

Obesity has doubled since 1980, major global analysis of risk factors reveals

February 4 2011

The worldwide prevalence of obesity has nearly doubled since 1980, according to a major study on how three important heart disease risk factors have changed across the world over the last three decades. The study, published today in three papers in the *Lancet*, looked at all available global data to assess how body mass index, blood pressure and cholesterol changed between 1980 and 2008.

The study shows that in 2008, more than one in ten of the world's adult population was obese, with women more likely to be obese than men. An estimated 205 million men and 297 million adult women were obese - a total of more than half a billion adults worldwide.

The proportion of the world's population with high blood pressure, or uncontrolled hypertension, fell modestly between 1980 and 2008. However, because of population growth and ageing, the number of people with uncontrolled hypertension rose from 600 million in 1980 to nearly 1 billion in 2008. High-income countries achieved large reductions in uncontrolled hypertension, with the most impressive progress seen in women in Australasia and men in North America. Uncontrolled hypertension is defined as a systolic blood pressure higher than 140 mmHg or diastolic blood pressure higher than 90 mmHg.

Average levels of total blood cholesterol fell in Western countries of North America, Australasia and Europe, but increased in East and Southeast Asia and the Pacific region.

Professor Majid Ezzati, the senior author of the study from the School of Public Health at Imperial College London, said: "Our results show that overweight and obesity, high blood pressure and high cholesterol are no longer Western problems or problems of wealthy nations. Their presence has shifted towards low and middle income countries, making them global problems."

Beyond global trends, the studies reveal how different countries compare in terms of each risk factor. The results show that:

BMI:

- In 2008, 9.8 per cent of men and 13.8 per cent of women in the world were obese (with a BMI above 30 kg/m²), compared with 4.8 per cent for men and 7.9 per cent for women in 1980.
- Pacific island nations have the highest average BMI in the world, reaching 34-35 kg/m², up to 70 per cent higher than some countries in Southeast Asia and sub-Saharan Africa.
- Among high income countries, USA has the single highest BMI (over 28 kg/m² for men and women), followed by New Zealand. Japan has the lowest BMI (about 22 kg/m² for women and 24 kg/m² for men), followed by Singapore.
- Among high-income countries, between 1980 and 2008, BMI rose most in USA (by more than 1 kg/m²/decade), followed by New Zealand and Australia for women and followed by UK and Australia for men. Women in a few Western European countries had virtually no rise in BMI.
- The UK has the sixth highest BMI in Europe for women and

ninth highest for men (both around 27 kg/m²).

- Turkish women and Czech men have the highest BMI in Europe (both around 28 kg/m²). Swiss women had the lowest BMI in Europe (around 24 kg/m²).

Blood pressure:

- Systolic blood pressure levels are highest in Baltic and East and West African countries, reaching 135 mmHg for women and 138 mmHg for men. These levels were seen in some Western European countries in the 1980s before their impressive declines.
- South Korea, Cambodia, Australia, Canada and USA had some of the lowest blood pressures for both men and women, below 120 mmHg for women and below 125 mmHg for men.
- Among high income countries, Portugal, Finland and Norway have the highest blood pressure.
- Men had higher blood pressure than women in most world regions.

Cholesterol:

- Western European countries like Greenland, Iceland, Andorra, and Germany have the highest cholesterol levels in the world, with mean serum total cholesterols of around 5.5 mmol/L.
- African countries have the lowest cholesterol, some as low as 4 mmol/L.

- Among western high-income countries, Greece has the lowest cholesterol for both men and women (below 5 mmol/L). USA, Canada, and Sweden also had low cholesterol.
- The UK's cholesterol is ninth highest in the world, slightly below 5.5 mmol/L.

The review 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 Ezzati added: "It's heartening that many countries have successfully reduced blood pressure and cholesterol despite rising BMI. Improved screening and treatment probably helped to lower these risk factors in high-income countries, as did using less salt and healthier, unsaturated fats.

"The findings are an opportunity to implement policies that lead to healthier diets, especially lower salt intake, at all levels of economic development, as well as looking at how we improve detection and control through the primary healthcare system. Policies and targets for cardiovascular risk factors should get special attention at the High-level Meeting of the United Nations General Assembly on Non-Communicable Diseases in September 2011."

Dr. Goodarz Danaei, from the Harvard School of Public Health, said: "This is the first time that anyone has tried to estimate trends in these major risk factors in every country in the world. The amount of data we collected is unprecedented and vast, and allows us to draw robust conclusions."

Dr. Gretchen Stevens, from the World Health Organization, said: "Our study helps track the obesity problem in individual countries and regions. We know that changes in diet and in physical activity have contributed to the worldwide rise in obesity, but it remains unclear which policies would effectively reduce obesity. We need to identify, implement, and rigorously evaluate policy interventions aimed at reversing the trends, or limiting their harmful effects."

Provided by Imperial College London

Citation: Obesity has doubled since 1980, major global analysis of risk factors reveals (2011, February 4) retrieved 5 May 2024 from <https://medicalxpress.com/news/2011-02-global-obesity.html>

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