In China, people with diabetes diagnosed in middle age lose, on average, nine years of life, according to new research published in the January 17 issue of *JAMA*. This is mainly due to inadequate treatment, particularly in rural areas.

The prevalence of diabetes in China has quadrupled in recent decades, with an estimated 100 million adults now affected – more than any other country worldwide. Because the increase in diabetes is recent, the full eventual effect on mortality is unknown.

The Director-General of the World Health Organisation, Dr Margaret Chan, wrote in a linked Comment on the paper: “The quality of precise measurement reported by the study provides confidence that Chinese authorities will continue to move the country’s health reforms in the right direction, with results that also improve the prevention and control of diabetes”. In the last 10 years, China has undertaken major reforms of its health system, improving primary health care and training large numbers of family physicians.

Researchers from the University of Oxford and from Peking University examined the association of diabetes with mortality in 500,000 adults from ten (five rural and five urban) areas scattered throughout China. Participants were recruited between 2004 and 2008 and followed up until 2014 for cause-specific mortality. At entry, 6 percent had diabetes (4 percent in rural areas, 8 percent in urban areas; 3 percent previously diagnosed, 3 percent detected at the start of the study).

People with diabetes had twice the risk of dying during the follow-up period in comparison with other study participants, and these risks were higher in rural than in urban areas. Diabetes was associated with increased mortality from a wide range of conditions, including heart disease, stroke, kidney disease, liver disease, infection, and cancers of the liver, pancreas and breast.

The risk of dying from inadequately treated acute complications of diabetes (diabetic coma) was four times as great in rural as in urban areas, and even in urban areas it was much higher than in Western populations.

Most previous studies have been in high-income countries where people with diabetes are generally well managed, with reasonably good control of blood glucose and widespread use of statins and blood-pressure-lowering drugs.

Although three-quarters of those known to have diabetes were already being treated, their mean blood glucose levels remained much too high. Moreover, few were being given cardiovascular-protective medications, especially statins and blood-pressure-lowering treatments. Dr Fiona Bragg from the University of Oxford, UK, a study co-author, said: “Of the many people in China with diabetes, few are adequately managed. This is causing lots of premature deaths, particularly in rural areas”.
The researchers estimated that the 25-year probability of death would be 69 percent among those diagnosed with diabetes at age 50 compared with 38 percent among otherwise similar individuals without diabetes, corresponding to a loss of about nine years of life (10 years in rural areas and 8 years in urban areas).

The younger the age at which diabetes developed, the greater the eventual risk of premature death. “As the prevalence of diabetes in young adults increases and the adult population grows, the number of deaths from diabetes will continue to increase”, according to study co-author Professor Liming Li, from Peking University.

Study co-author Professor Zhengming Chen, from the University of Oxford, UK, said “In recent decades, Chinese adult mortality rates have been falling but this decrease will be slowed or even halted by diabetes, unless there is substantial improvement in treatment”.

--------------

**Funding:** Wellcome Trust, UK Medical Research Council, British Heart Foundation, Cancer Research UK, Hong Kong Kadoorie Charitable Foundation, Natural Science Foundation of China

**NOTES TO EDITORS:**

*Quotes direct from authors cannot be found in text of Article*

For interview in English or Chinese with Article authors, please contact

1). **Oxford, UK:** Prof. Zhengming Chen, E) zhengming.chen@ctsu.ox.ac.uk, T) +44-1865-743 743, mobile: +44-7917771693; or Dr Fiona Bragg, E) Fiona.bragg@ndph.ox.ac.uk, T) +44-1865-743 743.

2). **Beijing, China:** Prof. Liming Li, E) lmlee@vip.163.com, T) +86-139 0121 3570

For further information about the study, please visit the China Kadoorie Biobank website: www.ckbiobank.org

For full Article and Comment, see:  
http://jamanetwork.com/journals/jama/fullarticle/10.1001/jama.2016.19627

(doi:10.1001/jama.2016.19627; the study is available pre-embargo at the For the Media website)

**Editor’s Note:** Please see the article for additional information, including other authors, author contributions and affiliations, financial disclosures, funding and support, etc.

For more information, contact JAMA Network Media Relations at 312-464-JAMA (5262) or email mediarelations@jamanetwork.org.