Abstracts

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Dance rehabilitation is a dynamic process requiring careful, frequent communication between the dancer and a skilled therapist. The dancer must commit to an independent management of his or her injury, including trying to understand its cause(s); the therapist must understand the multiple factors involved in the etiology of the injury and be able to construct a progressive rehabilitation program geared to the specific dance demands of the patient. The author presents a thorough overview of this multifaceted problem, including sections on definitions, etiologies, and associated factors in dance injury. Physical and psychological characteristics of dancers are discussed also, as well as the movement demands of dance; the latter section clearly explains many of the associated physiological and biomechanical components of dance technique. The dance-specific rehabilitation program, which is in fact a form of work hardening, must address four often-overlooked kinesiological principles necessary for prevention of future injury: periodization of training, specificity related to the dancer’s future physical demands, overload training, and avoidance of overtraining. It also must address such etiologic factors in injury as posture, balance, movement, thinness, flexibility, strength, and cardiovascular fitness. Examples of rehabilitation protocols, functional progressions in therapy, and functional tests add further clarity to the paper. An extensive bibliography provides the interested reader additional opportunities for in-depth study.


The authors continue their investigations concerning changes in brain networks due to music learning; they describe this paper as “a short update.” They contrast the basic processing of music fundamentals by the primary auditory cortex with the more sophisticated levels of processing (harmony, melody, rhythm, complex sound patterns) occurring in the secondary and tertiary auditory cortical areas. It is known that two cognitive strategies are used for listening to music—a sequential or analytical strategy located primarily in the left hemisphere, and a parallel or global strategy located in the right hemisphere—and for this reason the authors feel that a static concept of hemispheric lateralization in music processing is not appropriate. They conducted three experiments with adolescent music students, demonstrating that musical expertise influences auditory brain activation patterns, and that changes in these activation patterns depend on the teaching strategies applied to the students. These changes were observed in all trained subjects and were independent of how successfully the subjects completed an experimental task. Short-term musical ear training in a third test population produced an increase of overall brain activation with a local maximum over the sensory-motor hand area. Their findings in all three experiments indicated a high interindividual variability of brain activation patterns during music listening.


Abrupt or hard glottal attack (HGA) is a type of vocal behavior often associated with benign vocal fold lesions. The authors wished to determine whether there was a difference in HGA frequency between hyperfunctional voice patients with and without vocal fold masses. The 147 subjects in the study group underwent a full otolaryngological evaluation, including objective voice measures, strobovideolaryngoscopy, and evaluation by a speech-language pathologist. Muscle tension dysphonia without vocal fold masses was diagnosed in 32 patients, 19 of whom were males; unilateral vocal fold masses (mostly cysts) were found in 57, including 29 males; bilateral masses were present in 58, including 13 males. Of the 45 females diagnosed as having bilateral pathology, 26 had a vocal cyst and contralateral reactive nodule, and 19 had bilateral vocal fold nodules. A control group of 49 professional speakers and singers had no vocal fold pathology. All groups with voice disorders demonstrated higher frequencies of HGA than the control group. No differences were found among the various groups of disorders. However, gender differences were found, in addition to differences between the subgroups of bilateral masses; in the latter circumstance, the group with bilateral nodules had a higher frequency of HGA than the group with cyst and contralateral reactive nodule.

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Medical Problems of Performing Artists


It has not been the editor’s usual practice to review multiple publications as a single item in this column, but the recent fortunate confluence of three related papers has prompted a change from that position. The arts medicine community traditionally is more likely to concentrate on caring for performers’ problems, yet the medical literature also contains many papers and books of historical interest, replete with reports and theories regarding the difficulties affecting musical composers. The three papers reviewed here are typical of that genre; they describe a variety of conditions in three composers, with information based on diaries, correspondence, newspapers, and other contemporary accounts. Joseph Haydn was afflicted with nasal polyps for most of his life and as an adult underwent multiple operations to ligate or excise them. Although the disease repeatedly prevented him from composing for days to weeks at a time, he was not regularly disabled by it. He died at age 77 from cardiac insufficiency. Frederic Chopin was chronically ill from childhood, principally from respiratory problems. The differential diagnoses in his case include (1) emphysema, possibly due to $\alpha_{1}$-antitrypsin deficiency, and (2) bronchiectasis, perhaps resulting from a mild case of cystic fibrosis. The autopsy, however, was far from conclusive in determining his cause of death. Johannes Brahms’ heavy snoring and invertebrate napping were two symptoms of a condition unknown during his lifetime, but which most likely affected him. It becomes even more likely when one considers the associated symptoms of obesity, chronic irritability, heavy alcohol consumption, and impotence that were present for the majority of his adult life. The author wonders whether the disorder contributed to his lifelong alienation from friends and marriage, thereby indirectly nurturing his devotion to creating his immortal music. [For a single source containing multiple articles on this topic, look at Seminars in Neurology, vol. 19, Supplement 1, 1999–Ed.]


The authors stress that individuals involved in the medical care of young dancers must understand the etiologic effects of growth, flexibility, and anatomical alignment on the production of injuries. Topics covered include the physiology and effects of turnout, the production of muscle group imbalances by dance training, and the physical prerequisites to pointe work. In their approach to injuries, the authors discuss several entities involving the lower extremities and spine; within this section is an extended presentation of the osteochondroses. Thorough and effective injury assessment and prevention must include attention to each dancer’s specific anatomy, use of proper technique, careful progression of dance skills, and regular monitoring of the intensity and amount of dance training. Their management of the injured dancer begins with identifying the specific anatomic diagnosis, and they stress the importance of being familiar with the demands of dance and the patterns of pain commonly associated with specific injuries. This knowledge helps differentiate between injuries that may be treated nonoperatively from those that require further investigation and different types of interventions.


Although this topic has not been the subject of many publications in the recent medical arts medicine literature, it still receives much attention in musical journals. This article, although published in a French horn specialty journal, has information that can be useful to all instrumentalists. Dr. Rosenthal, a neurosurgeon and hornist, begins by discussing some previously published inaccuracies, misconceptions, and misleading viewpoints on the topic. He follows with a clear and objective review of the science of anxiety and the use of propranolol, employing frequent use of lay terminology in parallel with scientific terms. He reviews a broad spectrum of literature dealing with the pertinent history, epidemiology, and musician experience with performance anxiety, and presents the results of multiple clinical studies on the use of beta-blockers. The author feels that common and mild symptoms of psychic anxiety, such as feelings of detachment, usually go unnoticed as they are overwhelmed by more obvious symptoms such as palpitations and sweating hands. These mild effects are unmasked when use of medication controls those more alarming problems that are produced by excessive adrenal hormone activity. He states that propranolol is not physically addictive, habit-forming, or illegal, and creates an interesting contrast between its accepted use in arts performance and its illegal use in precision sports. His concluding remarks confirm the safety of the medication when taken as prescribed, but he decries its use by students as deleterious to their development. Clearly, the issues surrounding the use of beta blockade have not been solved by this author’s work, but all instrumentalists can gain some significant insight and knowledge by reading the article.