

Young adults with raised blood pressure may have increased risk of later heart problems

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Young adults with raised blood pressure (hypertension) might have a slightly increased risk of cardiovascular events such as coronary heart disease and stroke in later life, finds a study published by *The BMJ*

today.

But the researchers stress that the absolute risk is low, and because the evidence for [blood pressure](#) lowering treatment in young adults is limited, active interventions should be cautious, they say.

Associations between [high blood pressure](#) and cardiovascular risk have long been recognised, but most studies have included only middle aged or older people.

Yet levels of hypertension among young adults have been increasing in recent years, so further research is needed to assess the future risk of cardiovascular events in young adults with high [blood](#) pressure.

Researchers in China therefore analysed the results of 17 observational studies that investigated risk of cardiovascular events in adults aged 18-45 with raised blood pressure.

The studies involved approximately 4.5 million individuals and had an average follow-up of 15 years. Most studies were of high quality and took account of other important factors, such as age, sex, and body mass index.

Blood pressure was split into five categories based on the 2018 European guideline: optimal, normal, high normal, grade 1 hypertension, and grade 2 hypertension.

The results show a graded, progressive association between blood pressure categories and increased risk of cardiovascular events.

Among young adults with optimal blood pressure, the rate of cardiovascular events was estimated to be 1.97 per 1,000 person years.

Cardiovascular risk was found to be increased at a normal blood pressure level. For example, young adults with normal blood pressure had a 19% increased risk of cardiovascular events compared with the optimal group (equivalent to an extra 0.37 events per 1,000 person years).

For those with high normal blood pressure, the risk increased by 35% (equivalent to an extra 0.69 events per 1,000 person years) compared with the optimal group.

For those with grade 1 hypertension, the risk almost doubled (an extra 1.81 events per 1,000 person years) and for those with grade 2 hypertension, the risk was more than three times higher (an extra 4.24 events per 1,000 person years) than the optimal group.

Similar results were found for [coronary heart disease](#) and stroke, and the association was more evident in those older than 30 years.

Based on these findings, the researchers estimate that the number needed to treat for one year to prevent one cardiovascular event is 2,672 for participants with normal blood pressure, 1,450 for those with high normal blood pressure, 552 for those with grade 1 hypertension, and 236 for those with grade 2 [hypertension](#).

These findings are based on [observational studies](#), so can't establish cause, and the researchers point to other limitations, such as differences in study design and methods of measuring blood pressure.

However, strengths include the large sample size, long follow-up duration, and examining associations across different blood pressure categories.

As such, the researchers conclude that [young adults](#) with raised blood pressure might have a slightly increased risk of cardiovascular events in

later life.

Importantly, [cardiovascular risk](#) was found to be increased at a normal blood pressure level, and this should not be ignored, they add. However, because the evidence for blood [pressure](#) lowering is limited, active interventions should be cautious and warrant further investigation.

More information: Association between high blood pressure and long term cardiovascular events in young adults: systematic review and meta-analysis, *BMJ* (2020). [DOI: 10.1136/bmj.m3222](https://doi.org/10.1136/bmj.m3222) , www.bmj.com/content/370/bmj.m3222

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