

## Health fears as traffic fumes shown to damage immune system

Breathing in toxic traffic fumes could make people more vulnerable to colds, flu and other more serious infections, according to academics in Scotland. New research by scientists at Edinburgh Napier university shows for the first time evidence of a link between congested streets and illness. The experiments have demonstrated that nano-sized particles found in vehicle emissions can damage the immune system's ability to kill viruses and bacteria such as e-coli and MRSA. The findings could have serious implications for human health. Studies focused on antimicrobial peptides, tiny molecules found in the immune systems of humans and animals which increase in response to infection. Researchers at the university's School of Applied Sciences recently discovered that peptides have virus-killing properties that could prove crucial in developing a cure for the common cold. However, the latest work suggests microscopic particles found in air pollution can prevent peptides functioning properly. This suggests people living in highly polluted areas will be more vulnerable to infections and less able to fight them off. "This is an area of research that is very poorly understood," said study director Dr Peter Barlow, associate professor of immunology and infection at Edinburgh Napier. "We were extremely concerned when we found that air pollution particles could inhibit the activity of these molecules, which are absolutely essential in the fight against infection." He added: "It hadn't been reported before that air pollution can stop your immune system working, and that's why it's so concerning. "We simply didn't realise that air pollution could do this, so it has massive implications." He says the findings show urgent action is needed to tackle the problem. Scotland now has 38 Pollution Zones, where air quality safety standards are regularly exceeded. Some of the worst contamination is found in Hope Street and Dumbarton Road in Glasgow, St John's Road and Queensferry Road in Edinburgh, Aberdeen's Union Street and Wellington Road, Seagate in Dundee and Perth's Atholl Street. Traffic-derived air pollution, mainly composed of fine particles and toxic gases, has been linked with cancer, allergies, asthma, strokes, heart attacks, restricted foetal development, damaged lung development in children and the onset of dementia in adults. It is estimated to

cause the early death of 2,500 Scots each year. Air pollution campaigners say the latest findings back up the “mountain of evidence” that shows toxic traffic fumes are a major health hazard. Emilia Hanna, from Friends of the Earth Scotland, said: “Levels of toxic pollution are breaking both European and Scottish regulations on air quality in all our major cities, posing a threat to our health and in particular the health of those whose bodies are still developing. “Air pollution impacts disproportionately on those who are least responsible for causing the problem, including children, the elderly, and people living in poverty.”The Scottish government has a legal duty to clean up our air to within safe levels as soon as possible. It must roll out low-emission zones in all our major cities, re-regulate the buses to give local authorities a better ability to provide quality bus services, and invest 10 per cent of its transport budget in safe, high-quality walking and cycling paths to help people travel without polluting.”The Scottish Government’s Cleaner Air for Scotland strategy includes the introduction of the country’s first low-emission zone by 2018.A spokeswoman said: “Scotland is the first country in Europe to pass legislation based on World Health Organisation guidelines regarding some of the most dangerous pollutants, and our Cleaner Air for Scotland strategy sets out an ambitious programme of action to promote air quality.”The researchers are now preparing to launch a new national study to analyse health statistics and establish whether the findings are being borne out in the Scottish population.

Read more at: <https://www.scotsman.com/news/health-fears-as-traffic-fumes-shown-to-damage-immune-system-1-4535077>