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# Abstracts from the Current Literature

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**Batson G. Update on proprioception: considerations for dance education. *J Dance Med Sci.* 2009;13(2):35-41.**

Postural control and balance are foundations of dance skills. In this article, the author explains the science of proprioception and reviews the latest research on proprioceptive training to improve overall balance and coordination. Proprioception refers to the sensation of the position of the body or its parts, while static and in moving through space. This 'kinesthetic' awareness is critical in dance for controlling movement and maintaining balance, particularly when balance is challenged. While some studies suggest that dancers have a better kinesthetic sense than non-dancers, others show that they do not necessarily perform better on laboratory balance measures, and therefore tests for proprioceptive deficits, and specifically a balance battery, should be included in dance screening. A resource paper on the IADMS website titled "Proprioception," by the same author, is a useful companion reading, directed specifically to teachers. It provides examples of screening items and dance-specific exercises that could be incorporated into dancers' training.

**Bronner S, Ojofeltimi S. Gender and limb differences in healthy elite dancers' passé kinematics. *J Motor Behav.* 2006;38(1):71-9.**

Do a dancer's gender and preference for gesture and support limb affect proficiency in performing a lower limb dance skill? Those are the questions the authors studied with twelve elite professional dancers (six male, six female) via an analysis of passé performed in first position turn out. The dancers identified their preferences for the gesture leg in développé, and performed six passé movements with each leg. The kinematic analysis of data from body markers on the hip and lower limbs produced no differences in kinematic variables on the right versus left and preferred versus non-preferred limb. There was a high degree of consistency across each repetition. Only one gender difference, greater hip flexion in women than men, was found. This gender difference was expected, as women tend to have greater joint mobility than men. The consistency in skilled performance was also expected in highly trained dancers. The lack of lateral differences is explained by elite dancers performing a simple movement, well practiced due to many years of symmetrical training of the passé. The

authors suggest that further exploration is needed to identify whether gender and limb differences do exist in novices that diminish with training.

**Van Staden A, Myburgh CPH, Poggenpoel M. A psycho-educational model to enhance the self-development and mental health of classical dancers. *J Dance Med Sci.* 2009;13(1):20-8.**

From a review of relevant literature, the authors suggest that the professional ballet environment may be a contributor to difficulties encountered in both the personal and professional lives of dancers, such as self-identity and body image issues, eating disorders, perfectionism, defense mechanisms, relationship issues and problems with career transitions. In a pilot study they interviewed nine professional classical dancers, concluding that dancers were indeed strongly influenced by their environment and that the study provided justification for developing an intervention program for pre-professional dancer in a vocational setting to promote mental health, balanced functioning, and self-actualization as individuals. To that end they created an intervention model as a systematic approach to enhancing dancers' mental well-being. Key components of that model are the creation of a trusting environment, and the role of a trained facilitator who can guide the dancer through stages of self-awareness, self-regulation and self-development.

**Escamilla RE, Babb D, DeWitt R, Jew P, Kelleher P, Burnham T, Busch J, D'Anna K, Mowbray R, Imamura IT. Electromyographic analysis of traditional and non-traditional abdominal exercises; implications for rehabilitation and training. *Phys Ther.* 2006;86(5):656-71.**

Dancers frequently engage in abdominal strengthening regimens. This research project investigates which abdominal muscles or surrounding trunk muscles are activated during traditional and non-traditional exercises. The authors define traditional exercises as those which flex the trunk by lifting the head and shoulders off the floor toward the pelvis, known as "crunches". Non-traditional exercises include reverse crunches or exercises that activate the abdominal muscles but do not involve trunk flexion or use various commonly seen exercise devices. These non-traditional exercises engage the abdominal muscles differently and may activate other

muscles such as the small spinal muscles and the latissimus dorsi. The authors investigated which muscles were active during the six exercises tested. They discuss the muscular contribution of each exercise in detail, and provide pictures and clear, easy to read tables. The results of this study, and studies like it, can help danc-

ers strengthen effectively by knowing which exercises to include in a training protocol. For example, if a dancer is looking for a specific exercise for the lower abdominals or one that will engage the latissimus dorsi and the obliques at the same time, then this paper is a good resource.