

Annual Conference of the Canadian Medical and Biological Engineering Society, Quebec City

Challenging 300 Years of Piano Teaching Practices with 21st Century Technology: Piano Playing-related Health Problems

Performing arts medicine (PAM) is a medical sub-specialty that began to evolve in the early 1980's in response to musicians seeking help for playing-related health problems (PRHPs). PRHPs can have a devastating impact on careers as well as on the overall health and well-being of musicians. Approximately 61% of classically trained professional musicians and 45% of students report a PRHP during their lifetimes. The PRHPs that most commonly affect musicians include musculoskeletal disorders, cumulative trauma disorders, soft tissue disorders, overuse/misuse injuries, neurological disorders, and psychological issues. PRHPs have typically been diagnosed and treated like other occupational health or sports-related injuries. However, this approach has not been a good fit when applied to musicians. The use of a medical model strategy within PAM programmes has failed to explore and address those attributes of music development and performance that are distinctive from (rather than similar to) sports. It has been possible for anyone with an interest in musicians' health problems to lay claim to having the most effective rehabilitation or prevention programmes for musicians' injuries, despite an alarming lack of evidence regarding accuracy of diagnoses, monitoring, and evaluations of outcomes to show effectiveness of the treatment, prevention or education programmes. This has created a demand for methodologically sound, musician-based research.

Since pianists form a large percentage of the musician population with PRHPs, researchers have recently focussed on studying the nature of musical training from beginner students to professional artists, as well as the educational practices of piano teachers. The art of music training is steeped in centuries of tradition—*anecdotal*, and rarely questioned. Technological resources now provide us with the opportunity to apply rigorous, scientific research methods in ways that truly combine art and science, with the goal of more accurate diagnosis, better treatment, and prevention of PRHPs. In this symposium we will present our collective research activities, which are ground-breaking projects melding music, medicine and technology. Following the presentation we invite the participants to discuss how technology can further enhance and be applied to these and future projects.