

# AN EPIDEMIOLOGICAL ASSESSMENT OF THE STROKE BURDEN IN HUNGARY USING DATA FROM THE GLOBAL BURDEN OF DISEASE STUDY (1990-2021)

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## OBJECTIVES

Stroke is a major public health problem in Hungary, being one of the leading causes of death and disability. The aim of this study is to investigate the epidemiological indicators of stroke in Hungary using data from the Global Burden of Disease Study.

## METHODS

For stroke, we examined prevalence and incidence data, Disability-Adjusted Life Years (DALYs), and Years Lived with Disability (YLDs) in Hungary between 1990 and 2021. The data were obtained from the Global Burden of Disease Study Institute for Health Metrics and Evaluation (GBD 2021, IHME) 2021 database. The analysis was conducted per 100,000 inhabitants, considering both sexes and all age groups.

## RESULTS

The epidemiological indicators are summarized in *Table 1*. In 1990, the prevalence of stroke in Hungary was 2.16%, which was 2,095.38 cases per 100,000 inhabitants. By 2021, the prevalence decreased to 1.75% (1,689.66 per 100,000). The age-standardised prevalence also decreased steadily over the same period (1990: 1.61%, 1,543.93 per 100,000; 2021: 1.00%, 936.66 per 100,000) (*Figure 1*). The incidence also fell, from 0.09% (324.02 per 100,000) in 1990 to 0.06% (230.69 per 100,000) in 2021. In 1990, the DALY was 5,028.05 per 100,000 people, which was 10.71% of the total domestic DALY. By 2021, this figure had dropped significantly to 2,322.50 per 100,000 (5.04% of total domestic DALY) (*Figure 2*). YLDs also declined, from 38,873.01 years (2.90% of total domestic YLDs) in 1990 to 29,509.62 years (2.16% of total domestic YLDs) in 2021 (*Figure 3*).

## CONCLUSIONS

The analysis indicates that stroke remains a significant public health challenge in Hungary, despite the observed positive trends. The decreasing prevalence and incidence rates, along with the reduced burden of disease, highlight the importance of continuously improving preventive measures and treatment protocols. These efforts are essential to further reduce the impact of stroke and enhance the population's quality of life.

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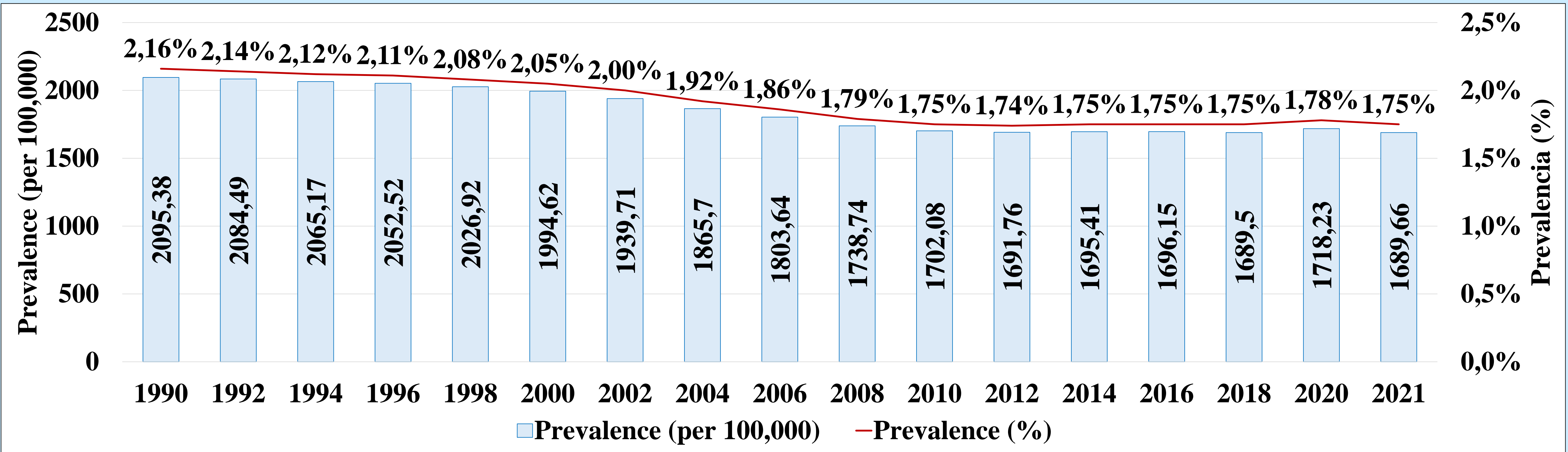
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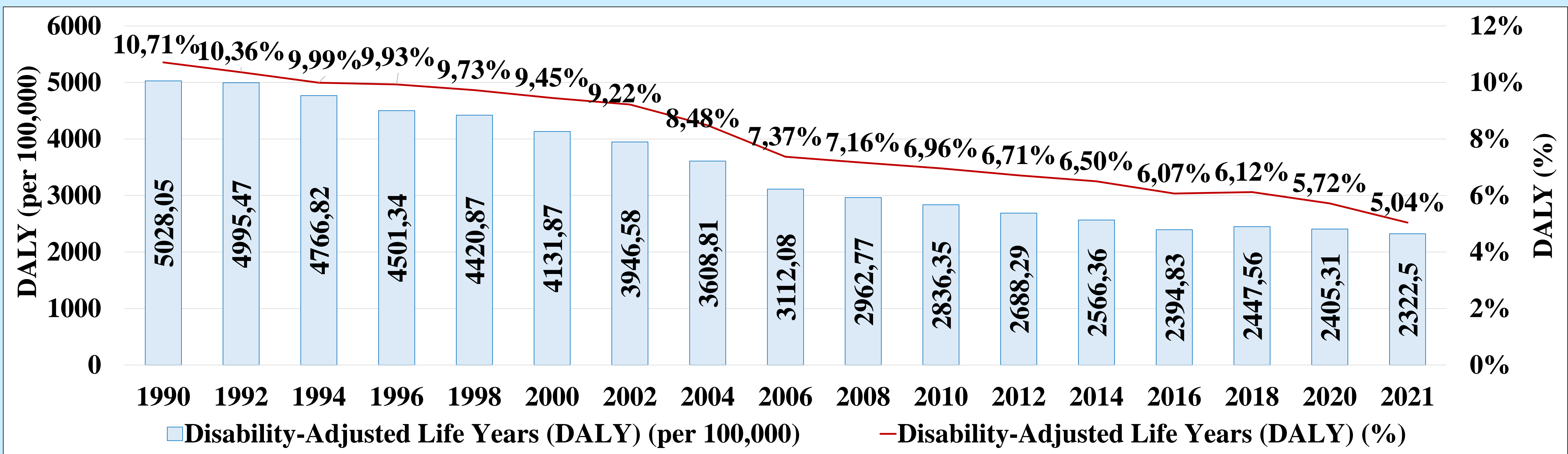


