# How To Get A Dancer's Body

JUNE 6, 2013 BY JOEL MINDEN, PHD

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Dancers are known for their long, lean, and muscular bodies. A lifetime of dancing and proper nutrition might get you there but what can non-dancers do to achieve similar results without years of technical training?

For <u>posture and mobility</u>, yoga and Pilates are excellent. For musculature, <u>resistance training</u> is ideal. For low body fat, a solid nutritional strategy <u>is a better choice than exercise</u>, but <u>walking a lot</u> helps, too.

Creating the look of a dancer is one thing, but a dancer's body is also characterized by fitness. Should dancers rely on aerobic training or "cardio" for conditioning? Let's consider the nature of a highly athletic form of dancing to determine whether aerobic exercise should be part of your approach to developing the body of a dancer.

### DanceSport

One of the most athletic forms of dance is competitive ballroom and Latin dancing, also known as DanceSport. In international DanceSport competitions, there are five ballroom dances and five Latin dances. Dancers generally specialize in ballroom or Latin, but some dance both (i.e., they compete in all ten dances).

The dances vary in intensity but all are physically demanding. Take a look at the video below. Christopher Hawkins and Joanne Bolton demonstrate the Waltz, the first of the five ballroom dances performed in competition. Although their elegant movement appears effortless at first, a close examination of posture, poise, body rotation, single leg power, and foot strength reveals the incredible athleticism required to perform this dance at the highest level. *(go to internet connection to see video)* 

In contrast to the Waltz, the intensity of the Quickstep (the fifth dance performed in ballroom competitions) is immediately apparent due to the speed of the dance. In the video below, the top ballroom dancers in the world make it clear that ballroom dancing has little in common with steady state "cardio" performed for 30 or more minutes. (go to internet connection to see video)

From the Latin program, Jive is the fifth and fastest dance. Here is an example of the Jive in a showdance from Riccardo Cocchi and Yulia Zagoruychenko. (go to internet connection to see video)

# A Dancer's Body: Anaerobic Fitness

DanceSport is a highly **anaerobic** endeavor. Anaerobic means the production of energy to perform the activity does not depend on the availability of oxygen. Why does this matter?

For high-intensity, short-duration activities (lasting less then 2 minutes), energy must be produced quickly and the oxidative (aerobic) energy system *cannot keep up* with the energy demand of the activity. This is why extended moderate-intensity "cardio" is poor training for athletes who compete in power sports. Strategies to improve fitness for any sport should be consistent with the nature of the activity. I addressed some of these issues in a previous article.

Given the somewhat brief duration (90-120 seconds; World DanceSport Federation, 2011) and intensity of DanceSport, it can be logically compared to skating or gymnastics, which depend almost entirely on anaerobic energy systems. The data on the energy demands of DanceSport are unfortunately quite limited. Two studies are particularly compelling. I present their summaries below.

## Study 1: Intensity of DanceSport

In the earliest study of the energy demands of DanceSport, Blanksby and Reidy (1988) examined the heart rate and VO2 max (capacity to use oxygen during exercise) of competitive ballroom and Latin dancers after they performed simulated routines. Participants were 10 championship or professional ballroom couples in Western Australia in their early 20s. Measurements were conducted in two sessions. In the first, maximal values for heart rate (HR) and VO2 were obtained. In the second session, the researchers collected HR with transmitters attached to electrodes on the chest during simulated dance sequences of ballroom and Latin dance.

Each dance was performed, followed by a 15-20 second break to simulate the competitive environment. The couples waited 30 minutes, changed costumes, and then danced the second sequence. Heart rate was telemetered to enable the researchers to estimate average oxygen consumption.

#### Results

- For men and women in ballroom and Latin, dancers performed at 85 to 91% of maximal heart rate (on average).
- Oxygen consumption was in excess of 2.0 liters per minute during the dances, which has previously been described as "very heavy" to "extremely heavy" exercise (Astrand and Rodahl, 1986).
- Collectively, these data suggest that DanceSport is consistent with the concept of high-intensity exercise, and performance of DanceSport at a high level depends on efficiency in the anaerobic energy systems.

