Project Goals & Ambition
- Key Risk Factors

02

CONTEXT

- Intro to Diabetes
- Prevalence/Impact
- Public Health Importance

03

DATA VISUALIZATION(S)

- Methodology
- Graphs & Charts
- Findings

04

NEXT STEPS & REFLECTIONS

- Personal Takeaways
- Data Expansion
- Community Outreach



CONTEXT

What is diabetes?

Diabetes mellitus, commonly known as diabetes, is a chronic condition in which the body loses the ability to regulate blood glucose levels effectively.

- Caused by insufficient insulin production or ineffective insulin use.
- Leads to high blood sugar levels, which can damage organs over time.

Affects over 34 million Americans!!





OBJECTIVE

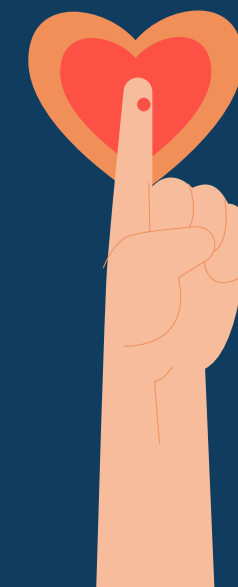
Conduct a comprehensive analysis of diabetes health indicators to:

- Understand the prevalence and risk factors of diabetes
- Identify key health behaviors and demographics associated with diabetes risk
- Develop insights for preventive healthcare strategies



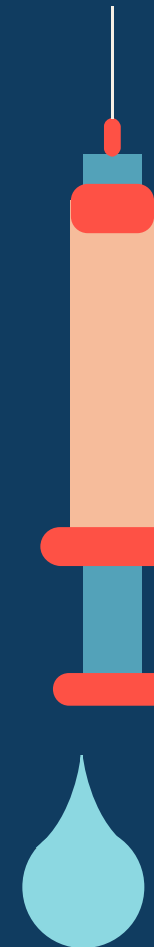
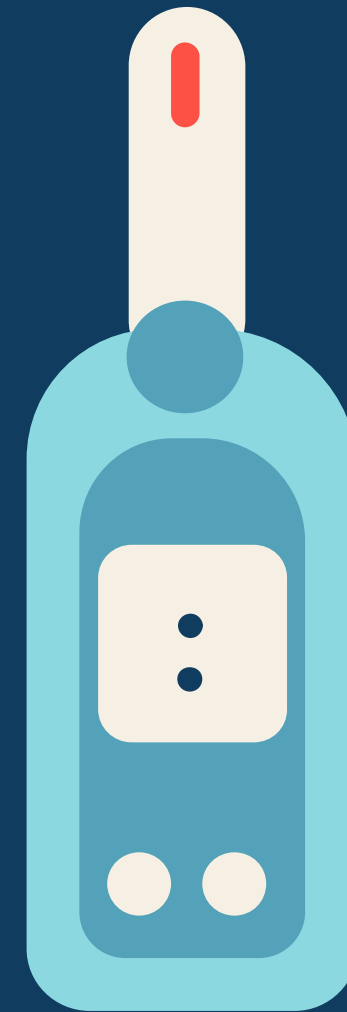
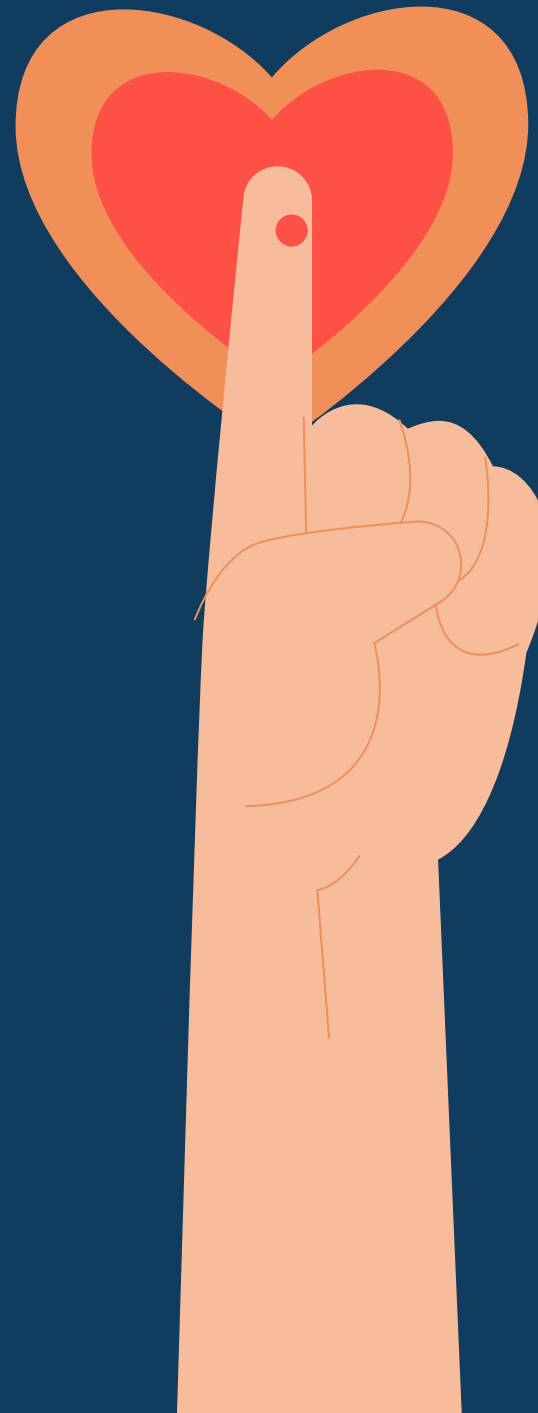
Research Questions

- What are the primary risk factors for diabetes?
- How do lifestyle choices impact diabetes risk?
- Are there significant differences in diabetes prevalence across age groups?
- What preventive strategies can be developed based on these insights?





