

# Smoking number one risk factor for PAD

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Credit: University of Dundee

Smoking and diabetes are the two leading risk factors for peripheral artery disease (PAD), a narrowing of the arteries which can result in amputation, according to a study carried out at the University of Dundee and part-funded by the British Heart Foundation (BHF).

Diabetics who smoked were 16 times more likely to develop PAD than non-smoking non-diabetics.

Cholesterol came top of the list of [risk factors](#) for coronary [heart](#) disease (CHD), when the coronary [arteries](#) supplying the heart become narrowed and can cause a [heart attack](#).

Researchers from the University of Dundee followed 15,737 initially healthy people for 20 years in the Scottish Heart Health Extended Cohort (SHHEC). Over that time, 20 per cent developed CHD, while 3 per cent developed PAD.

Both PAD and CHD are caused by fatty, inflamed, fibrous 'plaques' called atheroma, developing within the walls of arteries, narrowing them and obstructing blood flow. In PAD, this process can lead to limb amputation and, in CHD, narrowing of the coronary arteries can result in a heart attack.

Although many of the risk factors were the same for both diseases, this was not true of all and their relative importance differed significantly. For example, a marker of inflammation was high up the list in predictors of PAD, but much further down for CHD.

The researchers say that this difference in risk factors may point to a new way to treat people suffering from PAD.

Around one in five people over the age of 60 in the UK have some form of PAD.

Professor Hugh Tunstall-Pedoe, Emeritus Professor and SHHEC study director at the University of Dundee said, "This 20-year study has enabled us to distinguish how the causes of atheroma, blocking arteries in the legs, differ from those in the heart.

"Years ago blood cholesterol was the notorious chief villain in the list of causes of atheroma. We have found it still true for the coronary arteries

of the heart, but cholesterol is demoted by smoking, diabetes, and evidence of inflammation, in the arteries of the legs.

"How, and why, these arteries differ, may give clues to further means of prevention."

Professor Metin Avkiran, Associate Medical Director at the British Heart Foundation, said, "This research suggests that CHD, which can lead to heart attacks, and PAD, which can lead to amputation, have some shared but also some different risk factors."

"We now need further research to understand how the common underlying damage – atherosclerosis – develops in different blood vessels in these diseases, and then develop new ways of preventing the devastation that they each cause."

Provided by University of Dundee

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