

350 million adults have diabetes: Study reveals the scale of global epidemic

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A major international study collating and analyzing worldwide data on diabetes since 1980 has found that the number of adults with the disease reached 347 million in 2008, more than double the number in 1980. The research, published today in *The Lancet*, reveals that the prevalence of diabetes has risen or at best remained unchanged in virtually every part of the world over the last three decades.

Diabetes occurs when the cells of the body are not able to take up sugar in the form of [glucose](#). As a consequence, the amount of glucose in the blood is higher than normal. Over time, this raises the risk of [heart disease](#) and stroke, and can also cause damage to the kidneys, nerves and retinas. [High blood glucose](#) and diabetes are responsible for over three million deaths worldwide each year.

The new study found that between 1980 and 2008, the number of adults with diabetes rose from 153 million to 347 million. Seventy per cent of the rise was due to population growth and ageing, with the other 30 per cent due to higher prevalence. The proportion of adults with diabetes rose to 9.8 per cent of men and 9.2 per cent of women in 2008, compared with 8.3 per cent of men and 7.5 per cent of women in 1980.

The estimated number of diabetics was considerably higher than a previous study in 2009 which put the number worldwide at 285 million.

The study, the largest of its kind for diabetes, was carried out by an international collaboration of researchers, led by Professor Majid Ezzati from Imperial College London and co-led by Dr. Goodarz Danaei from the Harvard School of Public Health, in collaboration with The [World Health Organization](#) and a number of other institutions.

Professor Majid Ezzati, from the School of Public Health at Imperial College London, said "Diabetes is one of the biggest causes of morbidity and

mortality worldwide. Our study has shown that diabetes is becoming more common almost everywhere in the world. This is in contrast to blood pressure and cholesterol, which have both fallen in many regions. Diabetes is much harder to prevent and treat than these other conditions."

Dr. Goodarz Danaei, from the Harvard School of [Public Health](#), added "Unless we develop better programmes for detecting people with elevated [blood sugar](#) and helping them to improve their diet and physical activity and control their weight, diabetes will inevitably continue to impose a major burden on health systems around the world."

To test whether or not someone has diabetes, doctors measure the levels of glucose in a patient's blood after they have not eaten for 12 to 14 hours, since blood sugar rises after a meal. A "fasting plasma glucose" (FPG) below 5.6 millimoles per litre (mmol/L) is considered normal, above 7 mmol/L is diagnostic of diabetes and an FPG level between 5.6 and 7 is considered pre-diabetes.

The study included blood sugar measurements from 2.7 million participants aged 25 years or more across the world and used advanced statistical methods for analyzing data. According to the results, average fasting sugar rose from 5.3 mmol/L in men and 5.2 mmol/L in women in 1980 to 5.5 mmol/L in men and 5.4 mmol/L in women in 2008, even after accounting for age differences over time.

The study also found that:

- Diabetes has taken off most dramatically in Pacific Island nations, which now have the highest diabetes levels in the world. In the Marshall Islands, one in three women and one in four men have diabetes. Glucose and diabetes were also particularly high in south Asia, Latin America, the Caribbean, Central Asia, North Africa and the Middle

East.

- Among high-income countries, the rise in diabetes was relatively small in Western Europe and highest in North America. Diabetes and glucose levels were highest in USA, Greenland, Malta, New Zealand and Spain, and lowest in the Netherlands, Austria and France.
- Of the 347 million people with [diabetes](#), 138 million live in China and India and another 36 million in the USA and Russia.
- The region with the lowest glucose levels was sub-Saharan Africa, followed by east and southeast Asia.

More information: '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.' *The Lancet*, published online 25 June 2011. [DOI:10.1016/S0140-6736\(11\)60679-X](https://doi.org/10.1016/S0140-6736(11)60679-X)

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