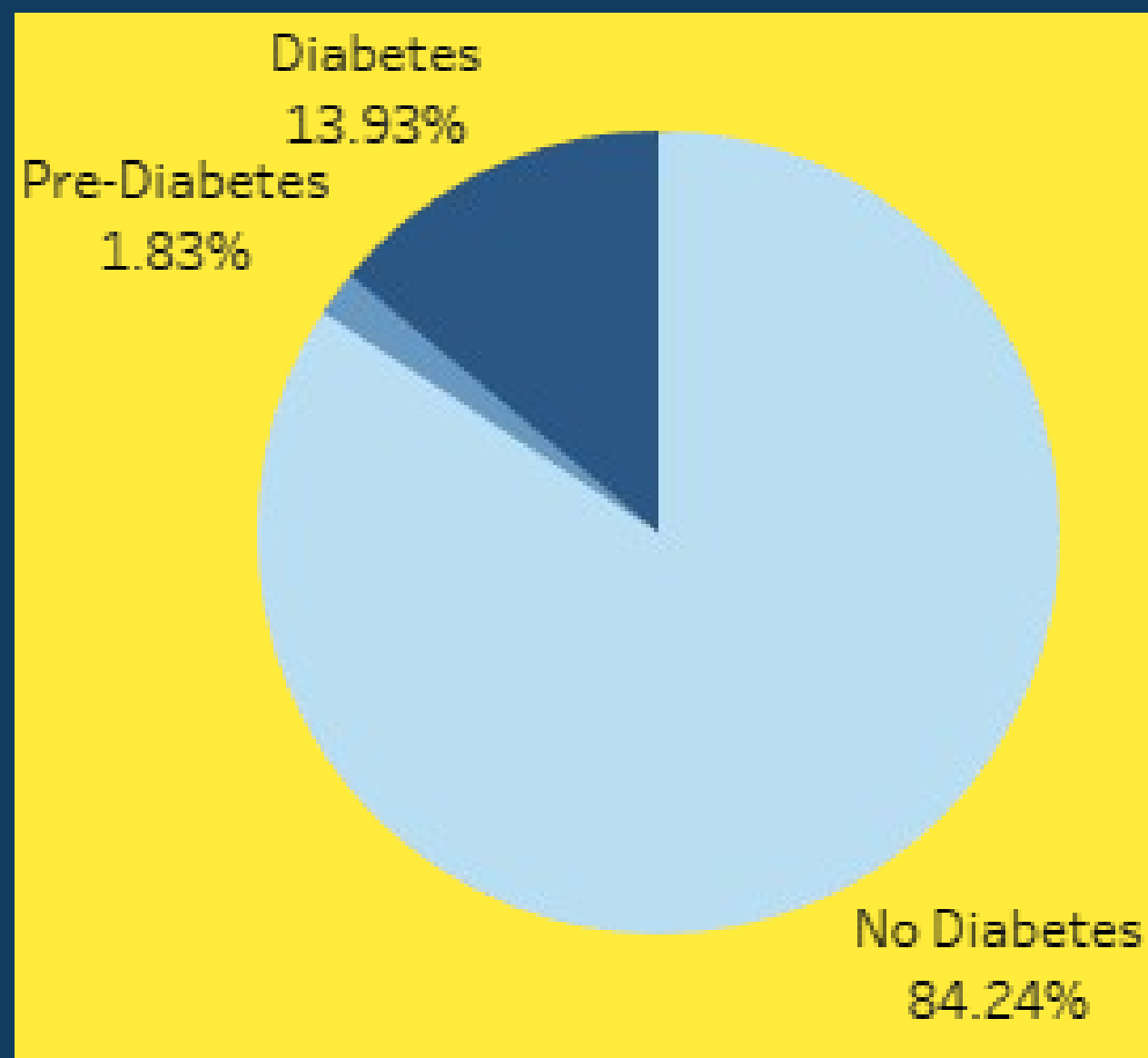
VISUALIZING DATASET



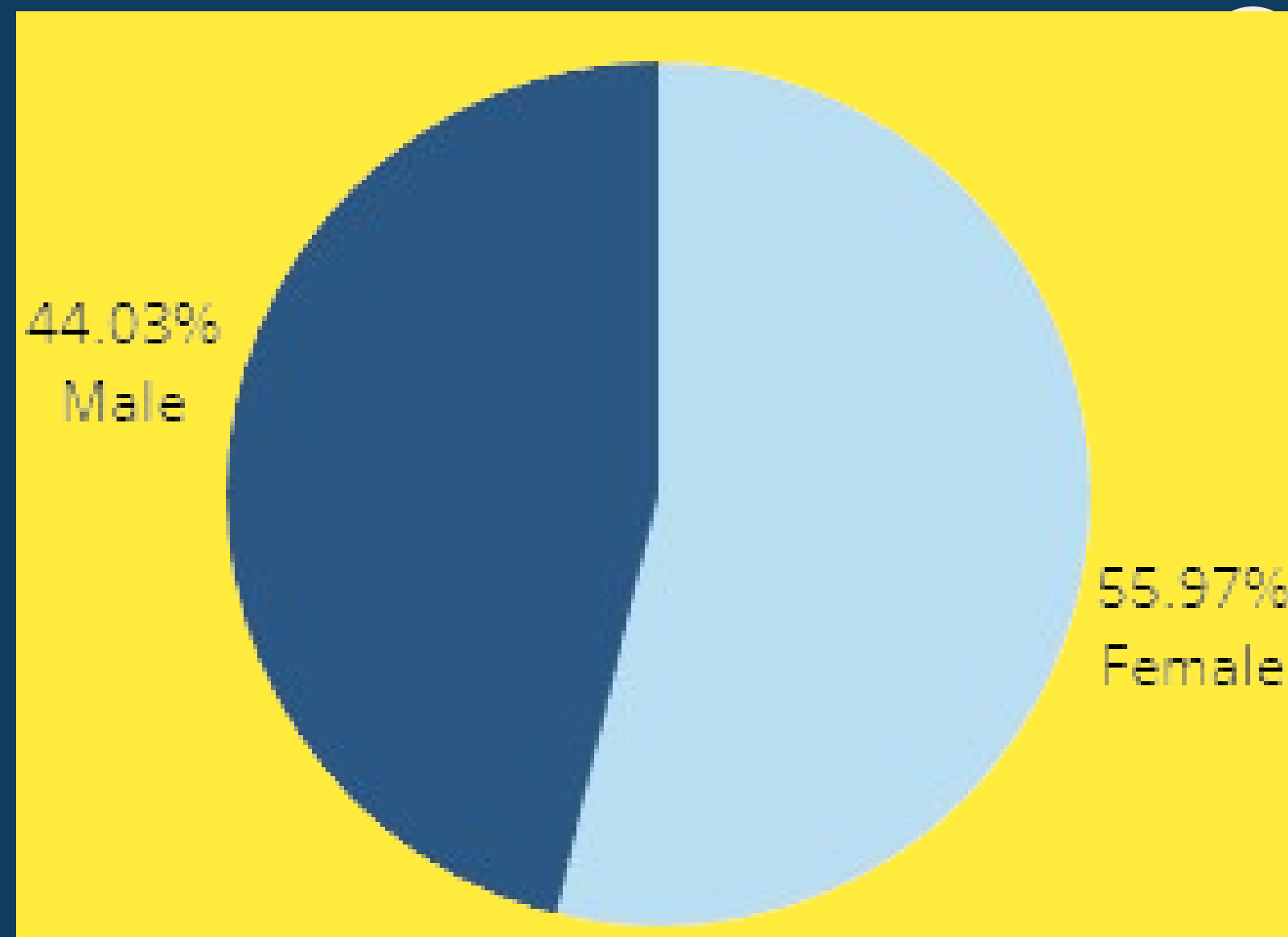
+ STATUS DISTRIBUTION



Diabetes Pie Chart



Sex Pie Chart

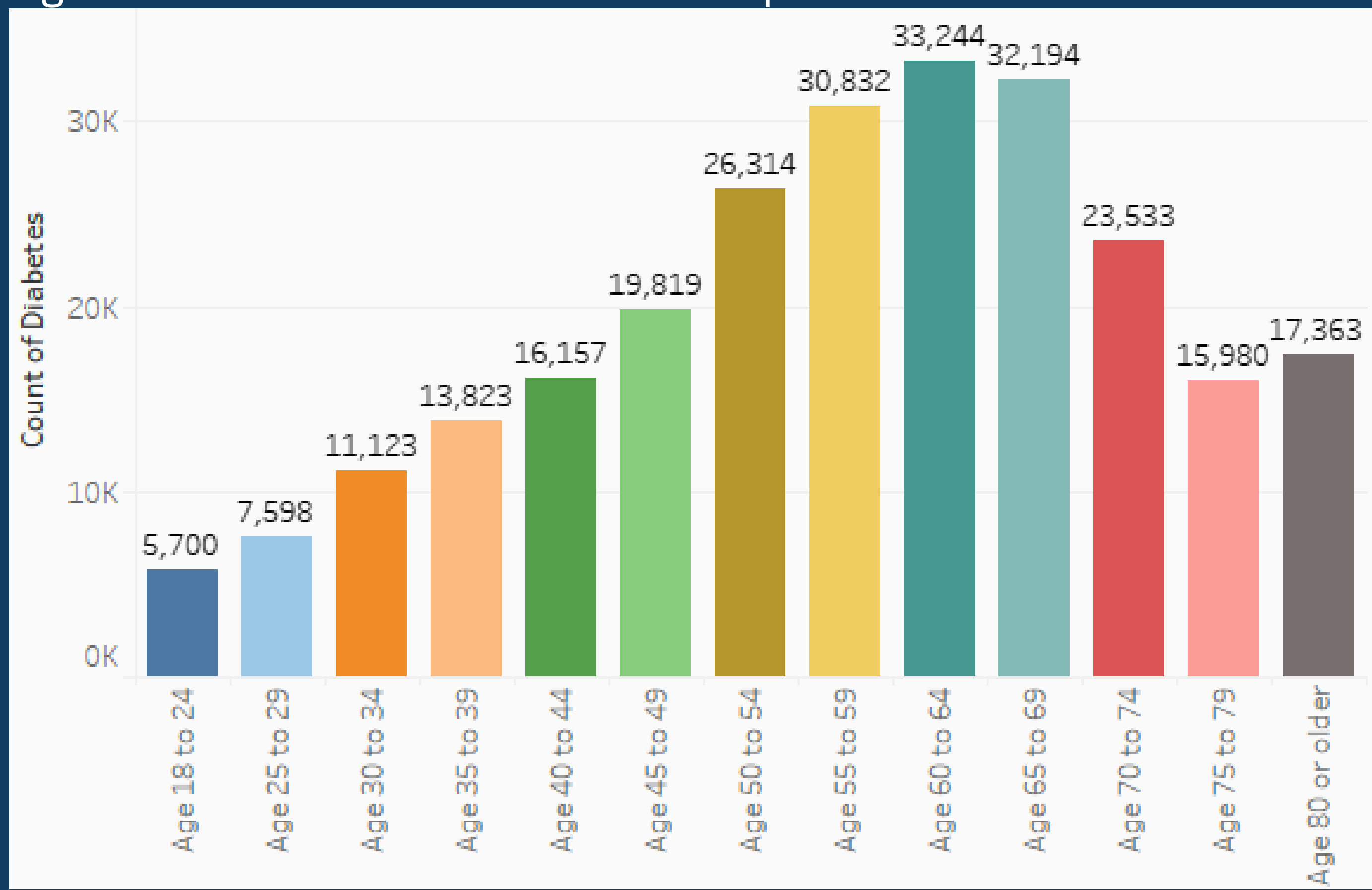




STATUS DISTRIBUTION



