June 2025

Municipal waste incineration emissions and physical health effects

Public Health Wales' view

Emissions from modern, well-managed and regulated municipal waste incinerators (MWI) in the UK are not a significant risk to physical health. While it is not possible to completely rule out adverse physical health effects from such facilities, any potential effects on those living nearby are likely very small. This

Public Health Wales opinion – which is similar to that of other UK public health agencies – is based on detailed assessments of the effects of air pollutants on physical health and on the fact that these incinerators make only a very small contribution to local concentrations of air pollutants.

More information

In June 2025 the UK Health Security Agency (UKHSA) published: Health impacts of waste incineration: a systematic review of epidemiological evidence in the UK and EU, following implementation of the Waste Incineration Directive. The report *"provides a systematic review of the available evidence regarding the potential health impacts of air pollutants emitted by municipal waste incinerators (MWI) on nearby communities. It builds on the Health Protection Agency's (HPA) (a predecessor to UKHSA) position statement from 2009 and supports UKHSAs current opinion statement, which is that modern, well run and regulated municipal waste incinerators are not a significant risk to public health. The evidence considered was focused on MWI in the UK and European Union (EU), reporting epidemiological health outcomes from exposure to MWI emissions, from the incineration process." evidence considered was focused on MWI in the UK and European Union (EU), reporting epidemiological health outcomes from exposure to MWI emissions, from the incineration process."*

Health concerns about MWI can be broadly categorised as pregnancy and adverse birth outcomes, cancer, and non-cancer illnesses. On the first of these, three major studies on incineration and health and health in the UK were published in 2019.

Studies one and two found no evidence of an increased risk of infant mortality for children living close to MWI. The third study found no evidence of increased risk of congenital anomalies from exposure to MWI emissions, but suggested a small potential increase in risk of congenital anomalies for children born within ten kilometres of municipal waste incinerators. The authors acknowledged that this finding may be down to not fully adjusting the study for all possible influencing factors, which could include other local sources of pollution, as well as levels of deprivation. Importantly, a causal association between the increased risk of congenital anomalies for children born close to MWI has not been established. On cancer, non-UK European studies have found an association between older MWI and a small number of cancers (see here, here and here). However, each study found different cancers, and most of the time periods studied predate modern, less polluting, waste incinerators, whilst the studies were not able to factor in what else the individuals were exposed to, such as smoking. Given the inconsistent findings and the absence of studies of MWI that meet current standards, there is limited evidence of a link between MWI and cancer.

It is however noted that mental health effects do not appear to be covered widely by the literature, to the extent that Bottini et al (2025) have referred to there being too few studies considering mental health impacts.

Collaboration beyond Wales

Public Health Wales will continue to work closely with other UK public health agencies to keep this position under review.

UK Health Security Agency has further information about this topic on their webpages.

Public Health Scotland has further information about this topic on their webpages.