
Abstracts from the Current Literature

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O'Neill JR, Pate RR, Hooker SP. The contribution of dance to daily physical activity among adolescent girls. *Int J Behav Nutr Phys Act.* 2011;8:87.

This study examined the contributions of dance classes to total moderate-to-vigorous physical activity (MVPA) of adolescent girls. The current physical activity guidelines for youth recommend at least 60 minutes of MVPA daily as a health objective. Physical education classes, organized sports and after-school programs may contribute to that objective. A particular challenge is maintaining female physical activity during adolescence. Since dance is a highly prevalent physical activity among adolescent girls, the authors wanted to examine objectively what contribution dance classes might make to MVPA. One hundred and forty-nine girls (11-18 yrs) taking classes in 11 dance studios participated in the study. Their physical activity was measured via an accelerometer worn during all waking hours over an eight-day period. Self-report from the participants indicated days and times they participated in the dance program. On dance program days, girls averaged 28.7 minutes of MVPA versus 16.4 on non-program days. Their structured dance classes contributed 29% to their overall weekly MVPA. This study demonstrates that dance classes can make an important contribution to increasing MVPA and reducing sedentary behavior. However, the overall daily average of 25 minutes found in this study is similar to several other studies of adolescent girls, and indicates that adolescent females are falling well short of the recommended 60 minutes of daily MVPA.

Denardi RA, Corrêa UC. Effects of instructional focus on learning a classical ballet movement—the pirouette. *J Dance Med Sci.* 2013;17(1):18-23.

This study explored the initial learning by novices of a complex ballet skill based on an instructional focus on its component parts. Seventy-two college students with no experience in classical ballet were taught a *pirouette en dehors* from fifth position with 160 learning trials and 20 retention trials a week later. Of interest in this study is how a complex skill is learned and whether focusing the instruction on a specific body part (head, arms, trunk, knees or feet) is effective versus generalized instruction. All participants were given verbal instructions and shown a video of the general characteristics of the skill. The experimental groups were then told to concentrate their performance on a specific body part.

Based on the literature, the authors expected that focusing on the head movement would be the most critical component, as it provides stabilization and balance to the vestibular system. The results showed no difference in learning between groups focused on different parts or compared to the control group. All groups showed improvement in their movement patterns, decreased their errors and maintained their performance in the retention phase. It appears that the generalized verbal instructions and videos provided were sufficient to assist beginners in coordinating the components of the skill, and that establishing this relationship may be more critical in the initial stages of learning than focusing on the individual components. The authors acknowledge that teaching the pirouette to absolute beginners is questionable pedagogic practice. The rationale was that in a motor learning study, one wants to examine the learning of a novel skill where subjects have no prior instruction or expertise. The implications of this study are that in teaching beginners or young dancers new complex skills, general instructions that promote comprehension of the overall movement coordination pattern are more effective than focusing on specific body parts.

Grove JR, Main LC, Sharp L. Stressors, recovery processes and manifestations of training distress in dance. *J Dance Med Sci.* 2013;17(2):70-8.

This paper review provides a comprehensive look at training distress in dance, with a well-developed model that provides an overview of training stressors, symptoms of distress and recovery processes. Training distress is the result of the physical and mental challenges of dance training that may affect the dancer's readiness to perform, and can include issues such as overtraining, staleness and burnout. These topics have been well examined in sports and in this article are applied specifically to the dance environment of professional and studio dancers. The authors describe many training stressors, such as the physical workload of training, additional fitness work and performance and the challenges of adapting to new works and new dance styles. Psychosocial stressors include environmental conditions, daily hassles, role stressors and major life events, perfectionism, a competitive environment, performance expectations, frequent traveling and weak support networks. Important components of the model are passive and active recovery processes to counteract the negative impact of these stressors. Some of these include physical and mental rest,

nutrition, massage, imagery and a variety of self-monitoring and self reflection procedures. An important contribution of this article is the identification of the symptoms of training distress when the recovery processes do not balance out the stressors. These symptoms can include perceived stress, mood disturbances and fatigue, somatic symptoms, sleep difficulties, and motivational changes. The authors suggest that regular monitoring of these symptoms is important and they review a number of assessment instruments that can be used to detect distress. Regular assessment could provide valuable information for adjustment of workloads and the training environments among vocational and professional dancers in order to optimize performance, and safeguard the dancer's physical and mental health.

Coubard OA, Duretz S, Lefebvre V, Lapalus P, Ferrufino L. Practice of contemporary dance improves cognitive flexibility in aging. *Front Aging Neurosci.* 2011;3:13.

Many researchers have studied the decline in cognitive functions that accompanies aging, including perception, memory, goal planning, and purposive action. In this paper, the specific focus is on attentional control, that is, the ability to maintain goal-directedness over time in the face of distractions and being able to coordinate concurrent activities. Cardiovascular and strength training programs have been shown to benefit cognitive functioning generally, and attentional control specifically, in a number of

studies, but very few have examined dance activities. These few dance studies have not distinguished between the physical fitness aspects of dance training and the motor skill learning components. In this study the dance activity was contemporary dance, focusing on improvisation, which was compared to two control activities—a fall prevention training or Tai Chi Chuan. Three components of attentional control (setting attention, suppressing attention and switching attention) were examined pre and post training via paper and pencil tests. Sixteen females (65-83 yrs) made up the experimental group and participated in dance classes one hour a week for six months. Although there was no difference in setting and suppressing attention in any of the three groups, switching attention and showing cognitive flexibility improved in the contemporary dance group. The authors' explanation of the results suggest that the nature of improvisational dance facilitates movement exploration and demands high attentional control, in contrast to memorization of sequences and repetition of stereotypical motor activities in the control activities. While a variety of dance activities have shown the benefits on fitness and general cognitive functioning in an aging population, this study demonstrates that creative, problem-solving dance programs, through constant movement adaptations, may have specific benefits on cognitive flexibility with a potential helpful impact on daily life functioning.