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I had the chance to attend and present at PAMA 2015 (Performing Arts Medicine Association) in Snowmass Colorado, for the third time since 2010.

The conference started with a tribute to Alice Brandfonbrener who passed away last year. Alice was one of the founders of PAMA in the 1980s, along with Richard Lederman and Robert Sataloff. She was also the first Editor of the journal devoted to Performing Arts Medicine: "Medical Problems of Performing Artists".

For the first time in some years, the keynote lectures of this year's conference were dealing with voice pathologies and problems of singers. Robert Sataloff, Professor of Otolaryngology, head and neck surgery at Drexel University College of Medicine, Philadelphia, and one of the pioneers of PAMA in the 1980s, gave two keynote lectures. The first dealt with common diagnoses and treatments in singers, with emphasis on the physical examination of the voice and larynx, and the issues around laryngitis and its treatment. The second lecture was dealing with the aging voice of singers, giving an account of the anatomical and physiological changes affecting the aging vocal apparatus, and the adaptations that need to be considered to maintain performance. This not only involves medical treatment and surgery in some cases, but also intensive retraining (voice therapy) with a multidisciplinary team.

These lectures on the voice were complemented by two wonderful presentations by Matthias Echternach from the Freiburg Institute for Musicians' Medicine, University of Music, Freiburg, Germany. Working in collaboration with Claudia Spahn from the same Institute, both Matthias and Claudia received the award for the "Richard Lederman Lectures". Their work was presented by Matthias Echternach. The first lecture dealt with the physiological insights for players of wind instruments, and was an observation of the physiology of playing a wind instrument, using endoscopy and real-time functional MRI (fMRI) with images taken at more than 20 frames per second. This technique made it possible to view a "fMRI video" of various wind players (horn, trumpet, clarinet, oboe, flute, recorder) and to observe the physiological processes of the respiratory system with the diaphragm and thoracic cage; and the actions the larynx, vocal folds, tongue, lips and velopharyngeal apparatus to maintain adequate seals and pressure while playing a wind instrument. A DVD of this talk is available on the following website for purchase: http://www.helblingchoral.com. This DVD could be used as a teaching or retraining tool for wind players, who often have preconceived ideas on how the respiratory system works when playing a wind instrument. The second lecture from Matthias was using the same techniques, but was dealing with singers and showed the physiological mechanisms at play involving subglottal pressure, the actions of the vocal cords and folds, and the adaptations of the vocal tract to perform different registers while singing. There were marked differences noted between the various registers of singers: baritone, male alto, tenor, soprano.

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There were of course many other topics covered during the conference. One afternoon dealt with talks relating to the epidemiology and prevalence of performance-related musculoskeletal disorders (PRMDs) affecting musicians, including: an ongoing systematic review of incidence and prevalence by Christine Guptill, University of Toronto, Canada; my own presentation on the psychometric evaluation of the Musculoskeletal Pain Intensity and Interference Questionnaire for Musicians (MPIIQM), which is now available as a user guide on the following website: http://www.musicianshealth.co.uk/mskpain.html; the examination of risk factors, i.e. the impact of playing-time on frequency and severity of pain by Judith Robitaille, University of Sherbrooke, Quebec; an account on how to perform good scientific research in terms of the fundamental concepts in research methodology, presented by Ester chou, University of Athens, Ohio.

Furthermore, research studies on various aspects of biomechanics and neurology were presented: the importance of mental imagery, involving the mirror neuron system (MNS) and the activation of several cortical areas during mental practice, presented by Serap Bastepe-Gray, Peabody Conservatory, Baltimore; the biomechanics and timing of the left hand during "shifting" in violin performance using motion capture, presented by Peter Visentin, University of Lethbridge, Canada; an EMG study on the influence of different clarinet thumb-rest positions on right thumb loading, presented by Kathryn Young, Louisana State University; an needle EMG and fMRI case study of a pianist, showing that the hyperactivation of the muscles of the left dystonic hand of a piano player correlated with increased cortical activity in the contralateral primary sensorimotor cortex and supplementary motor area, presented by Sang-Hie Lee, University of South Florida.

Several workshops were organised this year, and made it possible for attendees to interact with presenters. These workshops were dealing with techniques and exercises for singing; how to approach and treat performance anxiety; achieving an effortless violin technique; mindfulness to increase focus and concentration; the integration of voice and dance technique for the musical theatre performer; the use of a new technology, i.e. combined wireless EMG and motion capture technology to record limb positions and movements simultaneously with muscle activity patterns, load and fatigue.

All in all, it was a very good conference, and next year's conference will be held outside Aspen/Snowmass for the first time. This may appeal to more Europeans, since the conference will be held in New York from 6-10 July 2016, a short flight away! Submit your abstract before 1st November 2015 if you want to present: http://www.artsmed.org .