

High blood pressure is linked to increased risk of developing or dying from cancer

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Raised blood pressure is linked to a higher risk of developing cancer or dying from the disease according to the findings of the largest study to date to investigate the association between the two conditions.

Dr Mieke Van Hemelrijck will tell the 2011 European Multidisciplinary [Cancer](#) Congress in Stockholm today (Tuesday) that there had been contradictory results from previous, smaller studies investigating the link between cancer and [blood pressure](#). However, her study, which included 289,454 men and 288,345 women, showed that higher than [normal blood pressure](#) was statistically significantly associated with a 10-20% higher risk of developing cancer in men, and a higher risk of dying from the disease in both men and women.

Dr Van Hemelrijck, a research associate in the [Cancer Epidemiology](#) Group at King's College London (London, UK), and her colleagues analysed data on blood pressure and [cancer incidence](#) and death in a prospective study that included seven groups of participants in Norway, Austria and Sweden.

They used figures on mid-blood pressure for their calculations. Mid-blood pressure is defined as systolic blood pressure plus diastolic blood pressure, divided by two. The average mid-blood pressure in this study was 107 mmHg for men and 102 mmHG for women. The results were divided into five groups (or quintiles), so that people with the lowest mid-blood pressure were in the first, and those with the highest mid-blood pressure were in the fifth quintile.

After an average of 12 years of follow-up and excluding the first year, 22,184 men and 14,744 women had been diagnosed with cancer, and 8,724 men and 4,525 women died from the disease. The overall risk of developing any cancer increased by 29% between men in the lowest quintile and those in the highest. The researchers also found that, as blood pressure rose, the risk of oral, colorectal, lung, bladder, and kidney cancers, melanoma and non-melanoma skin cancers rose in men. In women, increased blood pressure was not statistically significantly associated with the overall risk of developing any cancer, but was associated with an increased risk of cancers of the liver, pancreas, cervix and endometrium and [melanoma](#).

In both men and women, there was an increased risk of dying from cancer; men in the fifth quintile had a 49% increased risk of dying compared to those in the first quintile, and women in the fifth quintile had a 24% increased risk compared to those in the first.

Dr Van Hemelrijck explained: "This means that we found that men with mid-blood pressure in the highest fifth had an absolute risk of developing cancer of 16% compared to an absolute risk of 13% for those with mid-blood pressure in the lowest fifth. Men in the highest fifth had an absolute risk of dying from cancer of eight percent, compared to an absolute risk of five percent for those in the lowest; and for women, those in the highest fifth had an absolute risk of dying of five percent compared to an absolute risk of four percent in the lowest fifth.

"Our study shows that blood pressure is a risk factor for incident cancer in men and fatal cancer in men and women. Although the relative and absolute risk estimates were rather modest, these results are important from a public health perspective since a large proportion of the population in many western countries suffers from hypertension."

The researchers adjusted their results to take account of age, sex, body

mass index, smoking and random errors in the exposure classification of blood pressure (errors that occur due to inaccuracy in blood pressure measurements or due to an individual patient's variations in blood pressure, which can be corrected by using data from several examinations).

Dr Van Hemelrijck warned that, as the study was observational, it could not show that blood pressure was the cause of the increased cancer risk. "We cannot claim that there is a causal link between high blood pressure and cancer risk, nor can we say that the cause of cancer is a factor related with high blood pressure," she said. "However a healthy lifestyle, including sufficient physical activity and a normal weight, has been shown to reduce the risk of several chronic diseases. For instance, high blood pressure is a known risk factor for cardiovascular disease, and our study now indicates that high blood pressure may also be a risk factor for cancer."

The researchers are unsure why men with high blood pressure appeared to have a higher cancer risk than women. "Our study, which to our knowledge is the largest and the first to take into account random error, showed that the association between hypertension and incident or fatal cancer is stronger for men than for women. In contrast, the second largest study previously found a higher cancer risk for women than for [men](#). The differences in findings might be explained due to our larger sample size, slightly older population, adjustment for random error, or lack of information on anti-hypertensive treatment," she said.

The Metabolic syndrome and Cancer project (Me-Can) was set up in 2006 to investigate the relationship between various metabolic conditions and the risk of cancer using data from health examinations carried out on patients between 1972-2005. Two of its initiators, Dr Tanja Stocks and Professor Pär Stattin at Umeå University, Sweden, analysed these data on blood pressure and cancer together with Dr Van

Hemelrijck.

ECCO spokesperson, Professor Jan Willem Coebergh, from the Eindhoven Cancer Registry (The Netherlands), said: "This extensive, population-based study of the role of concomitant hypertension shows that it has a modest effect on the risk of certain cancers, especially of the kidney and colorectum, but it is probably a smaller effect than that caused by diabetes and various vascular conditions."

ESMO spokesperson, Dr Franco Berrino, from the Istituto Nazionale Tumori in Milan, Italy, said: "There is increasing evidence that metabolic syndrome is associated with a higher risk of developing cancer as well as other chronic diseases. As an unhealthy lifestyle is a major determinant of hypertension, these results from the highly productive MeCan project add to the evidence that lifestyles affect both the risk and prognosis of cancer."

Provided by ECCO-the European CanCer Organisation

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