

Enzyme activity, smoking and heart disease

Host School/Institute: Heart Research Institute

URL: <http://www.hri.org.au/>

Project Code: HRI4

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Description of Project:

Atherosclerosis is an inflammatory disease of the arteries, in which fat is deposited into the arteries to form lesions. Subsequent rupture of these lesions is a major cause of heart attacks and/or strokes. The overproduction of reactive chemical species called oxidants by activated white blood cells has been suggested to contribute to the development of atherosclerosis and lesion rupture. It is known that smoking is a significant risk factor for atherosclerosis, and has recently been shown to affect the oxidant composition produced by white blood cells. Oxidative inactivation of key cellular enzymes is potentially an important mechanism during the development of atherosclerosis. This project will investigate how smoking-induced modification of the oxidant composition affects the activity of these enzymes, and will determine whether antioxidant supplementation is able to prevent this damage thereby modulating the progression of atherosclerosis.

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