

Tattoos Linked to Increased Cancer Risk, Scientists Warn

 sciencealert.com/tattoos-linked-to-increased-cancer-risk-scientists-warn

June 10, 2024

Health 10 June 2024

By Christel Nielsen, The Conversation

Regret was for many years considered the most severe side-effect of tattoos. But my new study suggests there could be much worse things to worry about than that.

Tattoos are now a mainstream means to express identity or celebrate milestones in life. Yet we know very little about the long-term health effects. Hazardous chemicals in tattoo ink have received attention in Europe during the last ten years. In parallel, research has shown that the ink that is injected into the skin does not stay there.

The body perceives tattoo ink as something foreign that needs to be removed, and tattooing causes an immune response that results in a large fraction of ink particles ending up in the lymph nodes. But the last piece of the puzzle has been lacking: how does tattoo ink deposited in the lymphatic system affect people's health?

To connect the dots, my colleagues and I at Lund University, Sweden, conducted a large study to answer whether having tattoos might increase the risk of malignant lymphoma, a rare form of cancer that affects the white blood cells (lymphocytes). The study was recently published in the journal *eClinicalMedicine*.

With a population where more than one in five is tattooed, Sweden is one of the most tattooed countries in the world. The country also has a long tradition of keeping population registers, for instance, the National Cancer Register includes everyone with a cancer diagnosis.

Our study included everyone in Sweden who had been diagnosed with lymphoma at the age of 20 to 60 years between 2007 and 2017. For each person with lymphoma, three random people of the same sex and age but without lymphoma were identified (the "controls" used for comparison).

The participants answered a questionnaire about several lifestyle factors, and those who were tattooed were asked about tattoo size, their age at first tattoo, and tattoo colours. The study included 5,591 people (1,398 cases and 4,193 controls).

We found that tattooed people had a 21% higher risk of lymphoma than people without tattoos after factoring in smoking status and education level (both being factors that may be associated with getting a tattoo and developing lymphoma).

It is important to keep in mind that lymphoma is a very rare disease and that the risk increase relates to a very low baseline risk. According to the National Board of Health and Welfare, 22 in 100,000 people in the age group 20 to 60 years were diagnosed with lymphoma in Sweden in 2022.

Size doesn't matter

The size of the tattoos did not seem to matter. What did matter was time – how long participants had had their tattoos. The risk seemed to be higher for new tattoos (received within two years) and for older tattoos (received more than ten years ago).

It is not appropriate to give any tattoo recommendations based on this single study. More research is needed before we can do that. But what the research tells us is that for people with tattoos, it is important to be aware that tattoos might have health effects and that you should seek medical care if you experience any symptoms that may be tattoo-related.

The tattoo trend seems to be here to stay. As people will continue to get tattooed, it is a societal responsibility to make sure that it can be done as safely as possible.

There is clearly a need to delve deeper to understand the health implications of tattoos. Right now, my colleagues and I are completing parallel studies on two types of skin cancer and are about to start new research to find out if there is an increased risk of immune-system-related conditions, such as thyroid disease and sarcoidosis.

Christel Nielsen, Associate Professor, Occupational and Environmental Medicine, Lund University.

This article is republished from The Conversation under a Creative Commons license. Read the original article.