Overweight and obesity linked to nearly 500,000 new cancers in 2012 worldwide

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Excess body weight causes around 481 000 new cancer cases a year in adults—or 3.6% of cancers worldwide—new estimates published in ***The Lancet Oncology*** suggest. The burden is far higher in more developed countries, with almost two-thirds (64%) of these obesity-related cancers occurring in North America and Europe.

Based on the results, the researchers led by Dr Melina Arnold from the International Agency for Research on Cancer (IARC), estimate that a quarter of all obesity-related cancers in 2012 (118 000 cases) were attributable to the rising average body mass index (BMI) in the population since 1982, and were therefore "realistically avoidable".

Using data from a number of sources including the GLOBOCAN database of cancer incidence and mortality for 184 countries, Arnold and colleagues created a model to estimate the fraction of cancers associated with excess bodyweight in countries and regions worldwide in 2012, and the proportion that could be attributed to increasing BMI since 1982.

The findings reveal that obesity-related cancer is a greater problem for women than men, largely due to endometrial (womb/uterus) and post-menopausal breast cancers. In men, excess weight was responsible for 1.9% or 136 000 new cancers in 2012, and in women it was 5.4% or 345 000 new cases.

Post-menopausal breast, endometrial, and colon cancers were responsible for almost three-quarters of the obesity-related cancer burden in women (almost 250 000 cases), while in men colon and kidney cancers accounted for over two-thirds of all obesity-related cancers (nearly 90 000 cases). See tables 1 and 2 pages 3–5.

In developed (very high human development index; HDI) countries, around 8% of cancers in women and 3% in men were associated with excess bodyweight, compared with just 1.5% of cancers in women and about 0.3% of cancers in men in developing countries (low HDI).

North America contributed by far the most cases with 111 000 cancers—equivalent to almost a quarter (23%) of all new obesity-related cancers globally—and sub-Saharan Africa contributed the least (7300 cancers or 1.5%). Within Europe, the burden was largest in eastern Europe, accounting for over a third of the total European cases due to excess BMI (66 000 cancers). See figure 1 page 7.

The proportion of obesity-related cancers varied widely between countries. In men, it was particularly high in the Czech Republic (5.5% of the country's new cancer cases in 2012), Jordan and Argentina (4.5%), and in the UK and Malta (4.4%). In women, it was strikingly high in Barbados (12.7%), followed by the Czech Republic (12%) and Puerto Rico (11.6%). It was lowest in both sexes in countries within sub-Saharan Africa (less than 2% in men and below 4% in women). For more detailed findings by individual region and country see figure 2 page 8 and appendix xiii.

According to Dr Arnold, "Our findings add support for a global effort to address the rising trends in obesity. The global prevalence of obesity in adults has doubled since 1980. If this trend continues it will certainly boost the future burden of cancer, particularly in South America and North Africa, where the largest increases in the rate of obesity have been seen over the last 30 years."*

Writing in a linked Comment, Dr Benjamin Cairns from the University of Oxford in the UK says, "If 36% of all cancers are associated with high BMI, that is nearly half a million cancers, but this number is large mainly because the world population is large. Global health resources specifically for cancer prevention are not so large, and the resources targeted at obesity must be balanced against those for other important causes of cancer, particularly infections and tobacco use, which are each associated with much larger proportions of cases."

Notes to Editors:

*Quote direct from author and cannot be found in text of Article.

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