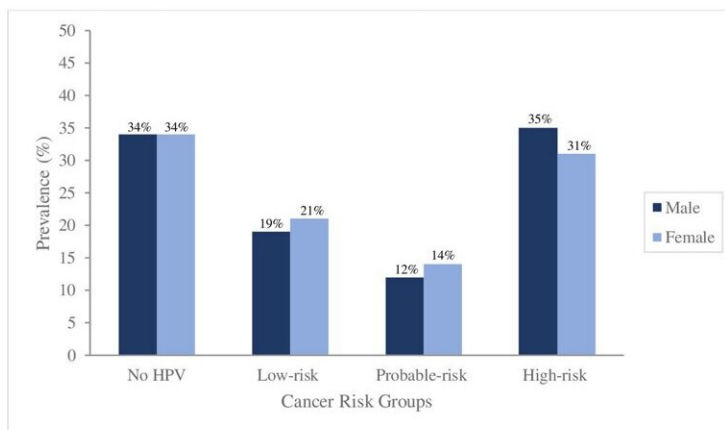
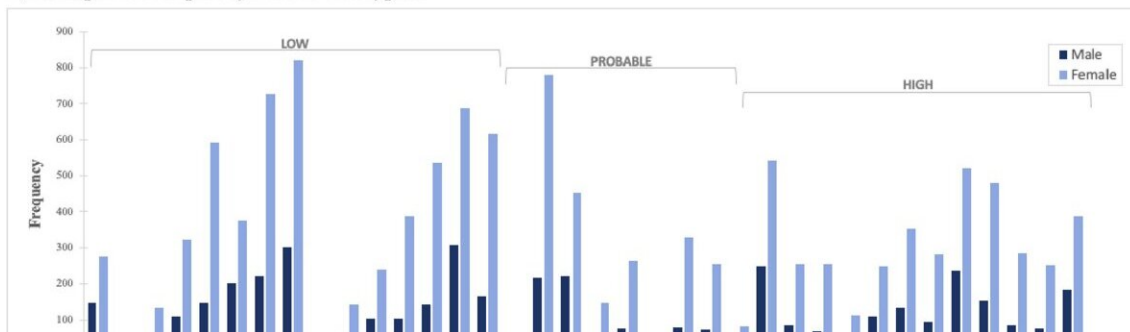


# Women with high-risk HPV and metabolic syndrome have almost three times risk for mortality: Study

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**B) Sex-specific frequency of HPV subtypes.**



Sex-specific prevalence of cancer risk groups and frequency of HPV subtypes according to cancer risk groups. Panel B) Individuals with multiple infections of a specific cancer group appear as multiple counts if they have multiple HPV infections. For example, if an individual has an HPV type 6 and 11 infection, they will appear as a count for both bars 6 and 11. HPV testing was done through vaginal swabs for females (18-59y, 2003–2004 to 2015–2016) and penile swabs

for males (18-59y, 2013–2014 to 2015–16) using Roche Linear Array Assays, and oral swabs for both males and females (18-69y, 2009–2010 to 2015–2016). Credit: *PLOS ONE* (2024). DOI: 10.1371/journal.pone.0299479

Using large-scale U.S. data following patients for more than a decade, York University Faculty of Health researchers found that women with both metabolic syndrome and high-risk strains of human papillomavirus (HPV) are at a 2.6 times higher risk for mortality than women without either condition, suggesting a need to look at chronic disease comorbidity when it comes to HPV-related cancers.

"While it has been known for some time that metabolic conditions can contribute to lingering HPV, this study extends previous work by examining the associations with mortality risk," says School of Nursing Assistant Professor Catriona Buick, also an Oncology Nurse Clinician Scientist at Sunnybrook Health Sciences Centre.

Buick, an expert in HPV, women's health, and cancer care, teamed up with School of Kinesiology and Health Science Ph.D. student Parmis Mirzadeh, whose research looks at obesity and metabolic illness, to take a closer look at the association.

Data for the study, [published in \*PLOS ONE\*](#), was obtained by the United States National Health and Nutrition Examination Survey with a final sample of 5,101 individuals (3,274 women). The researchers found more than a quarter of the women with [metabolic syndrome](#) had high-risk HPV.

Their study didn't suggest increased mortality for HPV status alone, which the researchers say could be attributed to the fact that the data only allowed for a snapshot of whether a woman had HPV or not and

could not speak to the persistence.

"HPV is the most prevalent sexually transmitted infection and has been referred to as the common flu of STIs," explains Buick. "In most cases, the body will clear HPV fairly quickly, but lingering cases of high-risk HPV can develop into precancerous changes in the cervix and in some cases over many years cervical cancer."

While most of the 200 known strains do not present a serious problem, a handful are responsible for nearly all cases of [cervical cancer](#), which represents 4.5 percent of all cancers worldwide.

Metabolic syndrome refers to a cluster of conditions that increase the risk of heart disease, stroke, and type 2 diabetes, which can include excess fat around the waist, high fasting blood sugar levels, and high blood pressure. While not looked at directly in this study, individuals with metabolic syndrome are about 65 percent more likely to develop [cardiovascular disease](#) and are 25 percent more likely to die from "any" cause. It is not clear how metabolic syndrome could affect HPV.

"It likely has something to do with a weakened immune response and [chronic inflammation](#), but the research looking at a direct physiological pathway still needs to be done," said Mirzadeh.

One in five Canadian adults have metabolic syndrome, and those numbers are rising, and both Buick and Mirzadeh underline the importance of a healthy lifestyle, participating in routine cancer screening, and getting vaccinated for HPV.

Jurisdictions in Canada and around the world are moving away from Pap smears and towards HPV testing, which Buick says can alert health practitioners to potential issues earlier and don't need to be done as frequently. While HPV vaccinations are very helpful, they only help

protect against a handful of the most common of the 40 known cancer-causing HPV strains, says Buick.

"Regardless of vaccination status, everyone with a cervix still needs to get screened."

**More information:** Parmis Mirzadeh et al, Association between human papillomaviruses, metabolic syndrome, and all-cause death; analysis of the U.S. NHANES 2003–2004 to 2015–2016, *PLOS ONE* (2024). [DOI: 10.1371/journal.pone.0299479](https://doi.org/10.1371/journal.pone.0299479)

Provided by York University

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