

# Abstracts

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**Bennell K, Khan KM, Matthews B, et al: Hip and ankle range of motion and hip muscle strength in young novice female ballet dancers and controls. *Br J Sports Med* 33:340–346, 1999.**

Are movement patterns as seen in older and more skilled dancers present at an early age, before intensive ballet training begins? This cross-sectional study evaluated a cohort of 77 Australian ballet dancers, aged 8–11 years, comparing them with a matched non-dancer group of 49. The authors measured active hip range of motion (ROM) and active turnout, as well as passive ankle and calf muscle ranges. They also measured isolated hip muscle strength in flexion, internal/external rotation, and abduction/adduction. The study clearly shows that not all novice dancers have hip ROM required to attain technically correct full turnout, forcing some of them to utilize other sources of external rotation. These nonphysiological movements may make them more susceptible to lower limb injury. Additionally, ankle dorsiflexion in this group was similar to that of elite junior (age 16 to 18) and professional counterparts, suggesting that demi-plié does not develop with training. Third, the study suggests that dancers should be encouraged to maintain motion in ranges not required by ballet, since this facility appeared to be restricted at even a young age. Of interest is the method of data collection, designed to permit the authors to compare their data accurately with those

obtained in other studies (of elite professional dancers).

**Thrasher M, Chesky KS: Medical problems of saxophonists: A comparison of physical and psychosocial dysfunction among classical and non-classical performers. *Saxophone Symposium* 24:77–84, 1999.**

In another facet of their institution's continuing World Wide Web-based survey of instrumentalists' problems, the authors report 82 voluntary respondents and their answers to a structured questionnaire. The questions were grouped into five areas: demographics, musculoskeletal problems, nonmusculoskeletal problems, lifestyle/environment, and feedback/comments. Musculoskeletal pain was determined at 16 bilateral body locations and its severity was measured on the five-point scale devised by Fry. There were 29 "classical" and 53 "nonclassical" saxophonists in the study group. Gender distribution was nearly equal in the classical cohort, but males had an 8:1 preponderance in the nonclassical group. Numerous physical problems were described, with frequency and severity differences noted between classical and nonclassical players. Both groups complained of frequent problems in their necks and their right upper back region. Right wrist difficulties were much more prevalent among classical performers, as were problems with the left hand/fingers, the right shoulder, and the right forearm. The leading nonmusculoskeletal complaints were fatigue, headaches, and depression, with classical players again demonstrating higher and more severe problem levels. Classical and nonclassical saxophonists also had differences in various lifestyle and behavioral areas, with the

nonclassical cohort reporting higher incidence of alcohol usage and of higher work-related stress levels.

**Krasnow D, Mainwaring L, Kerr G: Injury, stress, and perfection in young dancers and gymnasts. *J Dance Med Sci* 3(2): 51–58, 1999.**

This paper reports the evaluation of injuries, psychological stress, and perfectionism in three groups of young female elite performers. The study groups included 30 artistic gymnasts, 19 modern dancers, and 16 ballet dancers, all between the ages of 12 and 18 years. All subjects completed questionnaires on dance/gymnastics, experience in each endeavor, and a multidimensional perfectionism scale. Similar to the adult populations, each group experienced a high incidence of injury. There were a greater number of hip injuries in young ballet dancers than were typically found in the adult population. Variations were found among the groups in injury management methods and the duration of time that training was modified. Relationships between injury and stress, and between injury and perfectionism, were not uniform across the three groups. The authors stress the importance of distinguishing between positive and negative stressors in role-specific activities. They also identified some of the complexities of the stress/injury phenomenon and the multifaceted nature of the variable related to perfectionism. Finally, they emphasize the need for further research and education in the area of injuries to youth and the psychological correlates, hoping to minimize the negative effects on young elite performers.

**Phyland DJ, Oates J, Greenwood KM: Self-reported voice problems among three groups**

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of professional singers. *J Voice* 13:602–611, 1999.

