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**BBC**

**Diesel fume particles 'could raise heart attack risks'**



Chemical particles in diesel exhaust fumes could increase the risk of heart attacks, new research has suggested.

Edinburgh University scientists found minuscule particles produced by burning diesel can increase the chance of blood clots forming in arteries.

The blood clots can then lead to heart attacks or stroke.

The team measured the impact of diesel exhaust fumes on a group of healthy volunteers at levels found in heavily polluted cities.

The volunteers' reaction to gases found in diesel fumes, such as carbon monoxide and nitrogen dioxide, were compared with their reactions to tiny chemical particles found in the exhausts.

It was found that the particles, and not the gases, impaired the function of blood vessels.

Blood pressure

Dr Mark Miller, of Edinburgh University's centre for cardiovascular science, said: "While many people tend to think of the effects of air pollution in terms of damage to the lungs, there is strong evidence that it has an impact on the heart and blood vessels as well.

"Our research shows that while both gases and particles can affect our blood pressure, it is actually the minuscule chemical particles that are emitted by car exhausts that are really harmful.

"These particles produce highly reactive molecules called free radicals that can injure our blood vessels and lead to vascular disease."

He added: "We are now investigating which of the chemicals carried by these particles cause these harmful actions, so that in the future we can try and remove these chemicals, and prevent the health effects of vehicle emissions."

The particles, which are thinner than a millionth of a metre, can be filtered out of exhaust emissions by fitting special traps to vehicles.

The researchers said environmental health measures designed to reduce emissions should now be tested to determine whether they reduce the rate of heart attacks.

Professor Jeremy Pearson, associate medical director at the British Heart Foundation, said: "We've known for a long time that air pollution is a major heart health issue, and that's why we're funding this team in Edinburgh to continue their vital research.

"Their findings suggest that lives could be saved by cutting these harmful nanoparticles out of exhausts, perhaps by taking them out of the fuel, or making manufacturers add gadgets to their vehicles that can trap particles before they escape.

"The best approach isn't clear yet.

"For now our advice remains the same, people with heart disease should avoid spending long periods outside in areas where traffic pollution is likely to be high, such as on or near busy roads."

The research, funded by the British Heart Foundation, has been published in the European Heart Journal.

**DAILY MAIL**

**Diesel fumes 'increase the risk of heart attacks'**

**UPDATED:** 08:06, 15 July 2011

Diesel fumes are as bad for your heart as they are for the lungs, new research revealed today.

Scientists in Scotland have found that tiny particles produced when diesel burns are harmful to blood vessels and can increase the chances of blood clots forming in arteries, leading to a heart attack or stroke.

The research by the University of Edinburgh measured the impact of diesel exhaust fumes on healthy volunteers at levels that would be found in heavily polluted cities.



Scientists compared how people reacted to the gases found in diesel fumes - such as carbon monoxide and nitrogen dioxide - with those caused by the ultrafine chemical particles from exhausts.

The research, funded by the British Heart Foundation, showed that the tiny particles, and not the gases, impaired the function of blood vessels that control how blood is channelled to the body's organs.

The 'invisible' particles - less than a millionth of a metre wide - can be filtered out of exhaust emissions by fitting special particle traps to vehicles.

Particle traps are already being fitted retrospectively to public transport vehicles in the US to minimise the potential effects of pollution.

Dr Mark Miller, of the university's Centre for Cardiovascular Science, said: 'While many people tend to think of the effects of air pollution in terms of damage to the lungs, there is strong evidence that it has an impact on the heart and blood vessels as well.

'Our research shows that while both gases and particles can affect our blood pressure, it is actually the miniscule chemical particles that are emitted by car exhausts that are really harmful.

'These particles produce highly reactive molecules called free radicals that can injure our blood vessels and lead to vascular disease.

'We are now investigating which of the chemicals carried by these particles cause these harmful actions, so that in the future we can try and remove these chemicals, and prevent the health effects of vehicle emissions.'

Researchers want environmental health measures that are designed to reduce emissions to be tested to determine whether they reduce the incidence of heart attacks.

Professor Jeremy Pearson, associate medical director at the British Heart Foundation, said: 'We've known for a long time that air pollution is a major heart health issue and that's why we're funding this team in Edinburgh to continue their vital research.

'Their findings suggest that lives could be saved by cutting these harmful nanoparticles out of exhaust - perhaps by taking them out of the fuel, or making manufacturers add gadgets to their vehicles that can trap particles before they escape.

The best approach isn't clear yet.

'For now our advice remains the same - people with heart disease should avoid spending long periods outside in areas where traffic pollution is likely to be high, such as on or near busy roads.'

