

Smoking increases potential for metastatic pancreatic cancer

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Smoking has once again been implicated in the development of advanced cancer. Exposure to nicotine by way of cigarette smoking may increase the likelihood that pancreatic ductal adenocarcinoma will become metastatic, according to researchers from the Kimmel Cancer Center at Jefferson. Their study was published in the August edition of the journal *Surgery*.

The culprit behind the increased metastasis potential appears to be an isoform (variant type) of a protein called osteopontin, according to Hwyla Arafat, M.D. Ph.D., an associate professor of Surgery at Jefferson Medical College of Thomas Jefferson University and a member of the Jefferson Pancreatic, Biliary & Related Cancers Center.

[Nicotine](#) promotes the expression osteopontin, and high levels of osteopontin have been reported in pancreatic ductal carcinoma (PDA). Dr. Arafat and her research team analyzed PDA samples and confirmed that the isoform, called OPNc, was also expressed on invasive PDA lesions. Previous studies have shown that OPNc is expressed in several invasive cancers, and supports metastatic behavior.

The researchers correlated OPNc expression with the patients' smoking history. OPNc expression was found on 87 percent of the invasive PDA lesions analyzed, of which 73 percent were from smokers. The OPNc expression also correlated with higher expression levels of osteopontin. Premalignant lesions expressed no OPNc.

"This is the first time a relationship between nicotine and OPNc expression has been identified," Dr. Arafat said. "These data are very exciting because now we can evaluate OPNc as a prognostic and diagnostic marker of invasive PDA lesions. "Because of the lower expression levels of OPNc in non-smokers, OPNc may be regulated by nicotine, which is another novel finding of this study. The exact role of OPNc in PDA remains to be defined, but it could provide a unique potential target to control pancreatic cancer aggressiveness, especially in people who smoke cigarettes."

[Pancreatic cancer](#) is the fourth-leading cause of cancer death in the country, taking 34,000 lives a year. Only four percent of individuals with pancreatic [cancer](#) live for five years after diagnosis.

Source: Thomas Jefferson University ([news](#) : [web](#))

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