

Incidence, prevalence, and burden of traumatic brain injury in the European Under-5 population between 1990-2019: A comparative analysis based on the Global Burden of Disease study 2019.

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Background

Traumatic brain injury (TBI) is a major public health and socio-economic problem and its burden is increasing significantly worldwide. Lifelong disability is common after injury, and accurate epidemiologic data especially in children is essential for estimating the future effects and for planning targeted policies and healthcare interventions. Here, we present an analysis of the incidence, prevalence, and years lived with disability (YLDs) for TBI in the Under-5 population in Europe and describe its changes between 1990 and 2019.

Methods

European region estimates on TBI for the Under-5 population were taken from the Global Burden of Diseases, Injuries, and Risk Factors (GBD) Study 2019. We evaluated changes between 1990 and 2019 in counts, rates and percent by sex and explored the leading causes of TBI.

Results

In 2019, there were 138 thousand (95% uncertainty interval [UI] 102 – 186) new cases of TBI, ~30% of which were moderate or severe TBI. Central Europe had the highest incidence rate (360 [95%UI 263 – 487] cases per 100,000), and Eastern Europe had the lowest (230 [95%UI 169 – 303] cases per 100,000) (Figure 1). The incidence rate was higher in males, and the leading cause was falls. Although, overall, the incidence of TBI in children under-5-years decreased from 1990 to 2019 (-7.04% [95%UI 0.41 – -12.86%]), an increase of 5.7% (95%UI 2.22-9.48) was observed in the last decade (Figure 2).

Conclusion

TBI cases have decreased in the European Under-5 population. Nevertheless, an increase in cases has occurred in the last decade specially in moderate/severe cases.

Key messages

- The burden of TBI in the U-5 population is quite relevant in the European region.
- In U-5s an increase in TBI cases during the last decade has been observed.