**Table 1. Changes in Stroke-Related Epidemiological Indicators by Sex in Hungary, 1990–2021**

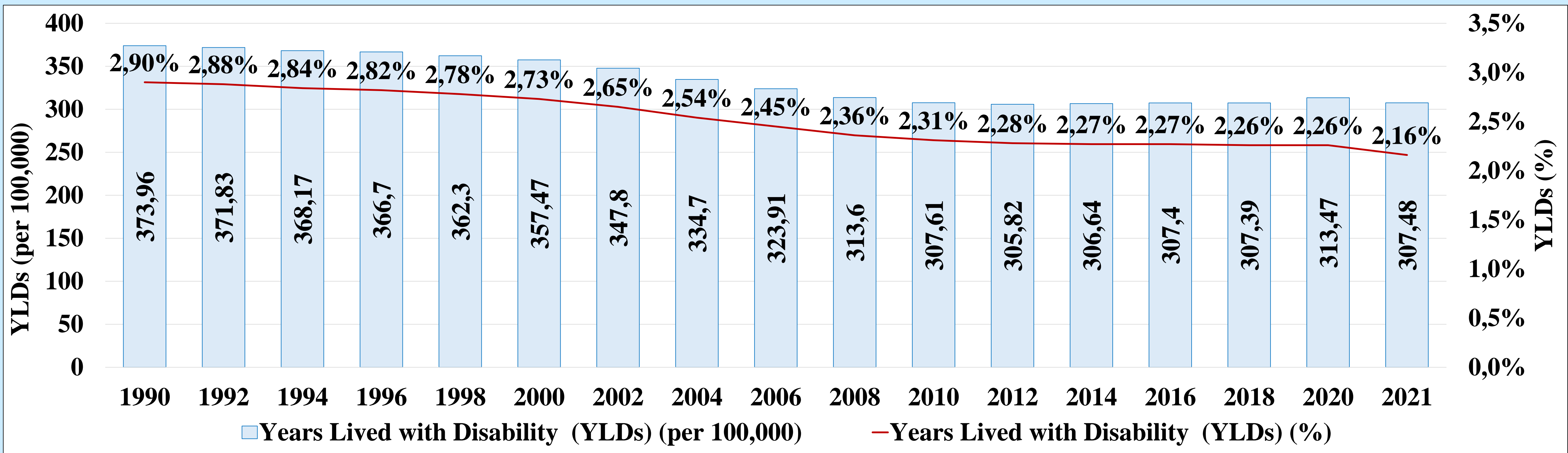
|                             | MALE        |      |             |      | FEMALE      |       |             |      |
|-----------------------------|-------------|------|-------------|------|-------------|-------|-------------|------|
|                             | 1990        |      | 2021        |      | 1990        |       | 2021        |      |
|                             | per 100.000 | %    | per 100.000 | %    | per 100.000 | %     | per 100.000 | %    |
| Prevalence                  | 2,152.4     | 2.23 | 1,652.57    | 1.73 | 2,042.63    | 2.09  | 1,723.46    | 1.76 |
| Age standardized prevalence | 1,777.67    | 1.86 | 1,018.04    | 1.09 | 1,386.66    | 1.43  | 893.10      | 0.94 |
| Incidence                   | 325.40      | 0.1  | 215.28      | 0.06 | 322.74      | 0.09  | 244.72      | 0.06 |
| DALYs                       | 5,212.44    | 9.7  | 2,408.61    | 4.83 | 4,857.50    | 11.95 | 2,244.05    | 5.26 |
| YLDs                        | 361.88      | 3.11 | 283.46      | 2.28 | 385.13      | 2.73  | 283.46      | 2.07 |



**Figure 1. Trends in stroke prevalence between 1990 and 2021 in Hungary**



**Figure 2. Trends in Disability-Adjusted Life Years (DALYs) between 1990 and 2021 in Hungary**



**Figure 3. Trends in Years Lived with Disability (YLDs) between 1990 and 2021 in Hungary**