First study to show that bisphenol A exposure increases risk of future onset of heart disease

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Bisphenol A (BPA) is a controversial chemical widely used in the plastics industry. A new study followed people over a 10-year time period and shows that healthy people with higher urine concentrations of BPA were more likely to later develop heart disease.

The study was carried out by researchers at the Peninsula College of Medicine and Dentistry, the University of Exeter and the European Centre for the Environment and Human Health, in association with the University of Cambridge. The analysis was funded by the British Heart Foundation. The paper is published online in Circulation – a Journal of the American Heart Association.

The research team had previously identified the link between BPA and the increased risk of cardiovascular disease by using two sets of US data, which are effectively snapshots in time. The previous data showed a correlation between exposure to BPA and cardiovascular disease but it could not help researchers to predict how exposure to the chemical might affect future health.

The most recent study uses data from the European Prospective Investigation of Cancer (EPIC) in Norfolk, UK, a long term population study led by the University of Cambridge, supported by the Medical Research Council UK and Cancer Research UK. It is the first time that data has been used to establish a link between exposure to BPA and future onset of cardiovascular disease.

The study compared urine BPA measures from 758 initially healthy EPIC study respondents who later developed cardiovascular disease, and 861 respondents who remained heart disease free. The findings of the study show that those who developed heart disease tended to have higher urinary BPA concentrations at the start of the 10-year period. The extent of the effect is very difficult to estimate given that just one urine specimen from each participant was available for testing at the beginning of the 10-year follow-up.

Professor David Melzer of the Peninsula Medical School, who led the team, said: "This study strengthens the statistical link between BPA and heart disease, but we can't be certain that BPA itself is responsible. It is now important that government agencies organise drug style safety trials of BPA in humans, as much basic information about how BPA behaves in the human body is still unknown."

Professor Tamara Galloway of the University of Exeter, senior author on the paper, said: "If BPA itself is directly responsible for this increase in risk, the size of effect is difficult to estimate. However, it adds to the evidence that BPA may be an additional contributor to heart disease risk alongside the major risk factors, such as smoking, high blood pressure and high cholesterol levels."

BPA is one of the world's highest production volume chemicals. The global population is exposed to BPA primarily through packaged food and drink, but also through drinking water, dental sealants, exposure to the skin and the inhalation of household dust.

More information: To access the paper: circ.ahajournals.org/content/e… .111.069153.full.pdf