Diabetes

Is the incidence of diabetes declining?

A recent systematic review, published in the *BMJ*, has concluded that in countries where data is available the incidence of diabetes has been stable or falling since 2006.

The authors performed a systematic review of studies reporting trends of diabetes incidence. The PRISMA checklist for systematic reviews was used to search multiple databases including Medline, Embase and CINAHL for suitable studies from 1980 to 2017. Studies of open population-based cohorts, diabetes registries and administrative and insurance databases that reported secular trends of diabetes were included. Eligible studies had to report total diabetes or type 2 diabetes incidence in two or more time periods.

Of 22,833 screened abstracts, 47 studies were included in the analysis. The countries represented in the studies were: Canada, China, Denmark, Finland, Germany, Hong Kong, Iceland, Israel, Italy, Korea, Mauritius, Nauru, Netherlands, Norway, Portugal, Scotland, Sweden, Switzerland, Taiwan, UK and USA.

Trends in incidence of diabetes

1960-89
- 36% of the populations studied had increasing trends
- 55% had stable trends
- 9% had decreasing trends

1990-2005
- 66% had increasing trends
- 32% had stable trends
- 2% had decreasing trends

2006-2014
- 33% had increasing trends
- 30% had stable trends
- 36% had declining trends

The incidence of diagnosed diabetes increased in most populations up to the early 2000s. The majority of the populations studied showed stable or reducing incidence of diabetes from the mid 2000s.

Countries reporting a decrease in incidence over this period included the USA, Israel, Switzerland, Hong Kong, Sweden and Korea. Stable incidence was reported from the UK, Canada, Italy, Scotland, Norway, and the USA (non-hispanic white).

Increasing incidence was only found in Portugal, Denmark and Germany.

The authors acknowledge that the systematic review could not adjust for different diagnostic thresholds for diabetes, and sometimes for diabetes type, although type 2 diabetes is always the most common. The data were limited in low- and middle-income countries.

Even with these caveats, this paper has interesting messages about the paridigm of the diabetes epidemic. The authors point out that prevalence of type 2 diabetes may increase because of improved survival, and that the simultaneous decline in incidence could be a reduction in the pool of undiagnosed diabetes patients, together with improving health awareness.

They cite increases in exercise from interventions at schools and workplaces, reductions in the consumption of sweetened beverages and active diabetes prevention programmes as examples of interventions that may have reduced the incidence of diabetes.

We have tended to feel that the rising trends in childhood obesity, and the traditional statistics of the large pool of undiagnosed diabetes have been part of an uncontrollable diabetes epidemic.

This paper may suggest that there are some grounds for cautious optimism about the future, especially in conjunction with the accumulating evidence for changes in lifestyle preventing, and even reversing, diabetes.

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Magliano DJ, Islam RM, Barr ELM et al. Trends in incidence of total or type 2 diabetes: systematic review. *BMJ* 2019;366:l5003

Smoking cessation

Quitting smoking in pregnancy lowers risk of preterm birth

Smoking cessation in pregnant women is associated with a reduced risk of preterm birth, a large study from the United States has shown.

Information was obtained from live birth certificates issued between 2011 and 2017 as part of the US National Vital Statistics System. Overall, 25,233,503 pregnant women who delivered live neonates and had data recorded on pre-pregnancy and trimester-specific cigarette smoking frequency were included in the analysis.

Smoking frequency was categorised as 0, 1-9, 10-19, and ≥20 cigarettes per day three months prior to pregnancy and in the first, second, or third trimesters.

The modal age at delivery was 25-29 years, with 52.9% of study subjects non-Hispanic white, 23.6% Hispanic and 14.2% non-Hispanic black women. A quarter of the women were high school graduates, 60% had some college education, 60% were married and 33% received social benefits.

The proportion of women who smoked during the three months prior to pregnancy was 10.4%. Only around 1 in 4 women who smoked before pregnancy quit smoking throughout pregnancy.

An increase in the proportion of preterm births with smoking frequency was found in each trimester. For example, in the first trimester, the proportion was 14.4% for those who smoked 1-9 cigarettes per day, 14.8% for those who smoked 10-19 cigarettes per day, and 16.0% for those who smoked ≥20 cigarettes per