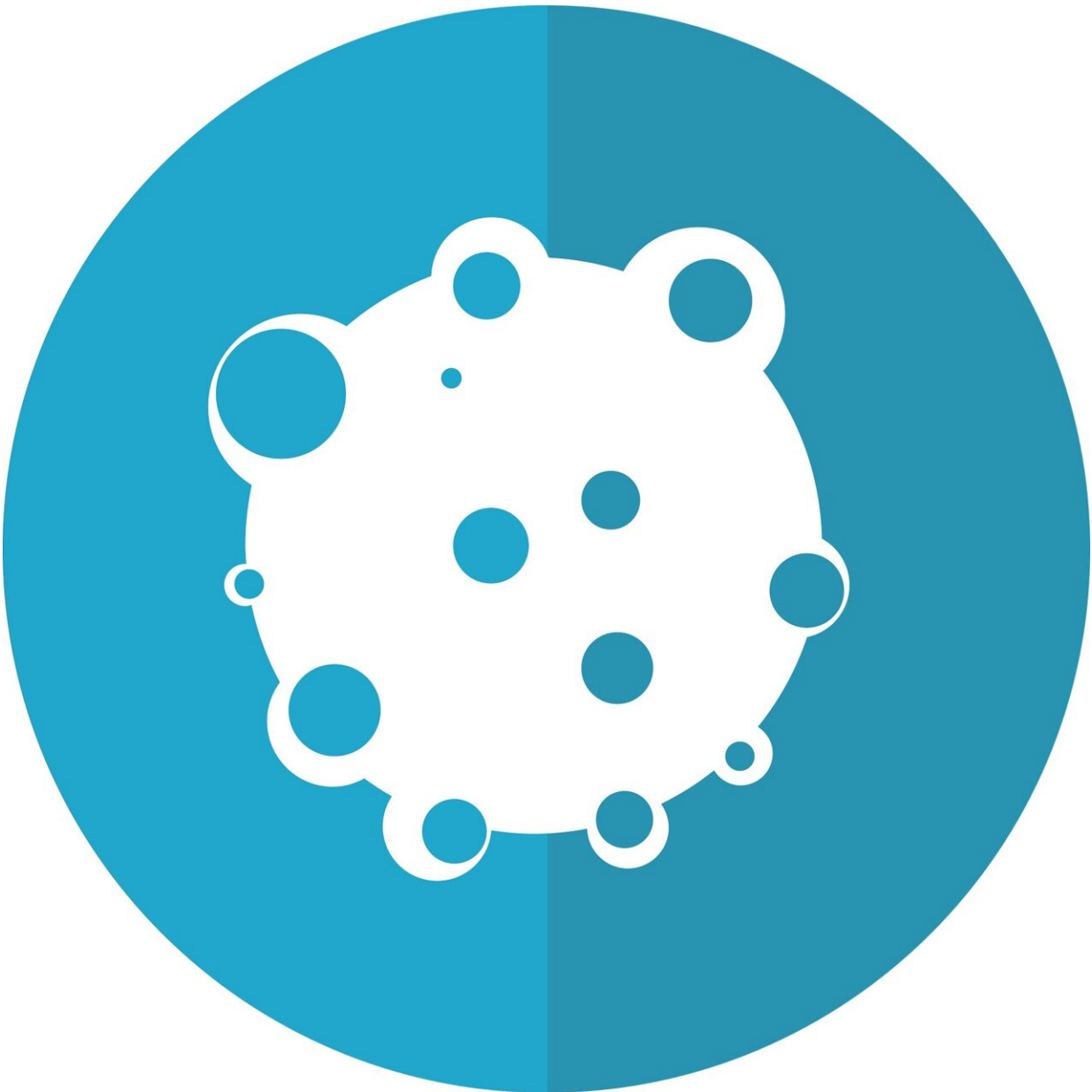


Short-term use of immunosuppressants not linked to cancer risk

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Relatively short-term use of immunosuppressant medications to control an inflammatory disease was not associated with an increased risk of later developing cancer, according to new research led by scientists at the University of Pittsburgh and Mass Eye and Ear, a member of the Mass General Brigham health care system, and published in the journal *BMJ Oncology*.

The findings should provide reassurance to patients and clinicians who may hesitate to prescribe the medications because they are known to increase the risk of cancer in people who take them over many years or a lifetime to prevent dire consequences, such as organ rejection in transplant recipients.

"When we got these results, I was reassured, and I hope patients will be, too," said lead author Jeanine Buchanich, Ph.D., associate dean for research and associate professor of biostatistics at Pitt's School of Public Health.

"Immunosuppressants are widely used and transformative for care of patients with inflammatory diseases, but the potential concern that they carry a cancer risk has forced people to make difficult decisions without enough information. Alleviating that concern with use for inflammatory diseases will help people make the treatment decision that's right for them."

The new findings were from the Systemic Immunosuppressive Therapy for Eye Diseases (SITE) Cohort, which began two decades ago when principal investigator John Kempen, M.D., Ph.D., senior scientist and director of epidemiology for ophthalmology at Mass Eye and Ear and

professor of ophthalmology at Harvard Medical School, approached Buchanich, who directs Pitt Public Health's Center for Occupational Biostatistics and Epidemiology, to partner in evaluating cancer risk for people with non-infectious ocular inflammatory diseases taking immunosuppressants.

These eye diseases are caused by immune dysfunction and do not themselves cause cancer but can be very serious, with blindness as a possible outcome.

The diseases are commonly treated with immunosuppressive medications, which patients generally take for several months to several years.

This new research adds evidence to the limited [cancer risk](#) associated with immunosuppressant treatments uncovered by the SITE study consortium. In a study published last month in *Ophthalmology*, the researchers found no increased risk in cancer-related and overall mortality in individuals taking commonly used immunosuppressants. The study included 15,938 SITE participants who were tracked for an average of 10 years.

The *BMJ Oncology* study included 10,872 participants, ultimately encompassing 84% of the enrolled SITE participants who lived in one of the 12 states from which the research team obtained data linking participants to each state's cancer registries. Though most states track cancer incidence, there is no centralized federal cancer registry, and different states require different permissions and use different interfaces to share data. For this reason, it is difficult to do large-scale epidemiological cancer studies in the U.S., making this study incorporating years of data from multiple states a rarity.

The research team tracked each participant for an average of 10 years

after they took immunosuppressant medications, or for a similar amount of time for those not taking immunosuppression, to see if they ever developed cancer. Four different categories of immunosuppressants—TNF-inhibitors, antimetabolites, alkylating agents and calcineurin inhibitors—were covered by the study, with some patients taking more than one type. Patients were on the medications for a median of one year.

Across all four classes of immunosuppressant medications the scientists found no evidence of excess risk of cancer in patients who took them on a short-term basis, regardless of medication dose.

While the study only looked at people with noninfectious eye diseases and the researchers caution that the results aren't generalizable to everyone taking immunosuppressants, the results probably are generalizable to patients with inflammatory diseases, Kempen said.

"The patients in our study actually tended to have a lower incidence of cancer than non-immunosuppressed patients, suggesting that an increased risk of overall cancer from commonly used immunosuppressants given for the short- to medium-term is very unlikely," said Kempen.

"This result is foundational for a large number of patients with inflammatory eye conditions and a broad range of patients with other [inflammatory diseases](#)."

More information: John H. Kempen et al, Use of Immunosuppression and the Risk of Subsequent Overall or Cancer Mortality, *Ophthalmology* (2023). [DOI: 10.1016/j.ophtha.2023.07.023](https://doi.org/10.1016/j.ophtha.2023.07.023)

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