

Cancer in those under 50 is rising, globally. Why?

September 20 2022, by Siobhan Glavey



Credit: AI-generated image ([disclaimer](#))

We know what we need to do to reduce our risk of getting cancer, right? Wear SPF, stop smoking, avoid processed foods, keep fit, lose weight and get enough sleep. But what if much of what causes cancer has already happened in our early years, or worse still, before we were born. A [recent study](#) from Brigham and Women's Hospital and Harvard

University says that may be the case, especially in cancers that happen before the age of 50 (early onset cancers).

The most important finding in this study, published in *Nature Reviews Clinical Oncology*, is that people born after 1990 are more likely to develop cancer before the age of 50 than people born, for example, in 1970. Meaning that [young people](#) will be more heavily burdened by cancer than generations gone by, with the knock-on effects on health care, economics and families.

What we are exposed to in early life can affect our risk of developing cancer later in life, and this review of cancer trends looks at how these factors might be affecting early onset cancers. What exposures matter in [early life](#) are still not fully clear, but front-runners include diet, lifestyle, the environment and the bugs that live in our gut (the microbiome).

When looking at large numbers of people, researchers can see that dietary and lifestyle habits are formed early in life. This is seen in [obesity](#) where obese children are more likely to become [obese adults](#). As obesity is a known risk factor for cancer, it follows that those adults are likely to develop cancer at an earlier age, possibly because they have been exposed to the risk factor for a longer time.

Of course, some of these early onset cancers are detected through better screening programs and earlier diagnosis, which contributes to increased numbers of new cancers diagnosed annually, worldwide. But that is not the whole story.

Early onset cancers have different genetic signatures compared with late-onset cancers and are [more likely to have spread](#) than cancers diagnosed in later life. This means that those cancers may need different types of treatment and a more personalized approach that is tailored to the patient's age at the time the cancer developed.

Gut bacteria

The Brigham study looked at 14 cancers and found that the genetic makeup of the cancer and the aggression and growth of the cancer was different in patients who developed it before the age of 50 compared with those who developed the same cancer after the age of 50.

This seemed to be more prominent in several types of gut cancers (colorectal, pancreatic, stomach). One possible reason for this relates to our diet and microbiome.

Gut bacteria are altered by high-sugar diets, antibiotics and breastfeeding. And as patterns of these things change in society over time, so do the bacteria in our gut. This might support the implementation of sugar taxes [as recommended by the World Health Organization](#).

If our [healthy cells](#) are programmed in the womb, then so might the cells that go on to cause cancer. Maternal diet, obesity and environmental exposures, such as air pollution and pesticides, are known to [increase the risk of chronic diseases and cancers](#).

Conversely, severe restrictions on [food intake](#) in pregnancy, as seen in famine, increase the [risk of breast cancer in offspring](#). Both of these findings would have different implications for societal approaches to reducing cancer risk.

As a hematologist, I take care of patients with multiple myeloma, which is an incurable blood cancer that usually affects patients over the age of 70. In recent years, there has been an increased number of younger people diagnosed with this [cancer](#) worldwide, which is only partly explained by better screening. This study flags obesity as an important risk factor for early onset disease, but clearly, there are other risk factors

yet to be uncovered.

Understanding what makes early onset cancers tick, what exposures really matter and what can be done to prevent them are some of the first steps to developing prevention strategies for future generations.

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