and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of health examination surveys and epidemiological studies with.

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National, regional, and global trends in fasting plasma glucose and diabetes prevalence since 1980: systematic analysis of health examination surveys and epidemiological studies with 370 country-years and 2·7 million participants

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Summary

Background

Data for trends in glycaemia and diabetes prevalence are needed to understand the effects of diet and lifestyle within populations, assess the performance of interventions, and plan health services. No consistent and comparable global analysis of trends has been done. We estimated trends and their uncertainties in mean fasting plasma glucose

(FPG) and diabetes prevalence for adults aged 25 years and older in 199 countries and territories.

Methods

We obtained data from health examination surveys and epidemiological studies (370 country-years and 2·7 million participants). We converted systematically between different glycaemic metrics. For each sex, we used a Bayesian hierarchical model to estimate mean FPG and its uncertainty by age, country, and year, accounting for whether a study was nationally, subnationally, or community representative.

Findings

In 2008, global age-standardised mean FPG was 5·50 mmol/L (95% uncertainty interval 5·37–5·63) for men and 5·42 mmol/L (5·29–5·54) for women, having risen by 0·07 mmol/L and 0·09 mmol/L per decade, respectively. Age-standardised adult diabetes prevalence was 9·8% (8·6–11·2) in men and 9·2% (8·0–10·5) in women in 2008, up from 8·3% (6·5–10·4) and 7·5% (5·8–9·6) in 1980. The number of people with diabetes increased from 153 (127–182) million in 1980, to 347 (314–382) million in 2008. We recorded almost no change in mean FPG in east and southeast Asia and central and eastern Europe. Oceania had the largest rise, and the highest mean FPG (6·09 mmol/L, 5·73–6·49 for men; 6·08 mmol/L, 5·72–6·46 for women) and diabetes prevalence (15·5%, 11·6–20·1 for men; and 15·9%, 12·1–20·5 for women) in 2008. Mean FPG and diabetes prevalence in 2008 were also high in south Asia, Latin America and the Caribbean, and central Asia, north Africa, and the Middle East. Mean FPG in 2008 was lowest in sub-Saharan Africa, east and southeast Asia, and high-income Asia-Pacific. In high-income subregions, western Europe had the smallest rise, 0·07 mmol/L per decade for men and 0·03 mmol/L per decade for women; North America had the largest rise, 0·18 mmol/L per decade for men and 0·14 mmol/L per decade for women.

Interpretation

Glycaemia and diabetes are rising globally, driven both by population growth and ageing and by increasing age-specific prevalences. Effective preventive interventions are needed, and health systems should prepare to detect and manage diabetes and its sequelae.

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