



La science pour la santé
From science to health

Paris, June 12, 2018

Press information

Hypertension at Age 50 is Said to Increase the Risk of Developing Dementia

And what if, depending on the age at which it develops, hypertension had more or less significant consequences on maintaining our cognitive function? This was suggested by a study conducted by an Inserm team in partnership with the Department of Epidemiology and Public Health at University College London which has been monitoring changes in blood pressure and the onset of dementia in more than 10,000 volunteers since 1985. This research, published in the [European Heart Journal](#), suggests that, at the age of 50, high blood pressure, although still below the diagnostic threshold for hypertension, could be linked to a higher risk of developing dementia later in life, even for individuals with no other cardiovascular disorders.

Although studies linking blood pressure to an increased risk of dementia at an advanced age already exist, they focus on blood pressure values in a large population segment ranging from age 35 to 68, and have never been conducted in specific age groups.

With the Whitehall II study, Inserm researchers, in partnership with the Department of Epidemiology and Public Health at University College London (UCL), embarked upon the long-term follow-up of a population of 10,000 volunteers aged 35 to 55 when the study began in 1985, in order to study the link between age, hypertension, and dementia. The researchers measured the participants' blood pressure in 1985, 1991, 1997, and 2003. Participants were monitored until 2017 in order to detect the possible onset of dementia.

Less than 5% of participants developed dementia as they aged, and the mean age at diagnosis was approximately 75 years.

The research team studied two different types of blood pressure values: systolic pressure – measured as the heart contracts to eject blood into the arteries (systole) – and diastolic blood pressure – measured as the heart relaxes and fills with blood (diastole).

While diastolic pressure does not appear to have an impact on the risk of developing dementia, the researchers nonetheless observed that fifty-year-olds with a systolic pressure of 130 mmHg or over (according to the European Society of Cardiology, the limit value for diagnosing hypertension is 140 mmHg) had a 45% higher risk of developing dementia compared to individuals with a lower systolic pressure at the same age. No increase in this risk was observed among individuals with hypertension at age 60 or 70. Furthermore, the higher risk associated with blood pressure above 130 mmHg is also observed among individuals not developing cardiovascular disorders during the follow-up period: their risk was 47% higher compared to individuals without cardiovascular disorders, with a systolic pressure below 130 mmHg.

According to Archana Singh-Manoux, Inserm research director in charge of the research project and professor emeritus at UCL, these analyses "suggest that the impact of blood pressure on brain health is dependent on the duration of exposure; hence, individuals with high blood pressure at the age of 50 would be more likely to develop dementia than those who develop hypertension at 60 or 70." This could be explained by the fact that high blood pressure causes ministrokes which, although often undetected, are harmful to the brain and may ultimately lead to a decline in function.

"In this study, we were able to evidence different patterns of association according to the age groups studied," clarified Jessica Abell, the lead author of the article, postdoctoral researcher at Inserm and associate researcher at UCL, who adds that "these results could thus help redefine the age groups to be studied in order to assess the impact of hypertension on health." She concludes: "it is important to emphasize that these results originated from an observational study on a population sample, and cannot be directly used as predictive instruments for each individual. Defining the optimum limit value for diagnosing hypertension is currently the focus of the debate."

Sources

Association between systolic blood pressure and dementia in the Whitehall II cohort study: role of age, duration, and threshold used to define hypertension

Jessica G. Abell^{1,2}, Mika Kivimäki², Aline Dugravot¹, Adam G. Tabak^{1,3}, Aurore Fayosse¹, Martin Shipley², Séverine Sabia^{1,2†}, and Archana Singh-Manoux^{1,2*†}

¹INSERM, U1018, Centre for Research in Epidemiology and Population Health, Université Paris-Saclay, Hôpital Paul Brousse, Bât 15/16, 16 Avenue Paul Vaillant Couturier, 94807 Villejuif Cedex, France;

²Department of Epidemiology and Public Health, University College London, London, UK; and

³Faculty of Medicine, 1st Department of Medicine, 10 Semmelweis University, Budapest, Hungary

European Heart Journal : <http://doi.org/10.1093/eurheartj/ehy288>

Researcher contact

Inserm Research Director

Head of the "Epidemiology of Aging and Age-Related Diseases" Unit 1018

Epidemiology and Population Health Research Center

Tel.: +33 (0)1 77 74 74 10

Email: archana.singh-manoux@inserm.fr

Press contact

presse@inserm.fr



Access the [Inserm press room](#)