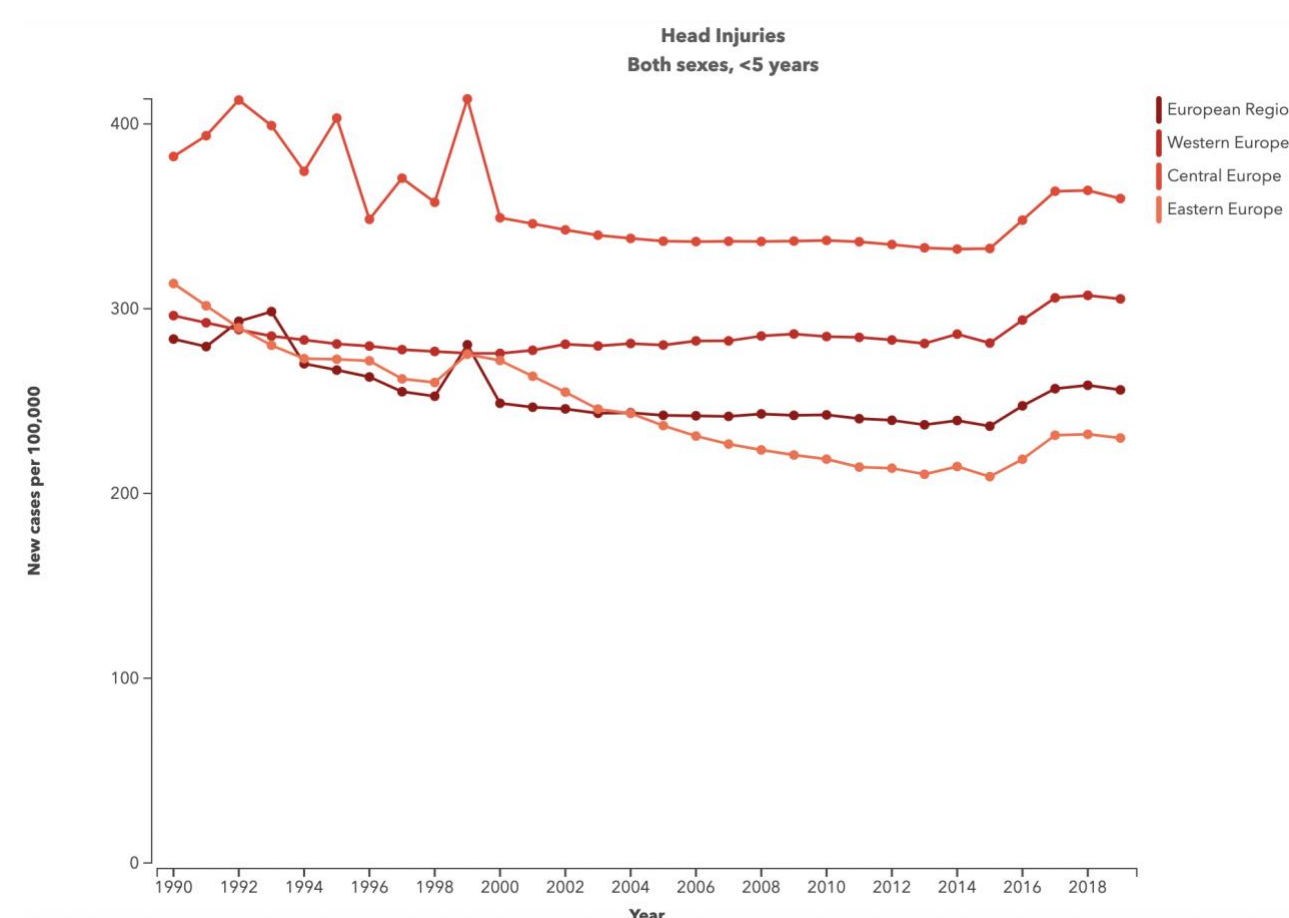


Figure 2. Incidence rates per 100,000 inhabitants in Europe and European subregions for traumatic brain injury under 5 years old population in both sexes from 1990 to 2019

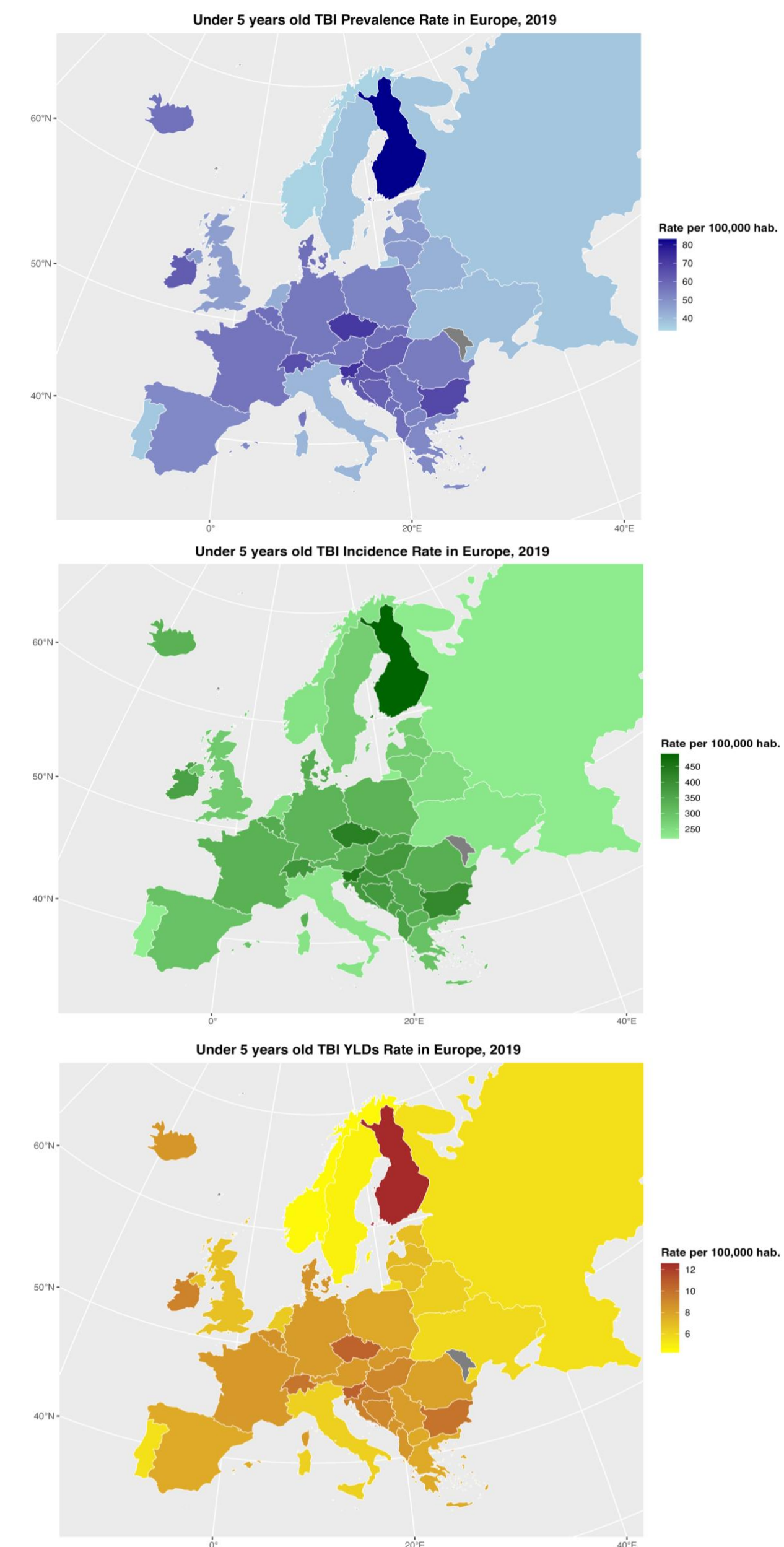


Figure 1. Prevalence, incidence and years lived with disability rates for traumatic brain injury in European countries under 5 years old population in 2019.