## **CPWR** KEY FINDINGS FROM RESEARCH



## **Overview**

Rotary hammers and hammer drills are used extensively in commercial construction for drilling into concrete for tasks including rebar installation for structural upgrades and anchor bolt installation. A CPWR-supported research team has developed a test bench for standardized measurement of dust, noise, force and vibration during rock drilling. Extended exposures to handle vibration may lead hand-arm vibration syndrome, causing injury to the nerves, bones, joints and blood vessels in the hand. In this experiment, the team tested carbide-tipped bits in four different states of wear, measuring drill handle vibration and productivity while drilling concrete block. Drill Bit Wear Decreases Worker Productivity – and Increases Vibration Exposures

## **Effect of Bit Wear on Hammer Drill Handle** Vibration and Productivity

Andrea Antonucci, Alan Barr, Bernard Martin and David Rempel. Journal of Occupational and Environmental Hygiene, 2017.

## **Key Findings**

Bit wear led to a small but significant increase in handle vibration.

Bit wear led to a large and significant reduction of productivity, so that workers were exposed to unhealthy vibration for longer periods of time.

Construction contractors should implement a bit replacement program to boost productivity and limit worker exposure to handle vibration.

**For more information, contact:** Alan Barr: alan.barr@ucsf.edu

See abstract: http://bit.ly/2v6UaBj

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