

Does Diabetes Correlate With Affluence?

Bill Alive

Dataset

World Development Indicators

Explore country development indicators from around the world



Source: <https://www.kaggle.com/datasets/kaggle/world-development-indicators?select=Indicators.csv>

Motivation

According to the CDC, the overwhelming majority of diabetes cases (Type 2) can be “prevented or delayed with healthy lifestyle changes”. Yet in the United States:

- Diabetes is the **7th** leading cause of **death**.
- About **1 in 10** people have diabetes (37 million), and **more than 1 in 3 adults** (96 million) have prediabetes.
- And these numbers are **growing**. Diabetes diagnoses for adults have more than **doubled** in the last two decades.

Is this an inevitable risk of affluence? Or can other wealthy countries give hints of how we might reduce this threat? On the other hand, what if poorer countries have high rates too?

Research Question

Do higher income countries tend to have higher rates of diabetes?

If they do, the problem seems obvious: more wealth means easier access to food and less need for physical activity, both of which increase risk.

But what if some poorer countries have rates as high (or higher!) than the US? And what if some other wealthy countries have much lower rates?



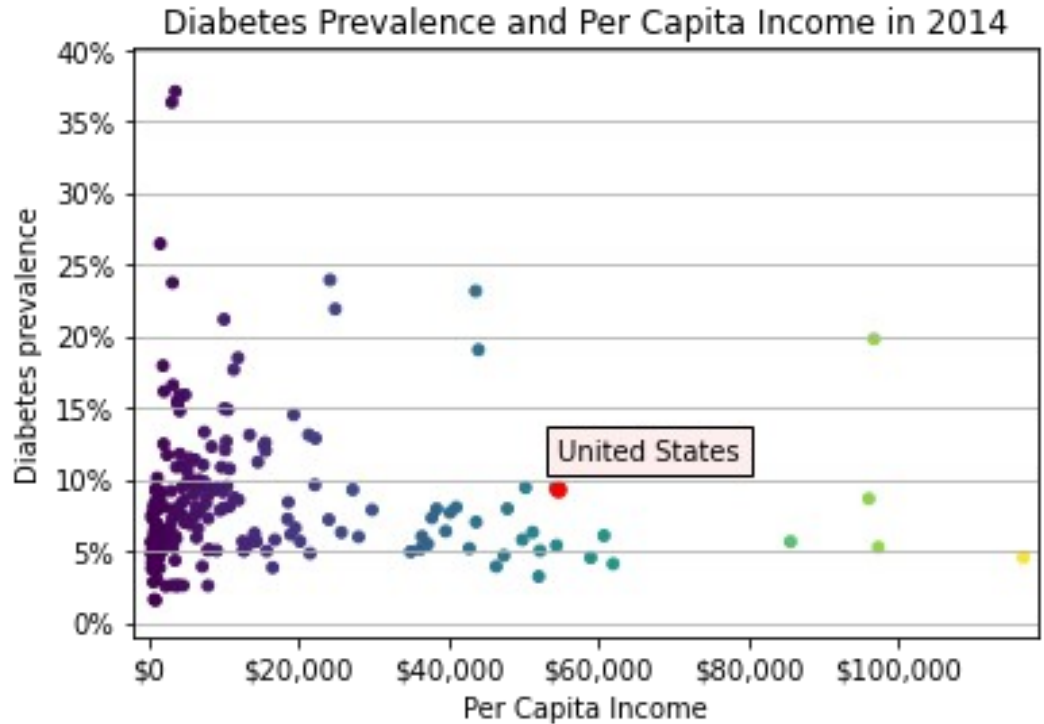
Source: [CDC](#)

Findings: No Clear Correlation

In this scatter plot, each point shows a country's **diabetes prevalence** compared with its **per capita income** in 2014.

To my surprise, wealth and diabetes do **not** seem to correlate.

