

Blood chromosome differences are linked to pancreatic cancer

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A new study shows that a blood marker is linked to pancreatic cancer, according to a study published today by scientists at the University of Wisconsin Carbone Cancer Center and Mayo Clinic.

First author Dr. Halcyon Skinner, assistant professor of population health sciences at the University of Wisconsin School of Medicine and Public Health, says the study is the first time pancreatic [cancer risk](#) has been linked to differences in telomeres' length in blood cells.

"This suggests a new avenue to identify those with pancreatic cancer or those at risk of developing the cancer in the future," he says.

Skinner's colleagues at Mayo Clinic took blood samples from more than 1,500 people – 499 of them with a diagnosis of pancreatic cancer and 963 of them cancer-free control subjects. Specifically, the scientists were interested in the length of the telomeres – the end caps on chromosomes – found in [white blood cells](#). They found a direct relationship with the risk of pancreatic cancer: the shorter the telomeres, the more likely a person was to have pancreatic cancer.

Telomeres maintain the stability of genes, and are known to shorten with age as cells divide. People of the same chronological age can have vastly different telomere lengths. In other words, some people's cells can be viewed as biologically older than cells from other people the same age.

"We know that people with many factors that are classically unhealthy also tend to have shorter telomeres. Those who have had stressful lives, exposed to [chronic inflammation](#), have poor [glucose control](#) or smoked cigarettes tend to have shorter telomeres, and that can set the stage for [genetic damage](#)," Skinner explains.

Shortened telomeres in the blood have already

been associated with other [types of cancer](#), including [colon cancer](#).

"We found the same relationship with pancreatic cancer, and for the vast majority of our participants, there was a direct linear relationship," he says, "the shorter the telomere, the higher the likelihood of pancreatic cancer."

But because shorter telomere length is also associated with the development of other cancers and other diseases of aging, measurement of telomere length alone is not a specific marker for pancreatic cancer.

Dr. Lisa A. Boardman, of Mayo Clinic, who led the overall study, says that future studies need to address if telomere length and other markers of pancreatic cancer should be combined to create a test that could be used clinically.

Provided by University of Wisconsin-Madison

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