

THE ENGINEER AND THE PHYSICIAN: CAN WE UNDERSTAND EACH OTHER WHEN WE TALK ABOUT MACHINE VIBRATION?

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ABSTRACT

This reflexive study, based on an analysis of university curricula in Québec in the fields of occupational medicine and mechanical engineering, as well as on a qualitative analysis of a questionnaire sent to representatives of universities, aims to understand whether the physician and the engineer can speak the same language about the prevention of worker exposure to the vibrations produced by machines and/or industrial equipment. Exchanges between the two disciplines are rare and even nonexistent. What knowledge must be shared by the engineer and the physician regarding the design of machines or their field evaluation concerning prevention? What do engineers know about ergonomics, biomechanics, and the physical hazards of machines? What do occupational physicians know about modal analysis, tribology, or even machine vibration, all relevant themes in the field of vibration expertise? Is knowledge sharing or a language common to both disciplines necessary? How can occupational physicians understand the models that engineers create to reproduce the harmful effects of vibration on workers? Does the engineer have solutions to respond to the concerns of occupational physicians regarding the safety of machines and equipment, in the presence of a worker with vibration syndrome or low back pain caused by whole-body vibration exposure? Can the occupational physician provide his assistance to the engineer's concerns? The challenges of occupational physicians and engineers do not seem to dovetail. More specific ergonomic knowledge in the university curricula of both disciplines could possibly be the beginning of a common basis for the work of engineers and occupational physicians.