Indicators of Heart Diseases

We propose to conduct an analysis utilizing a comprehensive dataset encompassing various Indicators for Heart Diseases.

The dataset includes information on individuals' state of residence, *gender*, general health status, physical and mental health days, healthcare utilization such as last checkup time, lifestyle factors like physical activity and sleep hours, as well as *medical history* including occurrences of heart attacks, strokes, asthma, skin cancer, COPD, depressive disorders, kidney disease, arthritis, and diabetes, among others. Additionally, the dataset contains data on sensory impairments, difficulties with daily activities, smoking and e-cigarette usage, chest scans, race/ethnicity, age, height, weight, BMI, alcohol consumption, HIV testing, flu vaccination, pneumococcal vaccination, tetanus vaccination, high-risk status, and COVID-19 positivity.

Our analysis aims to investigate various ***null hypotheses***, including the relationship between Health factors and possibilities of getting **heart diseases**, the impact of lifestyle choices on disease prevalence, and disparities in healthcare access and utilization among different population groups. We will employ appropriate ***statistical tests*** and ***regression analyses*** to test these hypotheses, providing valuable insights into factors influencing health outcomes and informing public health interventions and policy decisions.

These are our hypotheses questions that will help us investigate the relation between heart diseases and other health problems:

1. Is there a significant difference in the mean BMI between individuals who have had a heart attack and those who haven't?
2. Is there a significant difference in the mean of Physical Health Days between individuals who have had a heart attack and those who haven't?
3. Is there a significant difference in the mean of Sleeping Hours between individuals who have had a heart attack and those who haven't?
4. Is there a significant difference in the mean of Mental Health Days between individuals who have had a heart attack and those who haven't?

These questions aim to explore various relationships and associations within the dataset, providing insights into health outcomes and potential factors influencing them.

Team members and contributions:

Mohamed Ibrahim	*22-101058*
Mohamed Mostafa	*22-101203*
Mohamed Karim	*22-101273*
Seif El Islam	*22-101172*
Abd Allah Moussa	*22-101114*