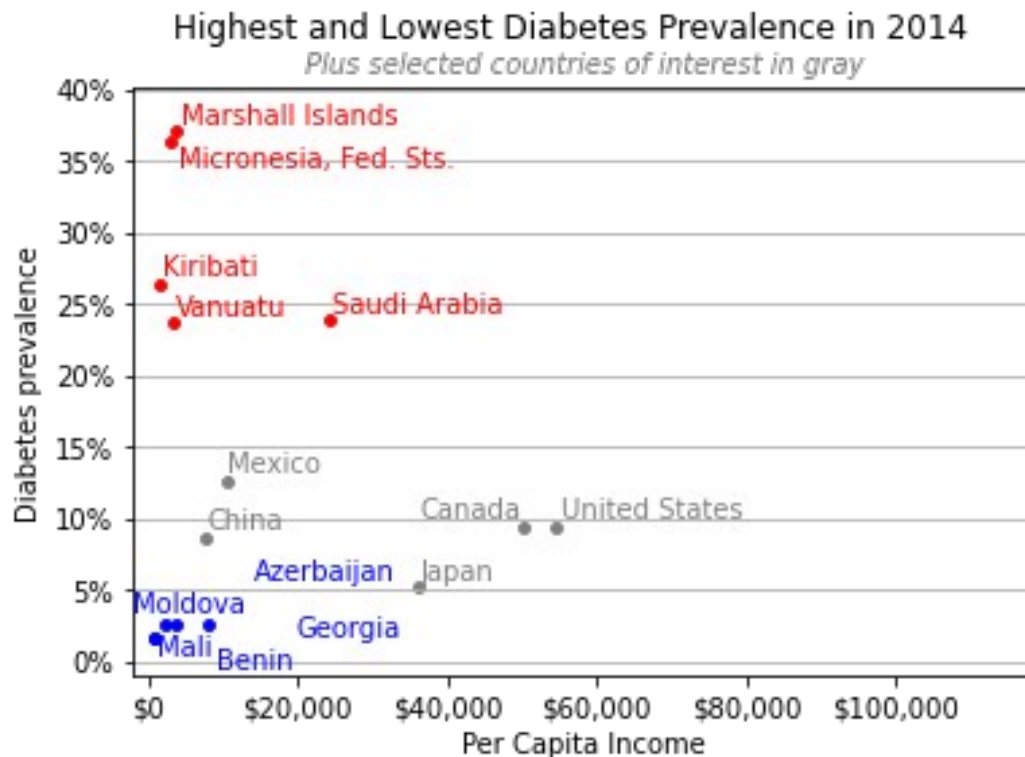
We see many lower income countries with higher diabetes rates than the US. We also see higher income countries with some of the lowest diabetes rates.



Findings: High vs. Low Diabetes Rates

Let's look more closely at the extreme highs and lows of both diabetes prevalence and per capita income. For comparison, we'll also include a few countries of interest.

Here, we see that, except for Saudi Arabia, the countries with **both the highest and the lowest** rates of diabetes have **low per capita income: < \$8,000/year**. Low income does not seem to affect the risk of diabetes.



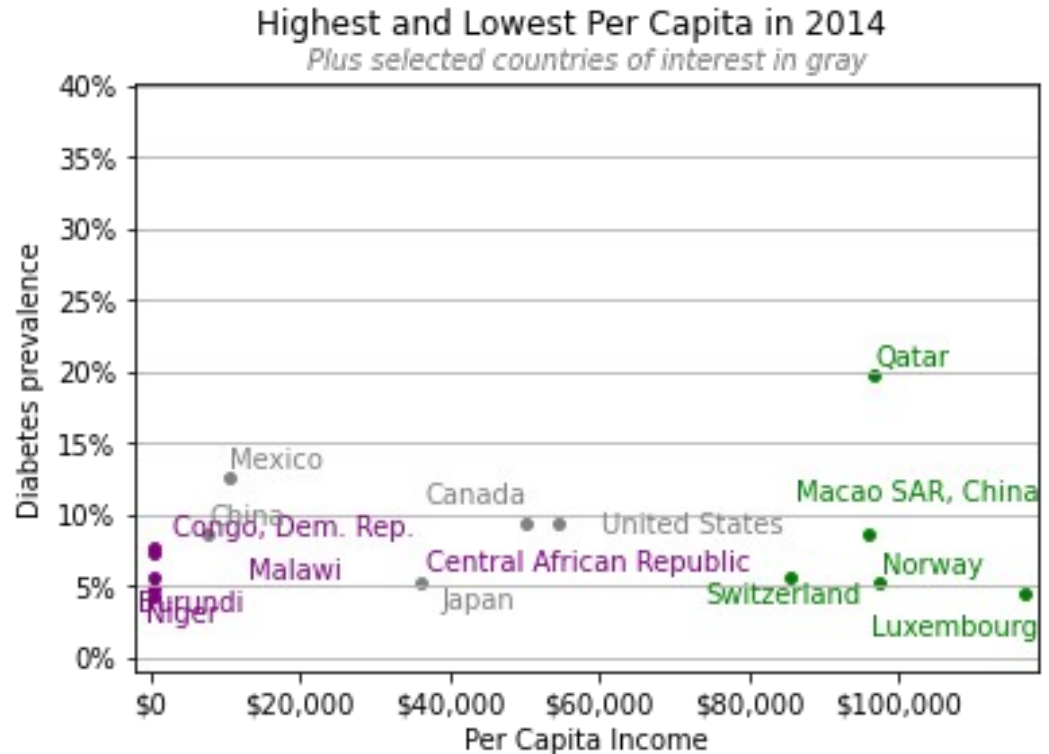
Note: For full data tables, see notebook PDF.

Findings: High vs. Low Per Capita Income

Now let's look at countries with the highest and lowest per capita incomes.

Once again, we see no obvious correlation. All the **lowest income** countries have diabetes rates **lower than 9%**, but so do all the **highest income** countries, except Qatar.

We conclude that per capita income simply **does not seem to correlate** with diabetes.



Acknowledgements

This project is my own work. I did not have access to feedback or other assistance.

References

Facts about diabetes in the US are sourced from the CDC, with links in the slides.

All chart data is from 2014, because this was the only year in the World Development Indicators dataset for which diabetes prevalence data was available.

For the full tables of the data in these charts, see the accompanying notebook PDF.

The analysis is my own work.