This Australian study reports the results of a vocal health questionnaire that was administered to three groups of professional singers and to a matched group of nonsingers. The questionnaire solicited biographical data, information on speaking and singing voice-use behaviors, and vocal health over the previous 12 months in terms of experiencing vocal impairment, disability, and handicap. The responses of 79 opera, 57 musical theatre, and 31 contemporary (excluding rock) singers and 86 nonsingers were analyzed. Significant differences were reported between singers and nonsingers in the prevalence and nature of voice problems. Of the singers, 44% reported one or more occurrences of a diagnosed vocal condition, compared with 21% of the nonsingers; moreover, 69% of the singers experienced vocal disability over the previous 12 months compared with 41% of the nonsingers. The singers also reported a higher number of specific vocal conditions such as laryngitis, vocal nodules, and edema. There were no significant differences among the three different styles of singers in their experience of vocal impairment, disability, or handicap.

**Perrot X, Micheyl C, Khalfa S, Collet L: Stronger bilateral efferent influences on cochlear biomechanical activity in musicians than in non-musicians. *Neurosci Lett* 262:167–170, 1999.**

Cerebral hemisphere asymmetry has been found in various neurophysiological components of sound and music. The central nervous system controls the auditory sensory end organ via efferent projections (including the olivocochlear bundle). The authors

employed a noninvasive testing approach of contralateral suppression of otoacoustic emissions on 32 subjects, equally divided between professional musicians and nonmusicians. They found the musician group to have stronger suppression and, hence, larger efferent influences in both ears. There was no left-right difference in asymmetry of suppression between the two groups, with an interaural asymmetry present favoring the right ear. These findings suggest that the observed differences in olivocochlear activity reflect bilaterally enhanced activity of the cortical auditory structures in musicians rather than differences in cerebral hemispherical activity between the two groups. The authors conclude that the perceptual implications of their findings might include enhanced auditory selective attention, reduced auditory fatigability, and improved signal-in-noise perception.

**Zeitels S: Dysplasia and cancer of the vocal folds: Considerations for the performing artist and voice teacher. *J Singing* 55(5):35–38, 1999.**

In a review article directed primarily to singers, Dr Zeitels presents a clear and concise overview of a life-threatening disease, far different from the typical vocal-fold pathology that most performing artists encounter. Beginning with a discussion of hoarseness or dysphonia as the most common presenting symptom, the paper covers techniques of diagnosis and then proceeds to a larger section on treatment options. Details of phonosurgical reconstruction are also mentioned in relationship to surgical treatment of the disease. Although the paper contains many anatomic and other scientific terms, they are presented in a clear context for the nonphysician reader. The discussion is designed to provide the vocalist

and singing teacher with a basic understanding of the diagnosis and management philosophies of early vocal-fold cancer, although recognizing that controversy exists about its ideal management. The author recognizes that many individuals correctly perceive vocalists and voice teachers as voice professionals, who can provide information regarding vocal dysfunction.

**Garrick JG: Early identification of musculoskeletal complaints and injuries among female ballet students. *J Dance Med Sci* 3(2):80–83, 1999.**

Easy access to medical attention was provided to advanced students in a pre-professional ballet school. During a 20-month period, 38 of 54 students between the ages of 12 and 19 years reported 194 musculoskeletal complaints. The type and location of these complaints were compared with those of 1,353 injuries seen in a comparable age group evaluated in a sports medicine/dance clinic. The incidence rates of musculoskeletal complaints among the ballet students and the injuries found in the clinic population were similar. This suggests that the students' complaints were early manifestations of the injuries that necessitated formal medical care, and that providing the students information on the management of these injuries may constitute a useful preventive measure. The ideal result of this information would be a decrease in the number of injuries that advance to the stage where formal medical care becomes necessary. As a result of this study, the school has instituted programs of muscle strengthening (especially for abdominal muscles, quadriceps, and tibial/peroneal muscles), instructions on foot hygiene, use of ice for acute injuries, and medical referral for problems that either persist or worsen over three to four days.