The results are published in the European Heart Journal.

**EXPRESS**

**DIESEL EXHAUST FUMES CAUSING BLOOD CLOT RISK**



Thursday July 14,2011

**By Dean Herbert**

INVISIBLE chemicals in diesel fumes are triggering heart attacks and strokes, an alarming new study has revealed.

Experts have claimed that millions of people could be at risk from microscopic particles produced by burning diesel that can damage blood vessels.  
  
The research by Scottish scientists found that breathing in fumes at the levels found on a busy city street for just one hour causes arteries to stiffen and inhibits the body’s ability to break down blood clots, which can lead to heart attacks.  
  
They found symptoms are triggered by particles less than a millionth of a metre wide found in diesel fumes.  
  
It comes as sales of diesel-powered cars overtook petrol- driven motors for the first time last year as spiralling costs forced cash-strapped motorists to look for more fuel-efficient options.  
  
Last year, diesel cars hit an all-time high of 50.6 per cent of the market.  
  
Yesterday, the Society of Motor Manufacturers and Traders (SMMT) said that diesel vehicles more than 10 years old are the worst polluters as they were built before strict European pollution regulations were introduced.  
  
Now health experts are demanding that manufacturers make further improvements to filters on diesel exhausts to ­reduce the risk of increasing heart disease in heavily polluted cities.  
  
Professor Jeremy Pearson, associate medical director at the British Heart Foundation (BHF), said: “Their findings suggest that lives could be saved by cutting these harmful nanoparticles out of exhausts – perhaps by taking them out of the fuel, or making manufacturers add gadgets to their vehicles that can trap particles before they escape.”

The team from the University of Edinburgh examined how people reacted to gases found in diesel fumes, including ­carbon monoxide and nitrogen dioxide.  
  
Published in the European Heart Journal, the study concludes that the microscopic particles contained in the fumes were more harmful than the deadly gases.  
  
Dr Mark Miller, of the University of Edinburgh’s Centre for Cardiovascular Science, said: “Our research shows that while both gases and particles can affect our blood pressure, it is actually the minuscule chemical particles that are emitted by car exhausts that are really harmful.  
  
“These particles produce highly reactive molecules called free radicals that can injure our blood vessels and lead to vascular disease.”

It comes five years after the BHF advised cyclists to wear face masks to cut down on the amount of diesel fumes they breathe in.  
  
A spokesman for the SMMT said: “Generally, emissions before 2000 were a lot higher than they are now.

Since new EU regulations came in, the levels of these gases and particles getting through filters have dropped by 90 per cent.  
  
“Those with older cars can have newer filters fitted to cut down on emissions.”

**REUTERS**

**Bad News: Diesel Particle Emissions Cause Heart Attacks**

Tue Aug 2, 2011 5:56am BST

by Jo Borras

Medical researchers at the University of Edinburgh have shown that chemical particles emitted by diesel exhaust fumes significantly increase the risk of heart attack in otherwise healthy adults.

That's right, people: in addition to environmentally damaging carbon emissions, political strife, the deaths of hundreds of thousands of soldiers and civilians, the contamination of waterways, and devastating ecological impact (even when things are going "right", like in Canada) we now have a fresh, new reason to hate big oil.

The research, funded by the British Heart Foundation, showed that it is these tiny diesel particulates, and not the gases, that noticeably impaired the function of small blood vessels and their ability to direct blood flow to the body's organs (the heart, in particular).

These particles *can* be filtered out of exhaust emissions through the use of particle traps (like those found in AdBlue and Bluetec cars, and those already being retro-fit to public transit vehicles here in the US) but these filters require consistent, expensive maintenance.

Considering the evident health risks, Professor Jeremy Pearson (Associate Medical Director at the British Heart Foundation) believes that policy-makers should clamp down on diesel particle emissions - despite the costs involved - rather sooner than later.

"Our research shows that while both gases and particles can affect our blood pressure, it is actually the miniscule chemical particles ... that are really harmful.

These particles produce highly reactive molecules called free radicals that can injure our blood vessels and lead to vascular disease, ... in the future we can try and remove these chemicals, and prevent the health effects of vehicle emissions."

Dr. Pearson's team of researchers are now pushing for environmental health measures that are designed to reduce diesel particle emissions in the UK (where diesel cars are significantly more common than in the US) to be tested to determine whether they reduce the incidence of heart attack, as well as greenhouse gasses.

Until that happens, though, Pearson advises that "people with (existing) heart disease should avoid spending long periods outside or in areas where traffic pollution is likely to be high ... or near busy roads."