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## Hygiene that works, or makes us work? Examining the "work of breathing" through negative pressure respirators

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### Abstract

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# Hygiene that Works, or makes us work? Examining the work of breathing through negative pressure respirators

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Respiratory protective devices (RPD) are commonly used to protect workers against the health effects of many substances including carcinogenic substances such as lead, silica and diesel particulate emissions; even though they are the lowest order in the Hierarchy of Control and require careful selection, fit, training and maintenance.

AS/NZS 1715: 2009 and AS/NZS 1716:2012 have provided guidance for manufacturers and end users on factors affecting performance such as filtration efficiency, filter resistance and user fit; however little has been done on useability.

A recent series of studies on negative pressure RPD's at the University of Wollongong are informing the current development of a suite of ISO standards anticipated to be adopted by Standards Australia in the near future.

The new ISO standards (Draft ISO 16975 RPDs- Selection, use and maintenance) introduces the concept of adding measured work rates to the selection criteria.

A significant gap in the research is that the physiological burden of respirator use in heavy industry, and the workplace evaluation of real time breathing rates for negative pressure respirators has not been conducted in the field.

This paper outlines the laboratory based studies conducted to date, examines the transferability of the findings to industrial settings, and identifies the information that Hygienists require to make informed decisions when recommending RPD's.