Age-Related Diabetes Prevalence Graph





HEALTH PROBLEMS VS DIABETES

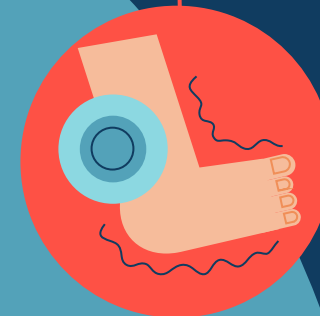
CHOLESTEROL

STROKE

**BLOOD
PRESSURE**

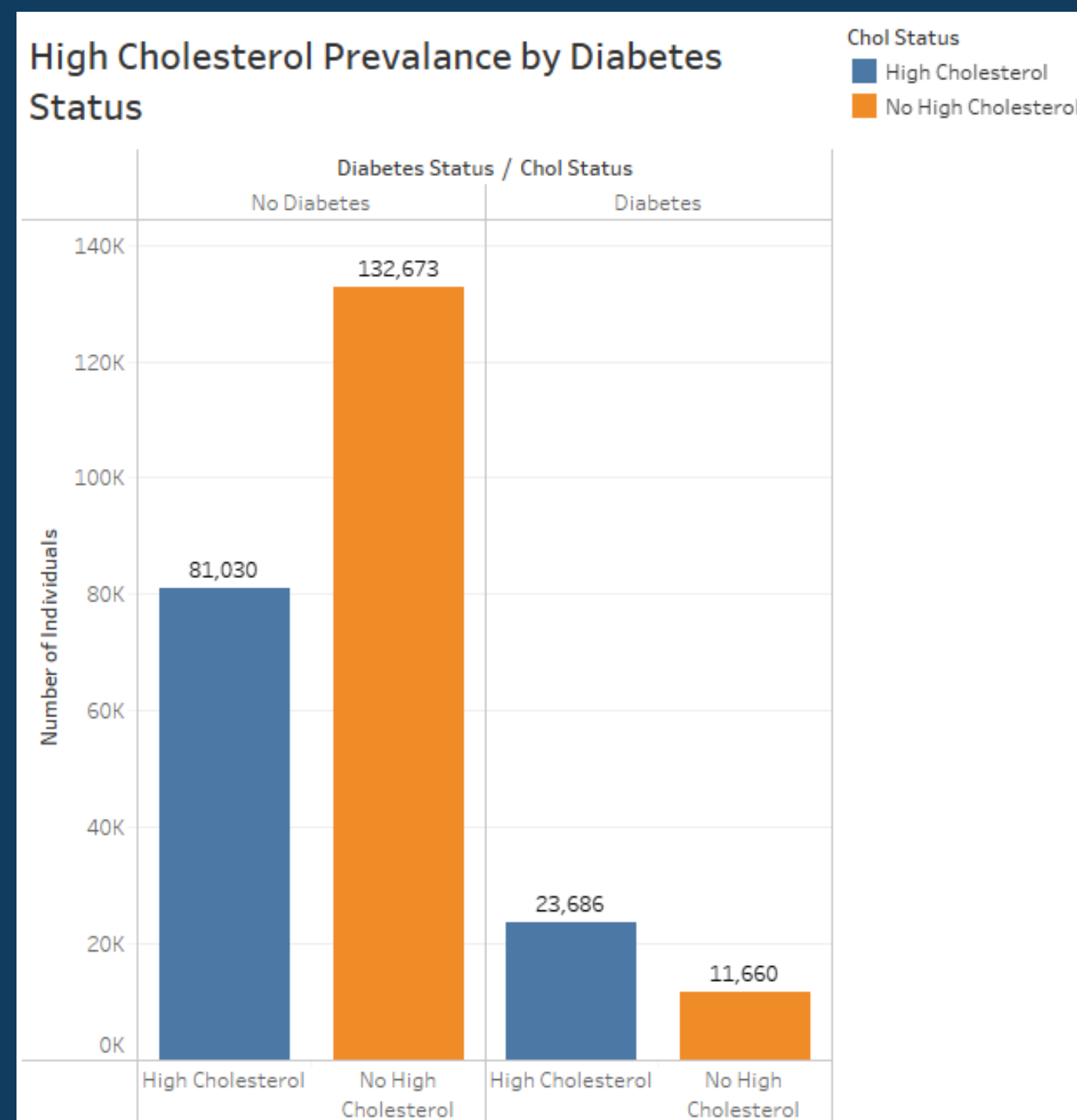
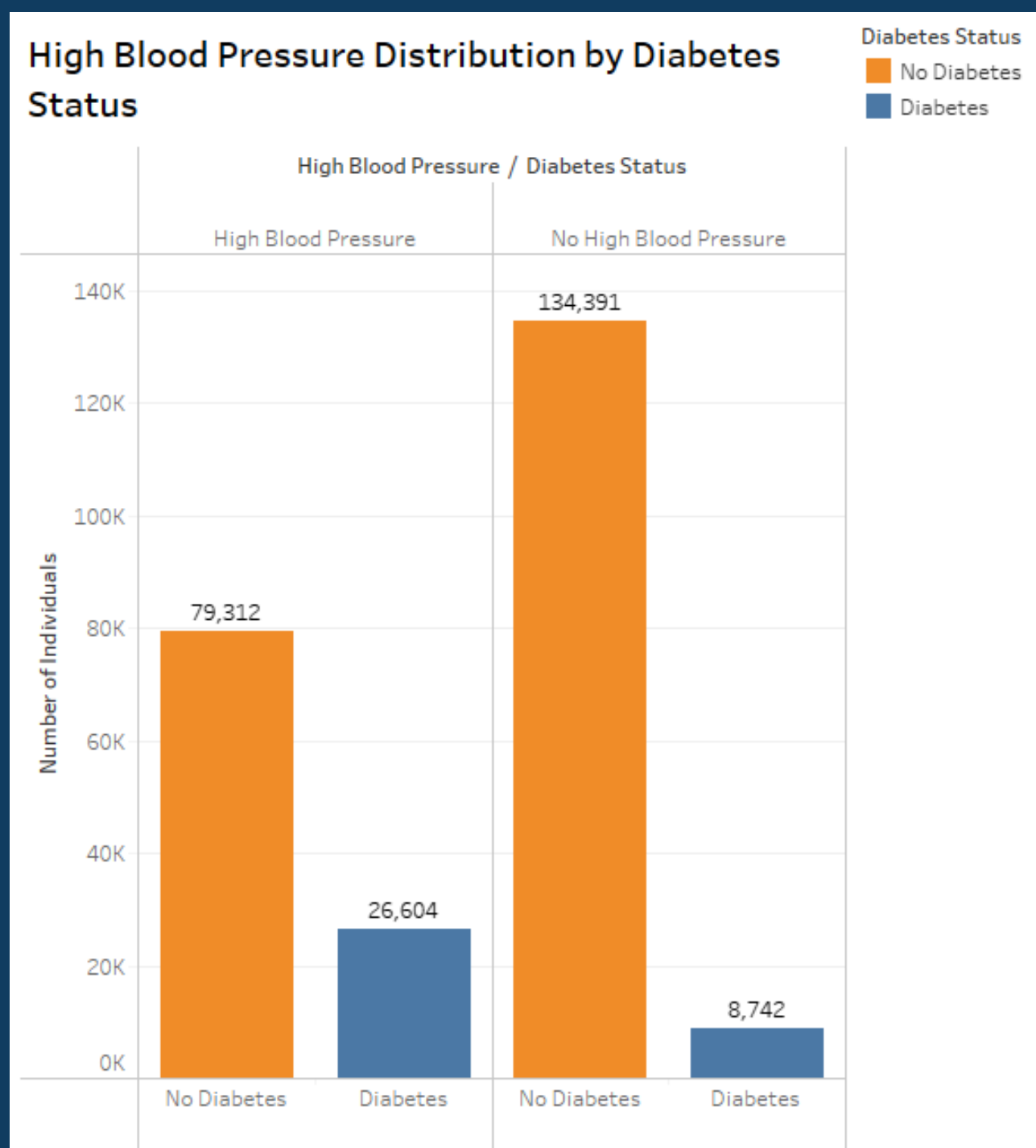
**LOW BMI VS
HIGH BMI**

