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Taiwanese Scientists Develop A Saliva Test For DNA Damage & Cancer Risk

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[Sophia Li](#)

September 2, 2011

Scientists in Taiwan have developed a new test to measure the amount of carcinogens attached to our DNA just by testing our spit.

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AsianScientist (Sep. 2, 2011) – Scientists in Taiwan have developed a new test to measure the

amount of carcinogens attached to our DNA just by testing our spit.

The team, led by [Professor Hauh-Jyun Candy Chen](#) at [National Chung Cheng University](#) (NCCU), reported their result at the 242nd National Meeting & Exposition of the American Chemical Society (ACS).

Carcinogens are substances which interact with DNA, interfere with its normal function, and cause damage to it. People are exposed to these chemicals in their workplaces or through everyday activities such as smoking. When the built-in repair system fails to fix the damages, DNA adducts are formed and may cause mutations that could in turn lead to cancer.

Chen says that the level of damaged DNA, or 'DNA adducts,' is a biomarker that may help doctors diagnose diseases, monitor how effective a treatment is, and also recommend steps high-risk patients can take to reduce their chances of getting a disease.

Using a very sensitive laboratory instrument called a mass spectrometer, levels of five key DNA adducts are measured in this test, including some that form as a result of cigarette smoking.

Traditionally, DNA for such tests had to be obtained by taking a blood sample and processing the white blood cells, which contain large amounts of the genetic material.

More recently, however, scientists found that DNA samples could be obtained more conveniently from saliva. The DNA is present in white blood cells found naturally in saliva and from cells shed from the lining of the mouth.

Chen envisions several uses for any potential commercial version of the test, which she said would probably cost several hundred dollars.

One, for example, might be health promotion among people exposed to carcinogens due to lifestyle, occupation, or other factors. Detection of high levels of DNA adducts in cigarette smokers, for instance, and follow-up tests showing a decline in DNA adducts, could encourage them to stop smoking.

Source: [American Chemical Society](#), via [Eurekalert!](#), a service of AAAS.

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