

BREAKING NEWS

Nicotine in e-cigs, tobacco linked to heart disease

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By Jen Christensen, CNN

Updated 11:59 AM ET, Mon December 16, 2013

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The inventor of the electronic cigarette, Hon Lik smokes his invention in Beijing on May 25, 2009.

Story highlights

E-cigarettes don't have cancer-causing toxins, but still deliver nicotine

Nicotine exposure hurts heart cells, new research shows

Cellular degradation due to nicotine exposure may lead to atherosclerosis

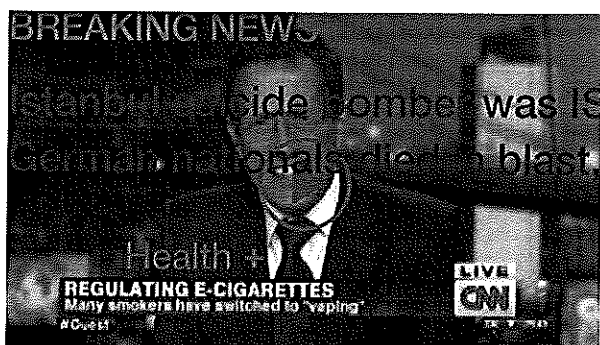
The nicotine delivered by cigarettes -- even the electronic versions -- may still contribute to heart disease, a new study suggests.

A new paper delivered at the American Society of Cell Biology annual meeting in New Orleans on Sunday suggests that nicotine can cause direct harm to cells in the heart.

Nicotine is an highly addictive substance found in tobacco and is also found in vegetables in the nightshade family like eggplant and tomatoes.

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E-cigarettes satisfy a smoker's craving for nicotine and mimic the physical movements of smoking, but were viewed as a healthier alternative by some since they don't contain the cancer-causing toxins of regular cigarettes. **a Turkish official says.**

Previous studies, such as one published in the journal The Lancet in September, have suggested e-cigarettes may be a more effective way for smokers to quit than nicotine patches or the "cold turkey" method.

In 2007, the Royal College of Physicians concluded, "If nicotine could be provided in a form that is acceptable and effective as a cigarette substitute, millions of lives could be saved."

TIME.com: Smoke from e-cigs still poses some second-hand risk

Smoking is the leading preventable cause of premature death, according to the American Heart Association.

For years, doctors have also known that smokers often develop heart problems in addition to lung problems.

Smoking increases a person's risk of developing atherosclerosis, a disease in which plaque, a waxy substance, builds up in the arteries, narrowing and hardening them over time and limiting blood flow.

Atherosclerosis can cause heart attacks, strokes, and can even lead to death. The connection between smoking and atherosclerosis has been unclear, but scientist Chi Ming Hai may have discovered the root cause of the problem in the new study.

The molecular pharmacology professor at Brown University exposed cells found in the heart to nicotine. After only six hours, a kind of cellular drill, called podosome rosettes formed and ate through tissue.

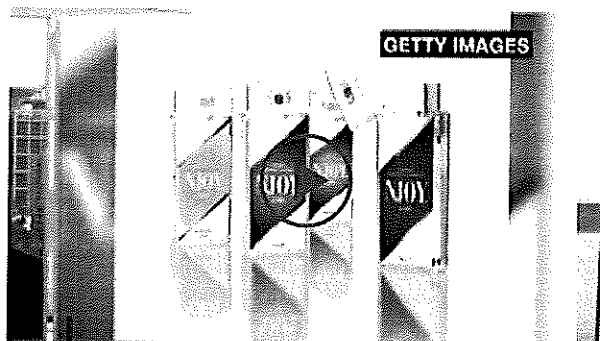
When this happens in the vascular smooth muscle cells which are in the middle layer of the arterial wall to the inner layer, this can cause plaque to form in arteries. This is what happened when Hai exposed human and rat cells to nicotine.

What that means is that the nicotine is acting like "a kind of cancer of the blood vessel" which is waking up

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these cells and breaking them away from their surrounding matrix and then migrating having an effect like it is almost like digging a hole through the wall, Hai said. "I think this is potentially very interesting and significant."

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It also means that the nicotine substitute of an e-cigarette may reduce a person's chance of having lung cancer, but it does not mean that their risk of heart disease will go away.

Heart

Live TV

Research is still in the very early stages, Hai said, but he believes it would be a good area for the government to invest in to better understand the connection between smoking and heart disease.

"We have certain pillars in this data that shows something significant is going on here and we need to understand it better," Hai said.

E-cigarettes: Healthy tool or gateway device?

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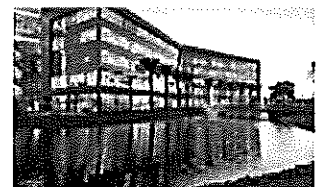
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