

More than eight-fold higher risk of major heart attack for under 50s who smoke

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Credit: Vera Kratochvil/public domain

Smokers under the age of 50 are more than eight times as likely as non-smokers to have a major heart attack, making them the most vulnerable of any age group of smokers, reveals research published online in the journal *Heart*.

All [smokers](#) have a significantly higher [risk](#) of having a heart attack than

[non-smokers](#) of the same age, but it's not clear what the magnitude of that risk is among different age groups.

To try and quantify this, the researchers drew on data for 1727 adults undergoing treatment for a classic type of [heart attack](#) known as a STEMI at South Yorkshire's regional specialist cardiothoracic centre in Sheffield, northern England, between 2009 and 2012.

A STEMI, or ST-segment elevation myocardial infarction, refers to the typical pattern seen on an electrocardiogram (ECG), indicating that a large portion of the heart muscle is dying.

The researchers also used data from the Office for National Statistics Integrated Household Survey (ONS-IHS), for the South Yorkshire region. Among other things, this collects information on smoking prevalence and other aspects of perceived health.

Almost half of the 1727 patients (48.5%) were current smokers, with roughly a quarter (just over 27%) former smokers, and a quarter (just over 24%) non-smokers.

Current smokers tended to be 10-11 years younger than ex or non-smokers when they had their STEMI. And along with ex-smokers, were twice as likely as non-smokers to have had previous episodes of coronary artery disease.

They were also three times as likely as non-smokers to have peripheral vascular disease, a condition in which a build-up of [fatty deposits](#) in the blood vessels restricts blood supply to the legs.

Based on the ONS-IHS data, the overall prevalence of smoking in South Yorkshire was 22.4%, with the highest prevalence among those under the age of 50 (just over 27%). But among STEMI patients under the age

of 50, smoking prevalence was almost 75%.

Overall, the data analysis showed that smokers were more than 3 times as likely to have a STEMI than ex- and non-smokers combined.

But the highest risk was among the under-50s who were nearly 8.5 times as likely to do so as former and non-smokers of the same age.

This risk fell with increasing age, dropping to a 5-fold difference among 50-65 year olds, and a 3-fold difference among the over 65s.

The researchers say that the much higher risk of STEMI in younger smokers is not easy to explain as this age group typically don't have many of the other contributory risk factors that might be seen in older smokers, such as high blood pressure, high cholesterol, or diabetes.

Smoking may therefore be the most important risk factor, they suggest, adding that other research shows that the fatty deposits furring up the arteries of smokers differ from those of non-smokers and seem to be more vulnerable to rupture.

This study is based on one regional specialist cardiothoracic centre in England, and it did not include patients who died before admission or who were deemed unsuitable for treatment at the centre.

Nevertheless, the findings prompt the researchers to call for greater efforts to be made to help younger smokers stub out their habit.

"All current smokers must be encouraged into smoking cessation therapy to reduce their risk of acute STEMI, with a focus on the youngest smokers whose increased risk is often unrecognised," they say.

Writing in a linked editorial, cardiologist Dr Yaron Arbel, of the Tel

Aviv Medical Center, Israel, agrees.

Efforts need to be directed to prevention and education, he says. "Most smokers know that smoking is bad. However, exact numbers have a tendency to hit home more often. Therefore studies like the present one are especially important."

He adds that as most young smokers don't have the conventional array of risk factors, commonly used treatment approaches are unlikely to make much difference.

"Our goal should be on providing them with the tools to achieve abstinence," he insists, adding that "in difficult cases, even reducing the number of cigarettes smoked daily might make a difference."

More information: Pronounced increase in the risk of acute ST-segment elevation myocardial infarction in younger smokers, *Heart*, [DOI: 10.1136/heartjnl-2016-309595](https://doi.org/10.1136/heartjnl-2016-309595)

Editorial: When will we learn that smoking is bad? *Heart*, [DOI: 10.1136/heartjnl-2016-310687](https://doi.org/10.1136/heartjnl-2016-310687)

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