**HEART
DISEASE**





DIABETES, BLOOD PRESSURE, AND CHOLESTEROL: CONNECTING THE DOTS

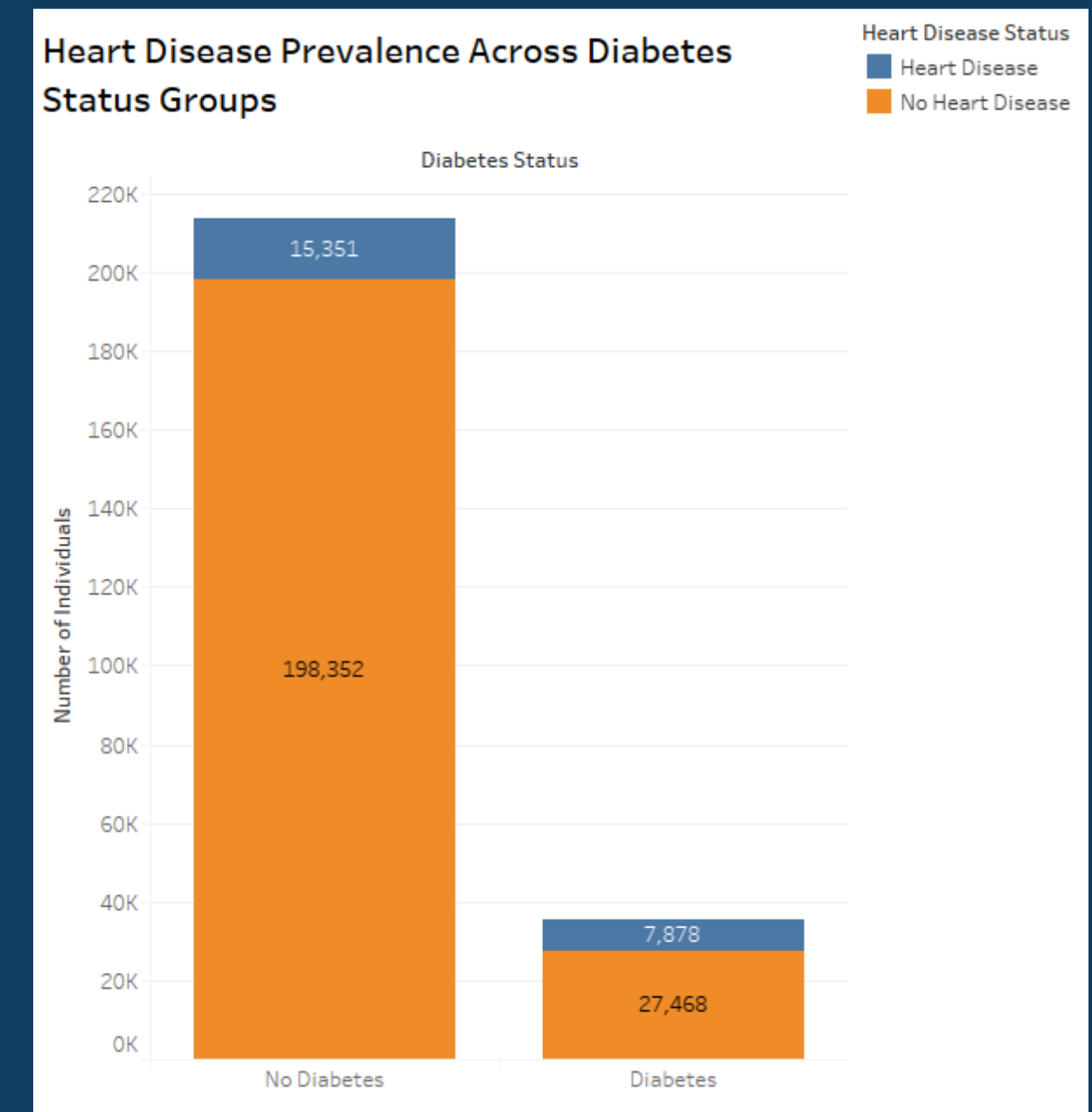
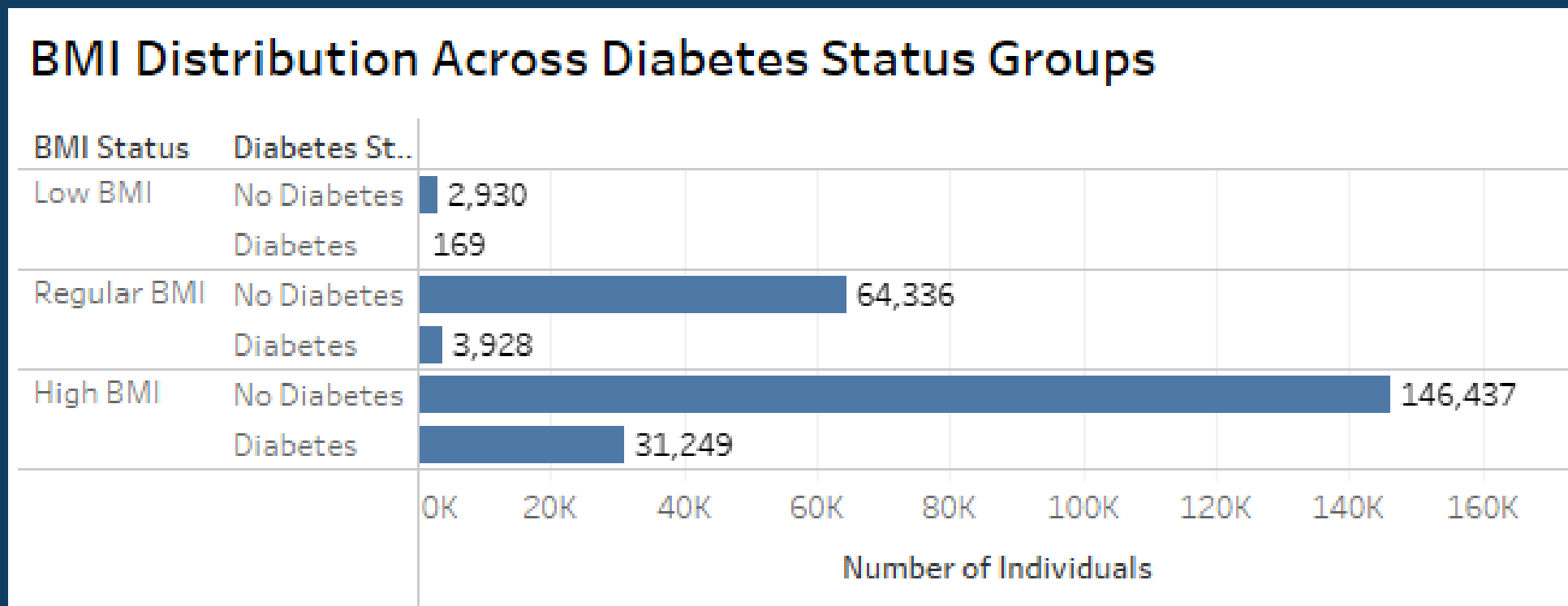


