

# Former inmates have increased risk of high blood pressure

April 13 2009

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Young adults who have been incarcerated appear more likely to have high blood pressure and left ventricular hypertrophy, an enlarging of the heart muscle that is a common consequence of hypertension, according to a report in the April 13 issue of *Archives of Internal Medicine*, one of the JAMA/Archives journals. They also appear less likely to have access to regular medical care than those who have not been incarcerated.

"Incarceration has become increasingly frequent in the lives of young adults," the authors write as background information in the article. Between 1987 and 2007, the U.S. prison population tripled. More than one in 30 men and one in nine black men between the ages of 20 and 34 are incarcerated. "This rise in incarceration as a normative experience for young men and young black men in particular makes it especially important to understand the implications of incarceration on future health status."

Emily A. Wang, M.D, formerly of San Francisco General Hospital and the University of California, San Francisco, and colleagues studied the association of prior incarceration with future onset of high [blood pressure](#) ([hypertension](#)), diabetes and abnormal cholesterol in 4,350 individuals involved in the Coronary Artery Risk Development in Young Adults (CARDIA) study. Participants were enrolled in 1985 to 1986, at ages 18 to 30, and were followed up after two, five, seven, 10, 15 and 20 years.

Of these, 288 or 7 percent of participants reported being incarcerated

one year prior to or two years following their enrollment. Former inmates were more likely to have hypertension in young adulthood than those who had not been incarcerated (12 percent vs. 7 percent three to five years later), even after considering other related factors such as smoking, alcohol and drug use and family income. In addition, left ventricular hypertrophy was more common among those with a history of incarceration (2 percent vs. 0.6 percent).

"Former inmates were also more likely to lack treatment for their hypertension at the year seven examination (17 percent [former inmates] vs. 41 percent [no prior incarceration] treated) and in each of the follow-up visits during the entire 20-year duration of the CARDIA study," the authors write.

The mechanisms by which incarceration may lead to high blood pressure are not well understood, the authors note. Commonly cited factors such as drug and [alcohol](#) use, obesity and lower socioeconomic status may not entirely explain the association, since the current findings indicate an association between incarceration and hypertension after considering these factors. Other explanations include increased hostility and stress among former inmates, which may raise hormone levels that contribute to higher blood pressure.

"For the more than 7 million people that pass through U.S. jails and prisons each year, incarceration may be an independent risk factor for the development of hypertension and left ventricular hypertrophy, both of which put such persons at higher risk for clinical cardiovascular disease," the authors conclude. "Incarceration may be a cause for hypertension and cardiovascular disease, but may also present an underused opportunity for intervention and improving health and access to health care."

More information: Arch Intern Med. 2009;169[7]:687-693.

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