

Mobile phone calls linked with increased risk of high blood pressure

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Talking on a mobile for 30 minutes or more per week is linked with a

12% increased risk of high blood pressure compared with less than 30 minutes, according to research published today in *European Heart Journal—Digital Health*.

"It's the number of minutes people spend talking on a mobile that matter for heart health, with more minutes meaning greater risk," said study author Professor Xianhui Qin of Southern Medical University, Guangzhou, China. "Years of use or employing a hands-free set-up had no influence on the likelihood of developing high blood pressure. More studies are needed to confirm the findings."

Almost three-quarters of the global population aged 10 and over own a mobile phone. Nearly 1.3 billion adults aged 30 to 79 years worldwide have high blood pressure ([hypertension](#)). Hypertension is a major risk factor for [heart attack](#) and stroke and a leading cause of premature death globally.

Mobile phones emit low levels of radiofrequency energy, which has been linked with rises in blood pressure after short-term exposure. Results of previous studies on mobile phone use and blood pressure were inconsistent, potentially because they included calls, texts, gaming, and so on.

This study examined the relationship between making and receiving [phone calls](#) and new-onset hypertension. The study used data from the UK Biobank. A total of 212,046 adults aged 37 to 73 years without hypertension were included. Information on the use of a mobile phone to make and receive calls was collected through a self-reported touchscreen questionnaire at baseline, including years of use, hours per week, and using a hands-free device/speakerphone.

Participants who used a mobile phone at least once a week to make or receive calls were defined as mobile phone users.

The researchers analyzed the relationship between [mobile phone usage](#) and new-onset hypertension after adjusting for age, sex, body mass index, race, deprivation, family history of hypertension, education, smoking status, blood pressure, blood lipids, inflammation, blood glucose, [kidney function](#) and use of medications to lower cholesterol or [blood glucose](#) levels.

The average age of participants was 54 years, 62% were women and 88% were mobile phone users. During a median follow up of 12 years, 13,984 (7%) participants developed hypertension. Mobile phone users had a 7% higher risk of hypertension compared with non-users. Those who talked on their mobile for 30 minutes or more per week had a 12% greater likelihood of new-onset high blood pressure than participants who spent less than 30 minutes on phone calls. The results were similar for women and men.

Looking at the findings in more detail, compared to participants who spent less than 5 minutes per week making or receiving mobile phone calls, weekly usage time of 30-59 minutes, 1-3 hours, 4-6 hours and more than 6 hours was associated with an 8%, 13%, 16% and 25% raised risk of high blood pressure, respectively. Among mobile phone users, years of use and employing a hands-free device/speakerphone were not significantly related to the development of hypertension.

The researchers also examined the relationship between usage time (less than 30 minutes vs. 30 minutes or more) and new-onset hypertension according to whether participants had a low, intermediate or high genetic risk of developing hypertension. Genetic risk was determined using data in the UK Biobank.

The analysis showed that the likelihood of developing high [blood pressure](#) was greatest in those with high genetic risk who spent at least 30 minutes a week talking on a mobile—they had a 33% higher

likelihood of hypertension compared to those with low genetic risk who spent less than 30 minutes a week on the phone.

Professor Qin said, "Our findings suggest that talking on a mobile may not affect the risk of developing [high blood pressure](#) as long as weekly call time is kept below half an hour. More research is required to replicate the results, but until then it seems prudent to keep [mobile phone](#) calls to a minimum to preserve heart health."

More information: Ye Z, Zhang Y, Zhang Y, et al, Mobile phone calls, genetic susceptibility and new-onset hypertension: results from 212,046 UK Biobank participants, *European Heart Journal—Digital Health* (2023). [DOI: 10.1093/ehjdh/ztd024](https://doi.org/10.1093/ehjdh/ztd024).

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