



## Sarah Upjohn

### Abstract

Musicians place extremely high demands on their bodies as a result of instrumental playing. High incidences of playing related injuries in professional classical orchestral musicians and Conservatoire students have been well documented in the literature, and many Conservatoires in the UK, the USA, and Australia now run injury-prevention and performance-wellness modules. However, research shows that these modules do not help if injuries are pre-existing and have occurred prior to attending Conservatoire. This work is based within a specialist music school for gifted and talented pre-conservatoire level young musicians aged between 9 and 18. There are about 185 pupils at the school, and the majority of them board. Many are international students. The majority of the pupils study western classical orchestral instruments, although there is also a thriving Jazz department. Many of the instrumental teachers at the school are affiliated to London Conservatoires, and many have portfolio careers combining teaching with performing. Music is central to life within the school, and a musically enriched environment is fostered. Practise sessions are timetables throughout the day, before academic lessons begin, and also into the evening. It is common for pupils to play their instrument for between 3 and 5 hours a day. Several pieces of scoping work have informed the development of a piece of Action Research, towards a Doctorate of Education at the University of Cambridge, and form the basis of this workshop. One piece of scoping work was an audit of physiotherapy notes which clearly identified five risk factors for playing related injuries in pupils at the school. One of these risk factors was the posture that pupils adopt to play their instruments. Further exploration of when these injuries occurred highlighted the issue of instrumentalists, such as violinists and some woodwind players, who typically stand during instrumental lessons and to practise, but who are required to sit during orchestral rehearsals and performances. Standing to play and sitting to play are, biomechanically, different activities, placing demands on different anatomical structures. Many of the pupils have never had a lesson about how to sit to play. This workshop has been developed to try and give basic, useful information about spinal anatomy and biomechanics, as well as a fun and practical experience of a less demanding way to sit while playing. It has been developed for use with young musicians and so far, has been used in a variety of settings, including within the school, and also as an aid to instrumental teachers. The aims of this workshop are to:

- explain the 5 risk factors for injury
- explore basic spinal anatomy and biomechanics

- enable participants to feel the effect on different muscle groups of different standing postures
- enable participants to feel the effect on different anatomical structures (including muscles, ligaments, joints, and inter-vertebral discs) of different sitting positions.
- enable participants to understand the role of 'habitual use' within posture
- enable participants to experience sitting in an anatomical neutral position that places optimal load on anatomical structures and reduces fatigue
- explain the effect of different sitting positions on orchestral musicians

## **Bio**

Sarah Upjohn is an education-researcher-physiotherapy-practitioner working within a specialist school for young musicians, where she was originally employed to treat playing related injuries. The realisation that the majority of these injuries were preventable, fuelled by a desire to make a change, led, in 2011, to her joining the first cohort of Doctorate of Education students at the University of Cambridge. Her research is based around and within the challenges of setting up an injury prevention and health promotion framework at the school. This involves combining evidence based knowledge and practice from the diverse fields of physiotherapy, occupational health, performing arts medicine, sports science, athletics coaching, dance training, and change management. Her supervisor is Professor Pam Burnard.