

Study shows oxidants help maintain healthy blood pressure



(Medical Xpress) -- A new scientific study led by researchers at King's College London has shown that oxidants, a family of molecules known to be involved in ageing and the development of cancer, also have a positive function in the body in helping to regulate blood pressure.

The study published in *Nature Medicine*, led by Dr Philip Eaton from King's, and co-funded by the British Heart Foundation (BHF) and Medical Research Council (MRC), showed that oxidants 'steal' electrons from other molecules in a chemical reaction which helps prevent high blood pressure.

The researchers looked at mice carrying a mutation to a protein, called protein kinase G, which helps keep blood pressure under control. They showed that mice with the mutation developed high blood pressure because their protein kinase G was unable to sense oxidants normally. The mutation is very small, only enough to change one atom in protein kinase G, but it is enough to stop it from working.

Dr Philip Eaton, Professor of Cardiovascular Biochemistry at King's commented: 'Our work adds to a shift in how the scientific community views oxidants; there is a growing body of evidence they are produced in healthy cells where they play crucial regulatory functions. Now we have shown the importance of oxidants for lowering blood pressure during health, we are in an ideal position to assess the logical implication that some cases of high blood pressure occur because this pathway stops working properly.'

Dr Helene Wilson, Research Advisor at the BHF, added: 'It's not as simple as 'oxidants are bad' and 'anti-oxidants are good'. This study in mice brings us a step closer to understanding how blood pressure is controlled in people, showing for the first time that oxidants play an important role in blood pressure control in the body. It also highlights a potential target for new medicines to treat high [blood pressure](#), which is a major risk factor for heart attacks and strokes.'

Provided by King's College London

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