- 75% of diabetic patients have high blood pressure vs. 37% without diabetes
- 67% of diabetic patients have high cholesterol vs. 38% without diabetes
- Diabetes significantly increases risk of both cardiovascular conditions





DIABETES, WEIGHT, AND HEART HEALTH: CRITICAL CONNECTIONS

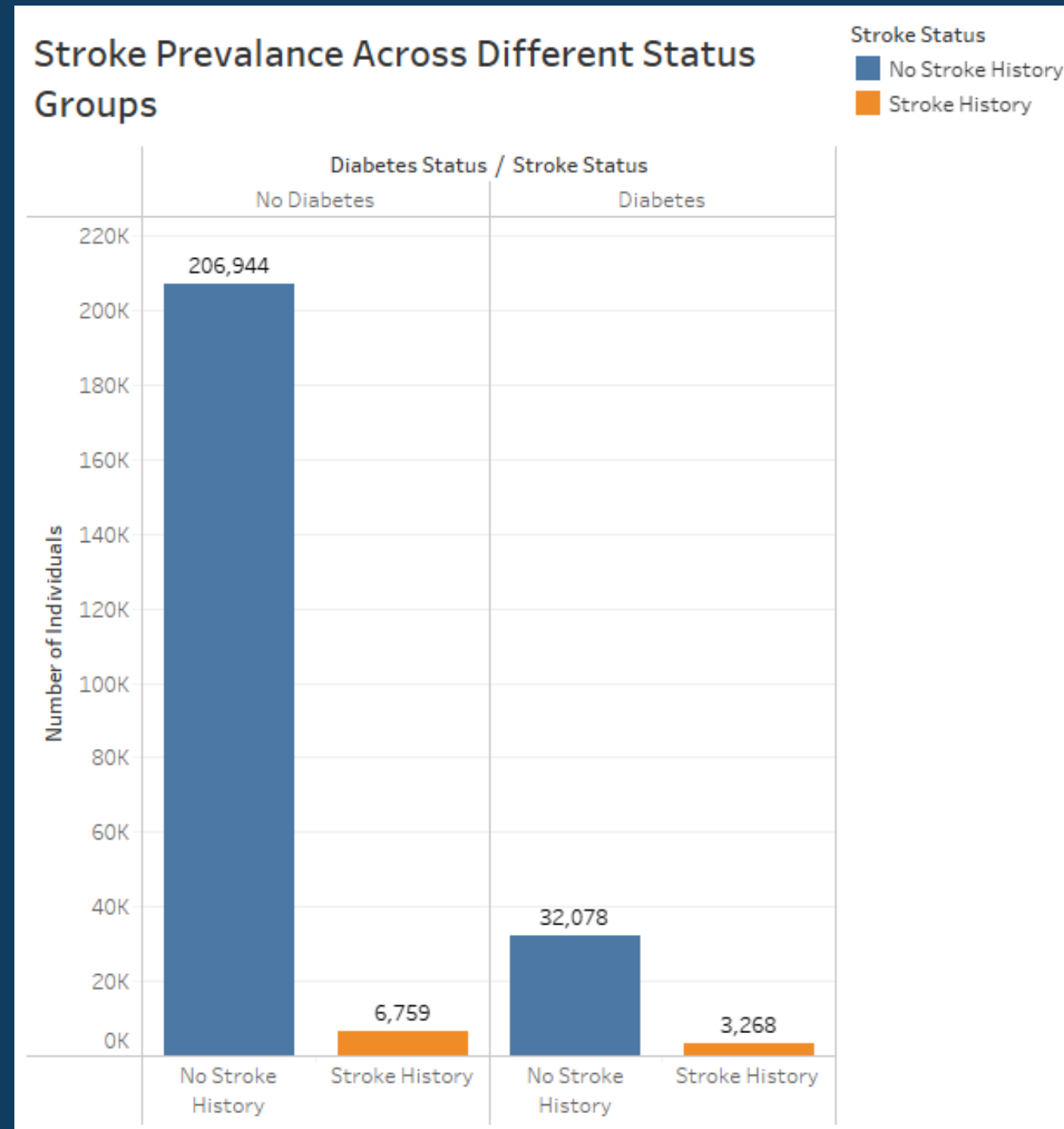


- 88% of diabetic patients have high BMI vs. 69% without diabetes
- Heart disease affects 22% of diabetic patients vs. only 7% of non-diabetics
- Weight management and cardiovascular screening crucial for diabetes care





