

Smoking may increase kidney disease risk in African-Americans

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Smoking harms nearly every organ in the body and causes many diseases. Credit: CDC/Debra Cartagena

Cigarette smoking is considered a universal health hazard, but it may be particularly damaging to kidney function among African-Americans smokers, according to new research in *Journal of the American Heart Association*, the Open Access journal of the American Heart Association/American Stroke Association.

"Cardiovascular and kidney diseases are closely linked, but few people are aware of the impact of smoking on kidney function," said Michael Hall, M.D., study lead author and an assistant professor of medicine at the University of Mississippi Medical Center.

Researchers determined rates of decline in kidney function in 3,648 African-Americans who were part of Jackson Heart Study, a study of cardiovascular disease in African-Americans ages 21 to 84 in the Jackson, Mississippi area. Participants completed three questionnaires over 12 years.

After adjustment for factors such as age, gender, physical activity, diabetes, hypertension and

prevalent cardiovascular disease, researchers found that:

the decline in kidney function was 83 percent higher overall in current smokers compared to those who had never smoked; the rate of kidney decline worsened with more smoking: those who smoked up to 19 cigarettes daily had 75 percent greater decline in kidney function; while those who smoked 20 or more cigarettes a day had a 97 percent greater decline in kidney function.

They also found current smokers had 38 percent higher inflammation levels compared to non-smokers, which suggests a possible mechanism between smoking and [kidney function](#) decline.

"It's important for those who have risk factors for [kidney disease](#) to realize that smoking is a significant risk factor and could ultimately end up leading to dialysis," Hall said. "And once you have kidney disease, it exacerbates the risk of cardiovascular diseases."

African-Americans are disproportionately affected by [chronic kidney disease](#) - a disparity attributed to higher rates of hypertension, obesity and diabetes - and may be more susceptible to potential adverse effects of smoking to the kidneys. Yet little data exist examining the effects of smoking and kidney disease in this group.

While African-Americans are less likely to smoke compared with whites, their metabolism of substances in cigarettes also differs compared with other ethnic groups.

Researchers note that menthol-flavored cigarettes, considered popular among African-American smokers, has been associated with increased concentrations of blood cadmium - a toxic metal used in protective coatings. Exposure to low levels of the metal has also been linked to [kidney damage](#).

Researchers said their findings on the detrimental effects of [smoking](#) and kidney disease are consistent with previous studies involving other ethnic groups, and they present an opportunity for healthcare providers to fill a void.

"We should be aggressive with screening patients who have risk factors for [kidney](#) disease by finding out if they smoke and, if so, encourage them to quit or cut back as much as possible if they can't quit," Hall said, "because there does seem to be a dose-dependent effect, meaning patients who smoke more are at higher risk for having worsening [kidney injury](#) over time."

Provided by American Heart Association

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