

# UW Health: Study finds that analyzing DNA in urine could help detect cancer

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MADISON – A study published this week in *Science Translational Medicine* describes how urinalysis could potentially be used to detect some forms of cancer.

Currently, cancers are detected and diagnosed using more invasive methods such as surgical biopsies of suspected tumors and blood draws. Urinalysis has long been used to detect and manage many diseases and disorders, but not cancer.

Researchers investigated whether fragments of cell-free DNA in urine could be analyzed to detect early-stage cancer. Previously, DNA fragments in urine were thought to be degraded at random and were too short to provide any meaningful information about complex diseases such as different forms of cancer. However, in an initial proof-of-concept study, the research team found that DNA fragmentation patterns in urine samples were not random, and that patterns could allow them to distinguish between healthy individuals and those with pancreatic cancer or certain types of pediatric cancers.

The study was led by Dr. Muhammed Murtaza, visiting associate professor of surgery and Center for Human Genomics and Precision Medicine at the University of Wisconsin School of Medicine and Public Health. The work was performed while Murtaza was at the Translational Genomics Research Institute in Arizona.

“There are many steps between where we are now and where we want to go — confirming cancer from a urine sample — but without doubt this is an encouraging first step,” said Murtaza. “We are eager to continue this research further and hope it will someday enable us to detect cancer earlier, which could improve mortality by

enabling treatment at earlier stages.”

While early results are promising, the researchers indicate the need to test their findings in much larger populations of cancer patients in comparison to healthy individuals, and identify differences between men and women, different ages, and those with co-morbidities, such as diabetes and other chronic diseases.

Murtaza is available for interviews on this topic today, and a pre-recorded video interview is also available.