STROKE RISK AND DIABETES: A MORE SUBTLE RELATIONSHIP

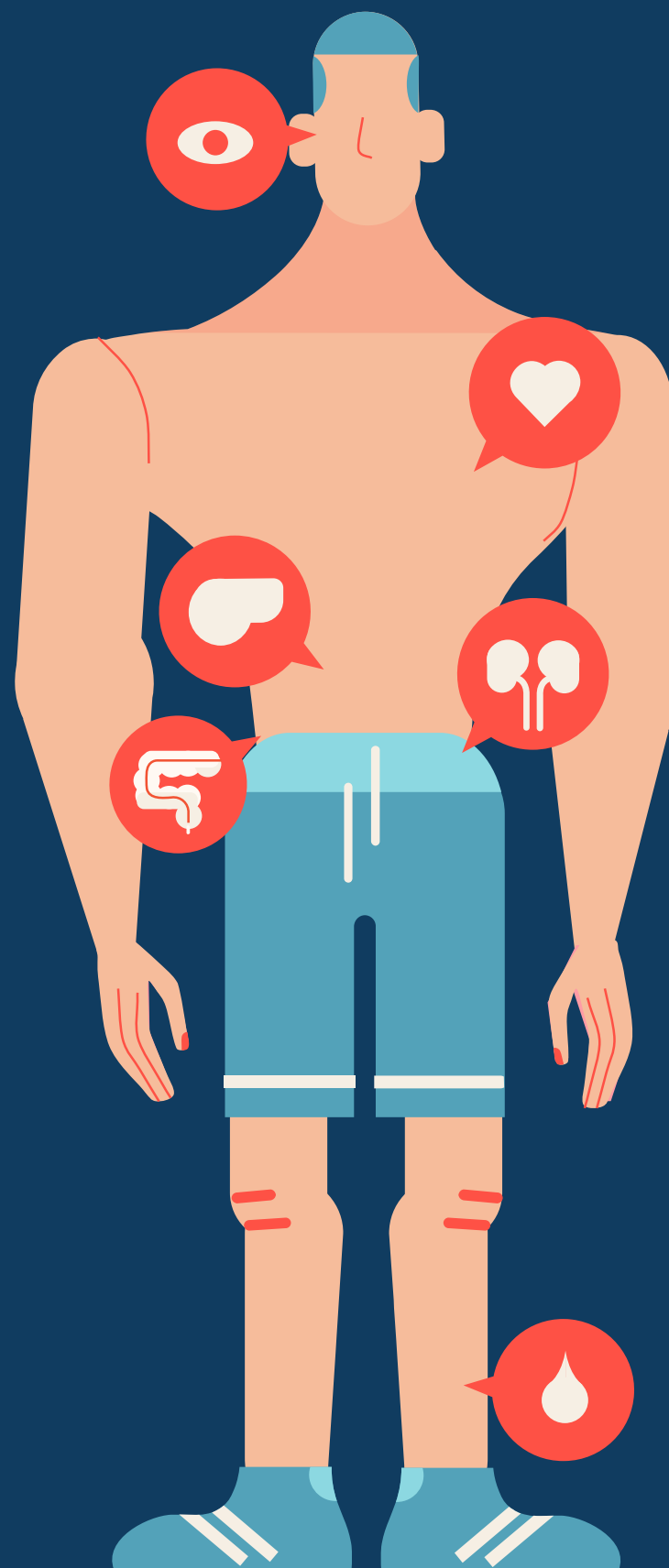


- Stroke history prevalence increases modestly with diabetes status
- 3% of non-diabetics vs. 9% of diabetics have stroke history
- Less dramatic association compared to other cardiovascular risk factors





