

Tony Gwynn's cancer: How smokeless tobacco can contribute to disease

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Former San Diego Padre Tony Gwynn talks about his election to the National Baseball Hall Of Fame, in San Diego. The Baseball Hall of Fame on Monday, June 16, 2014 said Gwynn has died of cancer. He was 54. AP Photo/Lenny Ignelzi, File

Baseball Hall of Famer Tony Gwynn died at the age of 54 on Monday, following a long battle with salivary gland cancer.

Prior to being diagnosed, Gwynn had undergone three procedures to remove noncancerous lesions from his parotid gland, one of the major salivary glands located in front of and just below each ear. On numerous occasions, Gwynn had attributed his cancer to having dipped tobacco throughout most of his career.

But does the science back up that claim?

When it comes to the origins of most cancers, many experts are hesitant to attribute the development of tumors to one cause in particular. However, numerous studies and anecdotal evidence have exhibited a strong association between chewing tobacco and an increased risk of cancers in the oral cavity.

For one thing, the tobacco itself contains various chemicals and carcinogens that can damage tissue it comes in contact with.

“Chewing tobacco, specifically snuff, actually has [compounds] that rough up the mucous [membrane]; this is meant to aid the absorption of nicotine, but it also creates a more permeable place for carcinogens to enter the tissue,” Dr. Chad Zender, in the otolaryngology department at UH Case Medical Center, told FoxNews.com. “And just like tobacco smoke, tobacco itself has cancer-causing compounds in it. If you add it to things like alcohol, it works together synergistically.”

Additionally, a study presented at the American Association for Cancer Research’s annual meeting in 2012 revealed that a chemical found in smokeless tobacco called (S)-N'-nitrosonornicotine, or (S)-NNN, is a strong oral carcinogen. Some physicians have even noted that how a person chews tobacco can predict where subsequent cancer will develop.

“For several of my patients, if they chew tobacco on one point of the mouth, that is the part of the mouth that develops cancer,” Dr. Krzysztof Misiukiewicz, assistant professor of medical oncology at the Icahn School of Medicine at Mount Sinai, told FoxNews.com. “It’s proof that direct contact matters.”

The use of smokeless tobacco is also associated with the development of a variety of precancerous lesions in the oral cavity – including oral leukoplakia, erythroplasia, tobacco-associated keratosis and

more. According to the American Cancer Society, three out of four people who use chewing tobacco have non-cancerous or pre-cancerous lesions (sores) in their mouths.

These sores can present as firm, discolored bumps, and many have the ability to become malignant if left untreated.

“When you touch your tongue, if you feel this firmness or a nodule and a bump, obviously it’s very concerning,” Misiukiewicz said. “And those are the areas you can access. When it comes to the gum, the cancer can be hidden between the teeth, and most of the time it’s detected by the dentist.”

Once lesions become malignant, they can be very hard to treat; smaller lesions are much easier to remove, but as they grow larger in size, physicians have fewer tools to combat the spread of disease. According to the National Institutes of Health, approximately half of people with oral cancer will survive longer than five years past diagnosis.

Misiukiewicz noted that in countries where chewing tobacco is a bigger cultural practice – such as India, Bangladesh and Pakistan – rates of oral cancers are extremely high. He said the trend is concerning, especially given that many children in these nations will chew tobacco as well.

In the United States, the Centers for Disease Control and Prevention estimates smokeless tobacco use is much less prevalent with only 3.5 percent of individuals 12 and older using the substance; however, that still equates to 9 million people.

"The key point is just to stop smoking and stop chewing tobacco," Misiukiewicz said. "If we let [people] continue with those habits, [they will] still expose themselves to carcinogens from tobacco."