

Read all about it... It can be awkward when a patient asks you about a report in their favourite tabloid detailing an amazing research breakthrough or a 'cutting-edge' new treatment / test and you don't know what they are talking about! So this section fills you in on the facts.

WATER WORRY: Cancer-causing chemicals in drinking water 'exceed safe limit in 9 EU countries'

The Sun – 15 January 2020

It is often joked that everything these days is shown to cause cancer and that it is only a matter of time before somebody says that water causes cancer. Here we are, the time has come. *The Sun* reports that the UK is one of nine EU countries that has drinking water which exceeds the 'safe limit' of cancer-causing chemicals which are associated with a possible extra 1300 cases of bladder cancer per year.

The story relates to a publication in January's *Environmental Health Perspectives*, published by a team at the Barcelona Institute for Global Health. Many of the authors are highly involved in research into pollutants and particulates and their effect on human health and the lead authors have previously published on similar papers. The research concerns trihalomethanes (THMs) which are a by-product of tap water sterilisation / chlorination and linger in the water supply after its treatment. A great many other trace chemicals (with equally unappealing names) linger in the water after treatment, but THMs are used in such research as a surrogate or marker for the overall levels of disinfection by-products (DBPs).

In this particular paper, the team collated data on annual mean THM levels in the drinking water across 28 European countries and used this to estimate mean levels of THM or DBP exposure in different countries. For the bladder cancer incidence, the team looked to a 2011 meta-analysis (Costet N et al. *Occupational and Environmental Medicine*) which looked at 2381 cases of bladder cancer and 3086 controls

in France, Finland and Spain that were compared against estimated THM levels at the time. This 2011 meta-analysis produced a significant odds ratio and a significant linear trend between THM level exposure and bladder cancer incidence. Extrapolating from this odds ratio and feeding in the new THM level data, the team in 2020 has produced an estimation of the number of bladder cancer cases they think could be attributable in the UK to drinking water contamination – 1356 cases per annum.

This is interesting, but far from conclusive. Of note, the 2011 meta-analysis only demonstrated a significant correlation between THM levels and bladder cancer risk in men, the data showed no relationship in women. The 2011 analysis also showed that THM concentrations seemed far more significant than length of exposure, which seems slightly surprising. I am not being dismissive of this publication at all, this is a large piece of meticulously constructed research that involves dizzying amounts of complicated maths, but ultimately this is all 'estimation' based on an assumption of a causal relationship. To quote directly from this new paper, "there are limited large cohort studies prospectively evaluating the association with bladder cancer to unequivocally conclude a causal association, and the epidemiological evidence concerning other cancer sites is inconsistent."

I think there may well be something here, but this is likely to be a 'slow burner' with no definitive consensus for many years to come.

Prostate deaths hit record high of 12,000 after soaring by more than a quarter in less than 20 years

The Daily Mail – 16 January 2020

This story got a great deal of coverage in the national press at the start of the year. The number of prostate cancer deaths in the UK in 2017 (in newly released official statistics) rose to 12,031 from previous records of 11,307 in 2014. This is a rise of around 6%. However, the population of the UK has grown by around 2 million in the same time frame according to the Office of National Statistics. The population of people aged 65 years and over has gone up by around 15% and for those aged 100 years or more, it is 70%. The elderly population in the country is steadily expanding, so it stands to reason that the number of prostate cancer diagnoses is going to rise, as will the number of deaths.

Fortunately, I did not come across any media outlet trying to build a narrative of 'failure' in relation to this news, but instead the news was very positive and used this data as a jumping off point to raise awareness that will hopefully lead to earlier diagnosis for many men. As the old adage goes, 'there's no such thing as bad publicity'.

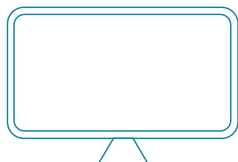
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