LIFESTYLE FACTOR

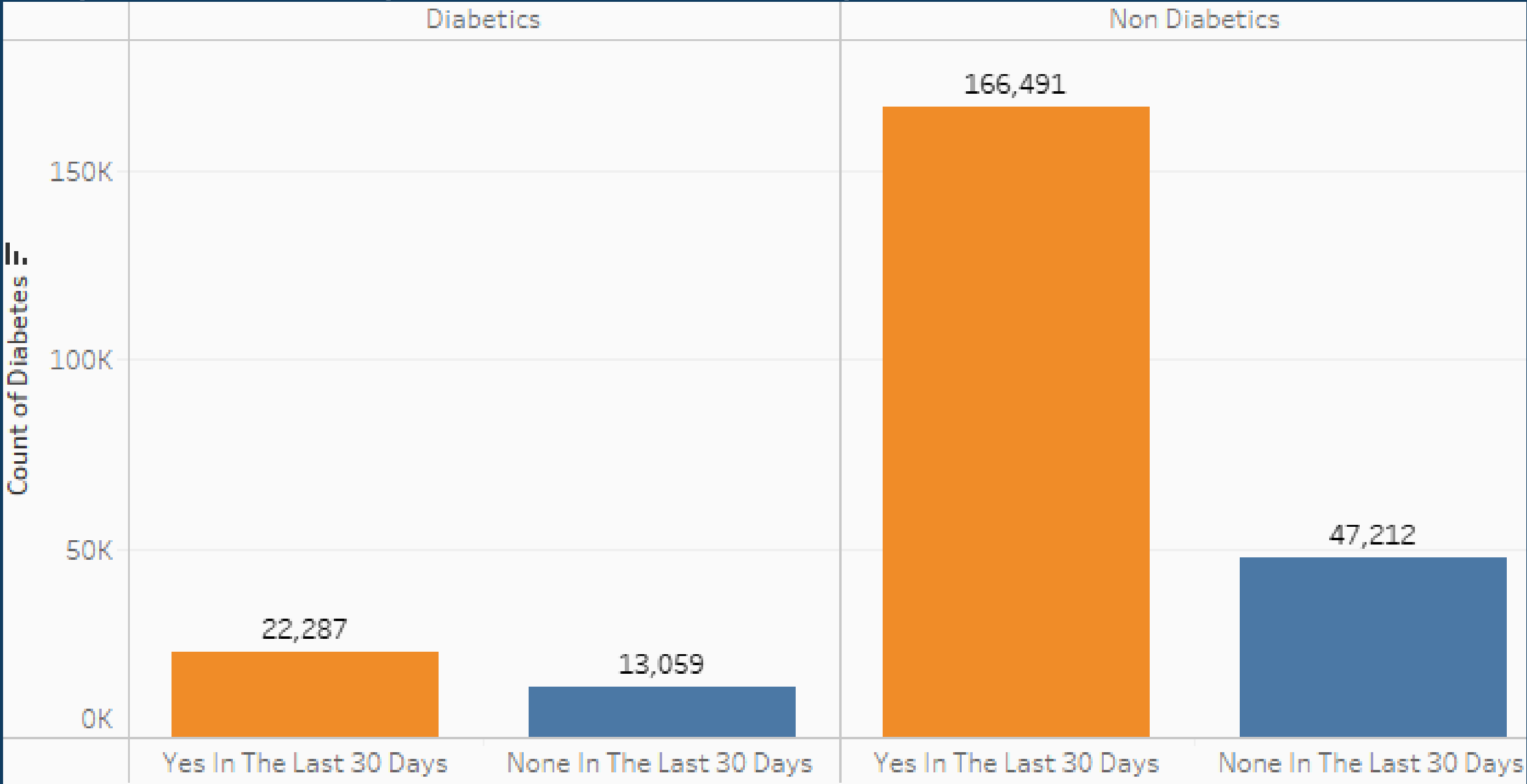




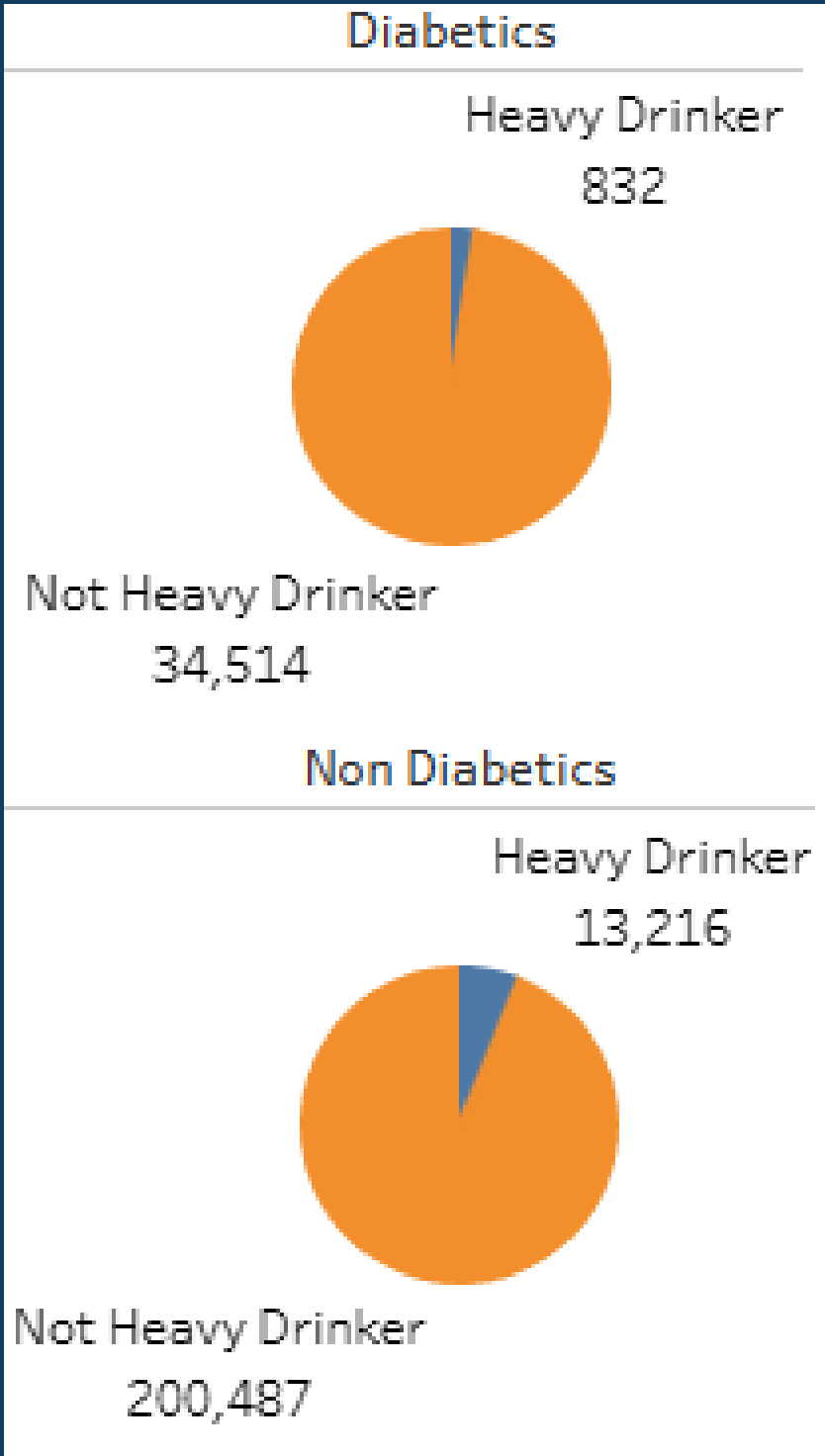
EFFECTS OF LIFESTYLE



Physical Activity in the Last 30 Days:



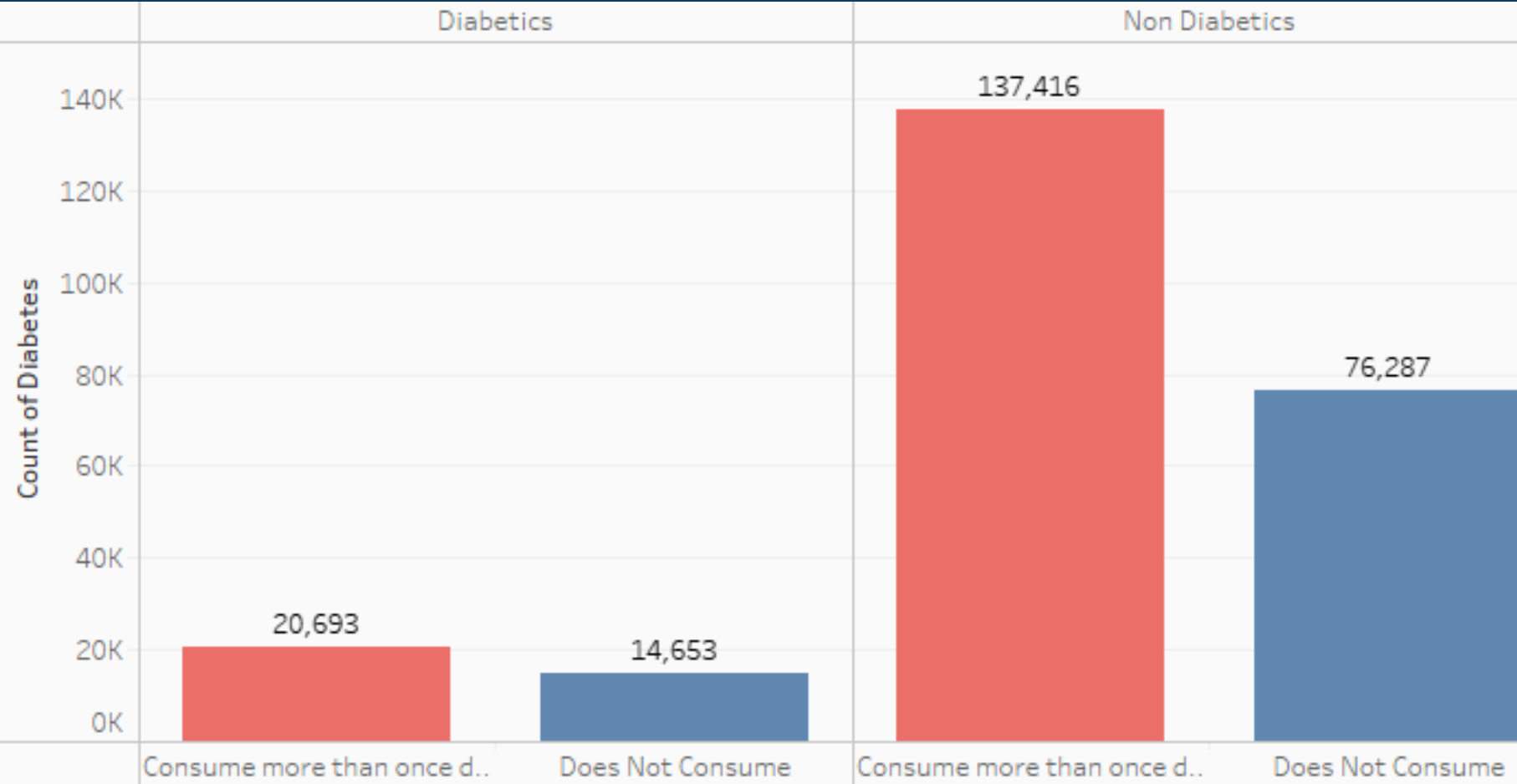
Alcohol Consumption Patterns:
Diabetics vs. Non-Diabetics