Although this study provides insight into the energy demands of DanceSport, it is limited in two important ways. First, energy expenditure was indirectly assessed by examining the relationship between heart rate and VO2. A direct measure of VO2 should be employed for greater accuracy. In addition, although inferences can be made about the anaerobic demands of this sport based on the intensity of the activity, Blanksby and Reidy (1988) did not assess blood lactate (a product of anaerobic metabolism) to determine whether metabolism in this style of dancing is consistent with that seen in other "anaerobic" sports.

## Study 2: Lactate Production

Bria et al. (2011) addressed these limitations in their examination of energy requirements of ballroom and Latin dance. In their study, participants were 12 Italian couples (6 in ballroom and 6 in Latin) with national or international level competitive experience.

There were 2 assessment days. On Day 1, indicators of fitness (heart rate, VO2, etc.) were assessed. On Day 2, the in-field assessment was conducted. VO2 and



HR were directly assessed during simulated dance sequences and blood lactate (BL) was measured after the dancers completed the sequences.

Costumes were worn, 5 dances were performed (each for 1:40) with 15-20 second breaks, and HR and VO2 were telemetered during the dance. BL samples were taken at rest after each dance and at the end of the sequence. In subsequent days, BL samples were taken during rest after Waltz on Day 1, Waltz and Tango on Day 2, and so on for 5 days and all 5 dances.

#### Results

In-field analyses revealed that dancers were performing at %HR max of 82 to 97 for men and 82 to 93 for women in ballroom. For Latin, the values were 90 to 97 and 92 to 98 for men and women, respectively. These findings were consistent with those of Blanksby and Reidy (1988).

The blood lactate data are perhaps the most illuminating aspect of the Bria et al. (2011) study. The data indicated

- In ballroom, BL production increased steadily through the first 3 dances (Waltz, Tango, and Viennese Waltz), decreased after Foxtrot, and increased yet again during Quickstep.
- In Latin, however, BL increased dramatically during the first dance, Cha-Cha, and remained at a high level throughout all 5 dances.

The images below show the accumulation of BL and changes in BL for ballroom and Latin dances, respectively. The white bars display the difference between resting BL and post-dance BL. The black bars demonstrate the change in BL from the previous dance.



Differences in dance-specific intensity between ballroom (above) and Latin (below) are clearly seen in these graphs



Based on these data, it appears that ballroom and Latin dancing differ with respect to the competencies needed to perform each successfully. The ballroom sequence appears to require the ability to increase or decrease intensity gradually throughout the series of dances (as evidenced by changes in BL production), whereas the Latin sequence requires the ability to perform immediately at a high intensity and maintain this intensity throughout the series of dances.

Collectively, these results demonstrate that, based on the accumulation of blood lactate (an indicator of glycolytic metabolism during exercise), DanceSport has significant anaerobic demands and the training methods should be developed accordingly.

## So how do I get a dancer's body?

- The appearance of dancer's body can be achieved through yoga, Pilates, proper nutrition, and resistance training
- Research on DanceSport can inform our understanding of the fitness of an athletic dancer's body
- DanceSport research suggests that the activity is highly **anaerobic**, and conditioning methods should be consistent with the nature of the activity
- The best ways to achieve anaerobic fitness are resistance training, <u>plyometrics</u>, and sprinting.

#### Sources:

Blanksby, B. A. & Reidy, P. W. (1988). Heart rate and estimated energy expenditure during ballroom dancing. British Journal of Sports Medicine, 22, 57-60.

Bria, S., Bianco, M., Galvani, C., Palmieri, V., Zeppilli, P., & Faina, M. (2011). Physiological characteristics of elite sport-dancers. Journal of Sports Medicine and Physical Fitness, 51, 194-203.



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