

Public release date: 28-Mar-2006

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Loneliness linked to high blood pressure in aging adults

University of Chicago study finds significant health risk

Loneliness is a major risk factor in increasing blood pressure in older Americans, and could increase the risk of death from stroke and heart disease, new research at the University of Chicago shows.

Scholars found that lonely people have blood pressure readings that are as much as 30 points higher than in non-lonely people, even when other factors such as depressive symptoms or perceived stress are taken into account, said Louise Hawkley, Senior Research Scientist with the Center for Cognitive and Social Neuroscience at the University of Chicago, and John Cacioppo, the Tiffany & Margaret Blake Distinguished Service Professor in Psychology. This is equivalent to the difference between a normal blood pressure of 120 and a level of 150 which signifies Stage 1 hypertension. Blood pressure differences between lonely and non-lonely people were smallest at age 50 and greatest among the oldest adults tested, those at retirement age.

Hawkley and Cacioppo are authors of the paper, "Loneliness is a Unique Predictor of Age-Related Differences in Systolic Blood Pressure," published in the journal *Psychology and Aging*. Other co-authors were Christopher Masi, Assistant Professor of Medicine at the University of Chicago, and Jarett Berry of the Department of Preventive Medicine, Northwestern.

The increase in blood pressure associated with loneliness is about the same magnitude as reductions attained through weight loss and regular physical activity in people suffering from hypertension. "By these standards, improvements in a sense of social connectedness may have clinical benefits comparable to lifestyle modifications," the authors wrote.

The team based their research on a study of 229 people aged 50 to 68. The randomly chosen group includes whites, African Americans and Latinos who are part of a

long-term study on aging. Members of the group were asked a series of questions to determine if they perceived themselves as lonely.

They were asked to rate their connections with others through a series of topics, such as "I have a lot in common with the people around me," "My social relationships are superficial," and "I can find companionship when I want it."

The research team also examined data on weight, alcohol consumption, smoking, blood pressure medications, and demographic characteristics and found that people who rated high on being lonely had a significantly higher blood pressure than non-lonely people with similar profiles on the other measures.

The research also showed that the normal increases in blood pressure associated with aging are augmented by loneliness.

The paper builds on Cacioppo's earlier research that demonstrated that the loneliness is related to increased peripheral vascular resistance among young people. Although both lonely and non-lonely people in that study experienced stress, subjects in both studies reacted to stress differently.

"Lonely people differ from non-lonely individuals in their tendency to perceive stressful circumstances as threatening rather than challenging, and to passively cope with stress by failing to solicit instrumental and emotional support and by withdrawing from stress rather than by actively coping and attempting to problem solve," Cacioppo said.

The study on young people showed that stress caused an increase in resistance to blood flow brought on by their response to stress. Greater resistance to blood flow in lonely people compared to non-lonely individuals could increase blood pressure over the lifetime of lonely people, Cacioppo said.

Longitudinal studies are underway to look at how loneliness, now associated with an increase in blood pressure, may play a causal role in the increase, he said.

"I'm surprised by the magnitude of the relationship between loneliness and hypertension in this well-controlled cross-sectional study," said Richard Suzman, Ph.D., director of the Behavioral and Social Research Program at the National Institute on Aging (NIA), a funder of the research "Older people's relationships are often disrupted by death, illness and geographic mobility. One of NIA's goals is to help determine what

can be done to improve the quality of relationships and social connectedness as a way to ease loneliness and reduce blood pressure."

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The Templeton Foundation also funded the research.
