EPIC–Oxford Newsletter 2019

Since our last newsletter in January 2018 we have continued to publish important findings on the relationships of diet and other factors with long-term health. As previously, our main focus has been work in EPIC-Oxford on the health of vegetarians and vegans, and work in the EPIC study across Europe on risk factors for prostate cancer in men. We thank all the participants in EPIC-Oxford and the funding agencies for their continued support.

In the last two years EPIC-Oxford data have been included in analyses leading to more than 50 scientific publications. Below we summarize the findings from a few of these:

Risks for ischaemic heart disease and stroke in vegetarians

After 18 years of follow-up in EPIC-Oxford, we examined the risks for ischaemic heart disease and stroke in vegetarians (lacto-ovo-vegetarians combined with vegans) and fish-eaters (who do not eat meat but do eat some fish) compared to meat-eaters. Vegetarians had a lower risk of heart disease but a higher risk of stroke that appeared to be driven by a higher risk of haemorrhagic strokes, which are characterized by bleeding within the brain. The fish-eaters had a risk for ischaemic heart disease intermediate between meat-eaters and vegetarians, and a risk of stroke similar to that of the meat-eaters. Estimates of numbers of both these diseases showed that, among 1000 people followed over 10 years, vegetarians would have 10 fewer cases of ischaemic heart disease but 3 more cases of stroke compared to meat-eaters. The lower risk of ischaemic heart disease in vegetarians is probably mainly due to their lower blood levels of cholesterol; the reason for their higher risk of haemorrhagic stroke is uncertain, but might also be partly due to lower cholesterol and perhaps other factors such as lower intakes of vitamin B12. We plan further research to examine these factors.

Tong et al ,BMJ 2019;366:l4897.

https://www.ncbi.nlm.nih.gov/pubmed/31484644

Low risk for diabetes in non-meat eaters

The global prevalence of diabetes is high and increasing. Some previous studies have found that vegetarians might have a lower risk of diabetes than non-vegetarians. We therefore examined the association between low and non-meat diets and risk of diabetes in EPIC-Oxford. Compared with regular meat eaters, low meat eaters, fish eaters, and vegetarians were less likely to develop diabetes, by 37%, 53% and 37%, respectively. These associations were attenuated after adjusting for body mass index. We concluded that low meat and non-meat eaters had a substantially lower risk of diabetes, in part because of a lower body mass index.

Papier et al, Nutr Diabetes 2019;9:7.

https://www.ncbi.nlm.nih.gov/pubmed/30804320

Comparisons of major protein-rich foods in meat-eaters and non-meat-eaters

Differences in health outcomes between meat-eaters and non-meat-eaters might relate to differences in dietary intakes between these diet groups. We assessed intakes of major protein-source foods and other food groups in six groups of meat-eaters and non-meat-eaters in EPIC-Oxford. Regular meat-eaters, vegetarians and vegans, respectively, consumed about a third, quarter and a fifth of their total energy intake from high protein-source foods. Compared with regular meat-eaters, low and non-meat-eaters consumed higher amounts of high-protein meat alternatives (soy, legumes, pulses, nuts, seeds) and other plant-based foods (whole grains, vegetables, fruits) and lower amounts of refined grains, fried foods, alcohol and sugar-sweetened beverages. These findings provide insights into potential nutritional explanations for differences in health outcomes between diet groups.

Papier et al, Nutrients 2019;11.

https://www.ncbi.nlm.nih.gov/pubmed/30979052

EAT-Lancet score and major health outcomes

In January 2019 the EAT-Lancet Commission on healthy diets defined a universal reference diet to promote human and environmental health. We evaluated its association with the risk of major health outcomes in EPIC-Oxford. Participants were scored according to how closely their diets matched the EAT-Lancet recommendations. High adherence to the EAT-Lancet score was associated with lower risks of ischaemic heart disease (by 28%) and diabetes (by 59%) but was not associated with risk of stroke and not clearly associated with total mortality. Cross-sectionally, high adherence to the EAT-Lancet score was also associated with lower body mass index, plasma cholesterol and blood pressure, differences which could mediate the lower risk observed for ischaemic heart disease.

Knuppel et al, *Lancet* 2019;394:213-214.

https://www.ncbi.nlm.nih.gov/pubmed/31235280

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Meat, dairy and fish intake and risk for heart disease in EPIC Europe

In analyses across all the European countries in EPIC, which included the data from EPIC-Oxford, we examined the associations of the main animal source foods with the risk for ischaemic heart disease. Higher consumption of red and processed meat was positively associated with the risk for ischemic heart disease. Consumption of the other animal foods examined was not positively associated with risk; higher intakes of fatty fish, yogurt, cheese, and eggs were associated with a modestly lower risk, although some of these relatively weak associations may have been influenced by changes in diet due to health concerns in the few years preceding the diagnosis of heart disease. We concluded that substituting other foods for red and processed meat may reduce the risk of ischemic heart disease.

Key et al, Circulation 2019;139:2835-2845.
https://www.ncbi.nlm.nih.gov/pubmed/31006335

Prostate cancer: roles of hormones, diet, and biomarkers

It has long been suspected that the main male hormone, testosterone, may affect the development of prostate cancer, but previous studies have not shown any clear relationship. To address this, we combined data from EPIC-Oxford with the other EPIC centres in Europe and with another 19 studies worldwide, to assemble the largest dataset ever on this topic. We found that men with unusually low levels of "free" testosterone (the form which is most biologically active) had a lower risk of prostate cancer than other men, but risk did not clearly increase further among men with average or relatively high levels of this hormone. We concluded that men with low circulating free testosterone have a lower risk of overall prostate cancer, which may be due to a direct biological effect but might also be influenced by some variations in cancer detection and diagnosis.

Watts et al, Eur Urol 2018;74:585-594.
https://www.ncbi.nlm.nih.gov/pubmed/30077399

The EPIC-Oxford Participant Panel

We have now established a participant panel for the EPIC-Oxford study. This panel consists of a small group of existing participants who meet with the EPIC team via video conference at least once a year. Their role is to provide the study team with advice and guidance on research plans and findings.

For a health study like ours, it is important for us to have a participant panel to discuss and take advice on issues such as areas for research, providing adequate information about the study, disseminating research findings and writing lay summaries and providing feedback on the use of patient identifiable data. The first online meeting took place this September and the minutes of this meeting can be viewed on our website.

Recruiting more volunteers for the EPIC-Oxford Participant Panel

We would now like to expand the number of volunteers on this panel so if you would like to volunteer or wish to know more about the panel, please email us at queries@epic-oxford.org for further information.

Thank you

We would like to thank all of the EPIC-Oxford participants for your continued support. If you wish to contact us our details can be found below. Our website is regularly updated with news and new publications, and we value the support of our participants to be able to continue this important research.

Our Team

The Principal Investigator of EPIC-Oxford is Professor Tim Key and the Co-Investigator is Associate Professor Ruth Travis. We also have five Nutritional Epidemiologists, three Statisticians, a Research Co-ordinator and a Research Admin Assistant.

Please be reminded that participants in EPIC-Oxford are free to withdraw from the study at any time. Full details of how to do this are given on our website at http://www.epic-oxford.org/faq/ or if you don't have access to the website you can contact us by e-mail or telephone.

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