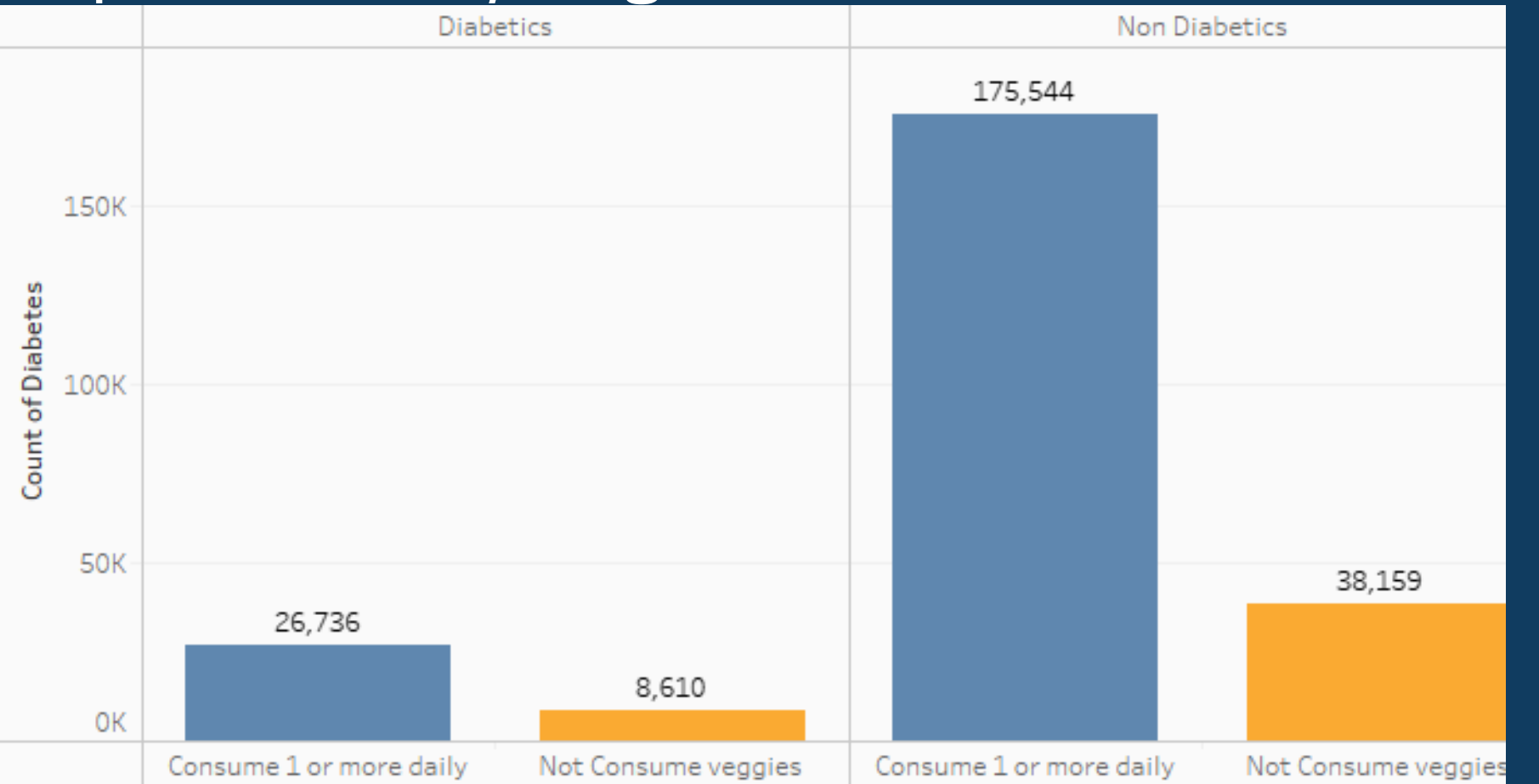


EFFECTS OF EATING HABITS

Impact of Daily Fruit Intake on Diabetes



Impact of Daily Vegetable Intake on Diabetes





RECOMMENDATIONS



Physical Activity

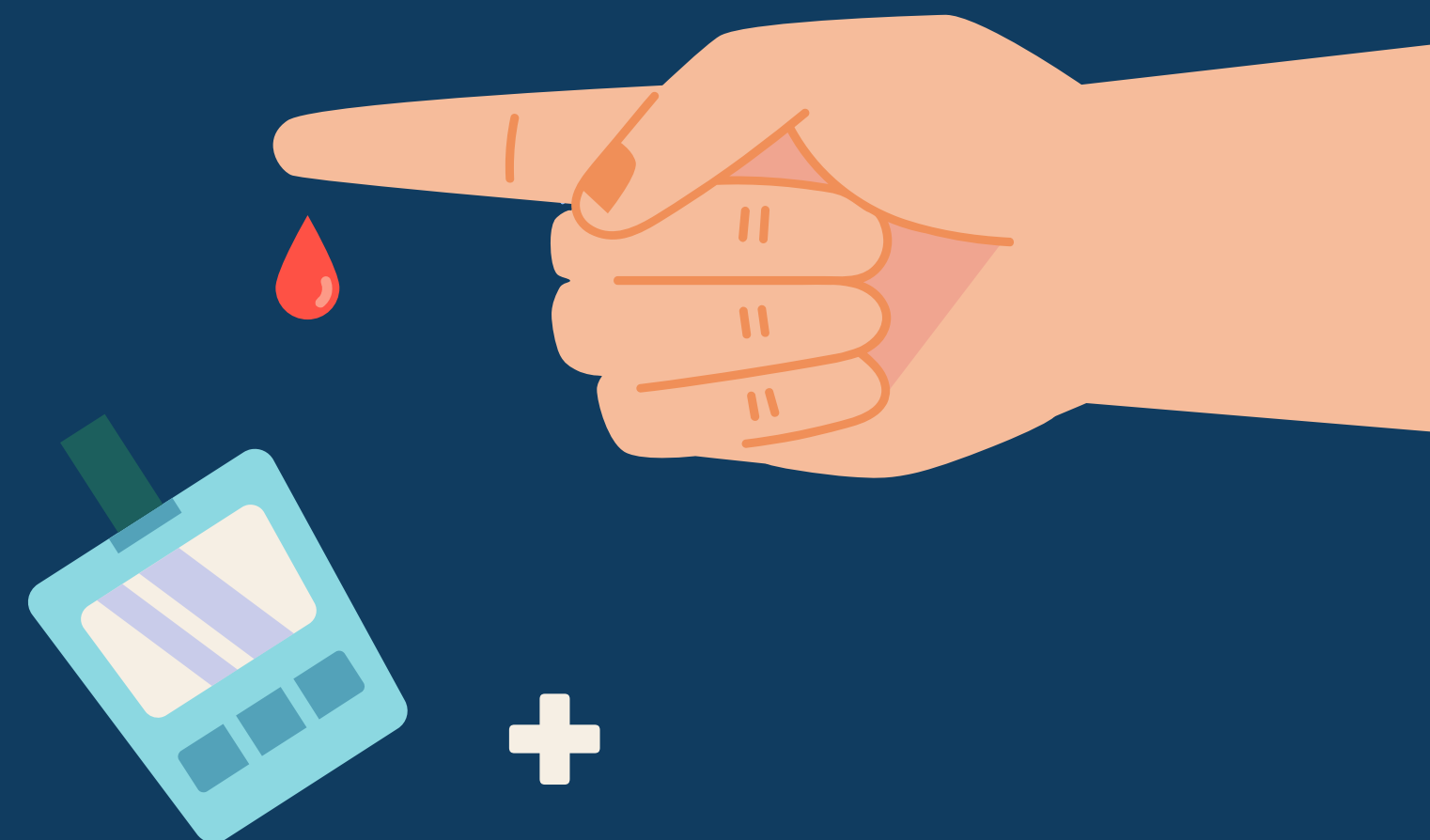
- Engage in regular exercise

Dietary Improvements

- Eat more fruits and vegetables
- Be conscious of foods that highly affect sugar levels

Diabetes Awareness in Communities

- Recommending regular doctor check-ups
- Spreading awareness about diabetes through community outreach



NEXT STEPS & REFLECTIONS



Data Expansion

- Include more features/fields (e.g., sleep duration, meal frequency, familial history of diabetes)
- Deeper analysis and stronger conclusions

Impact Potential

- Driving meaningful and inclusive change
- Guide future initiatives





FINDINGS/CONCLUSION



High Blood Pressure (HBP):

Diabetes: 79,312 cases

Pre-diabetes: 26,604 cases

Non-diabetic: 2,913 cases

High Cholesterol:

Diabetes: 81,030 cases

Pre-diabetes: 23,686 cases

Non-diabetic: 2,875 cases

High BMI:*

Diabetes: 31,249 cases

Pre-diabetes: 3,914 cases

Non-diabetic: 146,437 cases

**Higher count due to larger non-diabetic population, but lower proportionally*



SOURCES

- [Kaggle Diabetes Health Indicators Dataset](#)
- [BRFSS 2015 Codebook](#)
- [What is Diabetes?](#)





THANKS!

Do you have any questions?

