**Reducing Stroke Risk Before the Age of 65**

**A graph of a number of people with different colored numbers

AI-generated content may be incorrect.**

**Did you know that nearly 90% of stroke patients under the age of 65 are married?** Of course, that doesn’t mean marriage causes stroke, it’s a statistical reminder that correlation is not necessarily causation.

In healthcare, **age** **is one of the** **strongest predictors** **of** **stroke**, but while we cannot stop time, we can **prepare for the journey** into our golden years.

**Stroke is one of the leading cause of death in the U.S.**, and its risk rises steeply with age. But what happens before the age of 65? That’s the focus of this project.

**Project Goals**

Our goal is to identify the **top risk factors** **among patients under 65,** examine how these risks develop over time, and suggest **screening recommendations** that can help clinicians and public health leaders help patients under 65 **reduce their risk of stroke**.

By focusing on patients **under the age of 65**, we can temper down the dominance of age and gain clearer insight into **manageable and preventable** **risk factors**.

**Dataset Summary**

The dataset includes deidentified patient records with features:

* Age and Gender
* Medical history (hypertension, heart disease, BMI, and glucose level)
* Lifestyle factors (smoking, marriage history, work type, and residence type)

**Key Insights**

The top four medically alterable risk factors are heart disease, hypertension, diabetes, and smoking.

**Heart Disease** – patients with heart disease had a stroke rate **of 13.54%**, which is the **highest** among all risk groups. Patients with heart disease only represent **2.25%** of the overall population but it accounts for 14.44% of all stroke cases. Its prevalence **increases sixfold by age 35-44**.

**Hypertension** – patients with hypertension had a stroke rate of **5.97%** and can appear at **any age**. Its prevalence increases sharply in young adulthood where there is an eleven fold jump in hypertensive cases by age **18-24**.

**Diabetes –** patients with diabetes face a **4.78%** stroke rate. It affects **1 in 5** patients by age **45-54**, rising to **1 in 4** by age **55-64**.

**Smoking History** – patients that smoke had a stroke rate of **3.79%.** Patients that formerly smoked had a stroke rate of **3.76%**, which is very similar to patients that continue to smoke. **1 in 4** patients had a **history of smoking** by age **18-24**.

**Recommendations**

* Hypertension and smoking risk assessment and prevention as early as age 18.
* Diabetes monitoring starting at age 25.
* Heart disease screening by age 35.

**Closing Statement**

**Stroke risk factors begin developing well before the age of 65**. By screening early for heart disease, hypertension, diabetes, and preventing smoking, we can help patients take action before these risks compound into preventable medical emergencies.