

Dance/USA

Task Force on Dancer Health

Dance With Your Heart:

Why Focusing on Cardiovascular Fitness is Essential for Dancers

Introduction

Dance is a demanding activity and is frequently used as an alternative to traditional exercise for those seeking to become healthier. Many dancers train multiple hours per day, multiple days per week; however, very little of this training addresses cardiovascular fitness and endurance. The structure of most dance classes involves brief bursts of intense activity while completing a combination, followed by a rest period to learn the next one. This format of movement training does not adequately address aerobic cardiovascular fitness, where the body relies on oxygen for energy for more long-term activity. Aerobic endurance is a key element in optimizing performance, minimizing fatigue, and reducing risk of injury.

How the System Works

“Cardiovascular”(CV) is the medical term used to refer to the work of the heart and the lungs. The heart is a muscle responsible for pumping blood throughout the body. Before its journey through the circulatory system, the blood is filled with oxygen by the lungs. When exercising, or dancing, the body needs more oxygen, which means the heart needs to pump blood faster. The strength of a heartbeat determines how far blood is pushed through the body per contraction. A stronger heart does not need to pump as fast to bring oxygen to the whole body, and like any other muscle, it can be strengthened. This is done by endurance training and conditioning, also referred to as aerobic exercise.

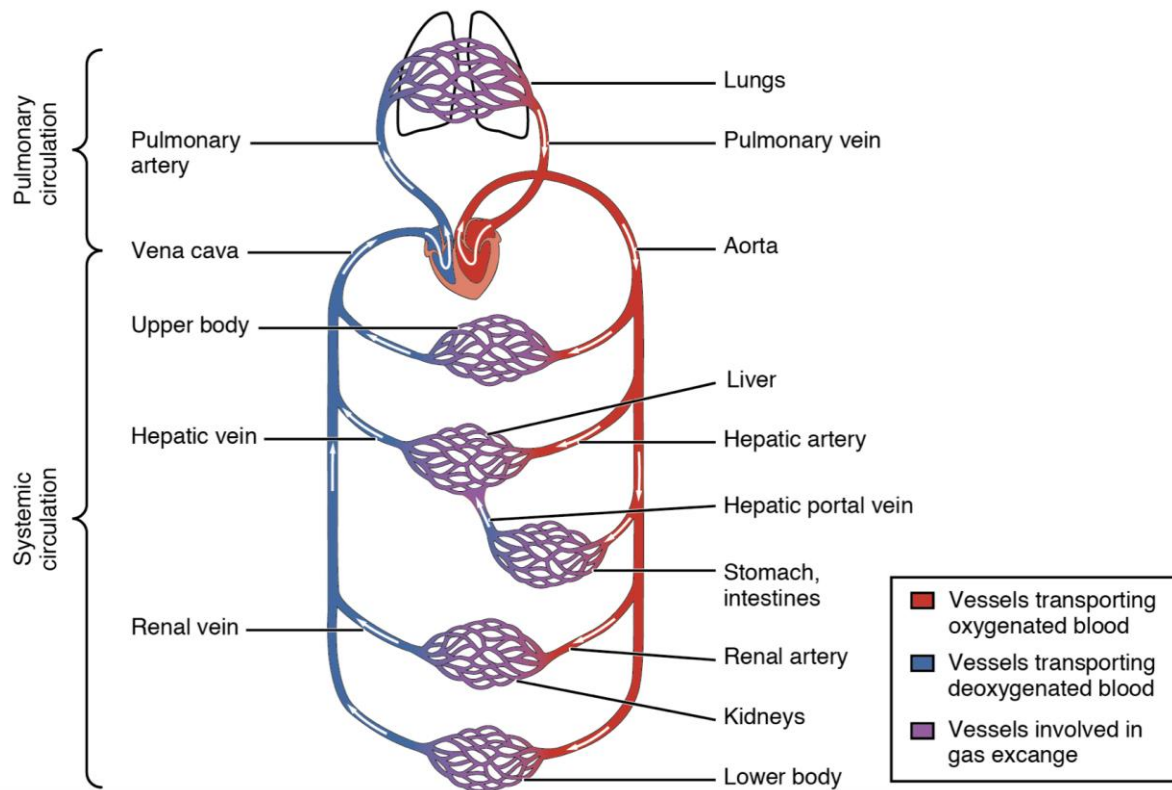


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Why Dancers Need to Focus on Cardio Fitness

All too often, the importance of cardiovascular conditioning is overshadowed by the desire to focus training on flexibility, range of motion, or strength. While all of these elements are vital to dance forms, cardiovascular endurance can provide a significant defense against injury. Most injuries occur when a dancer is fatigued.¹ By increasing CV fitness, dancers may be able to significantly decrease this risk. Endurance can also translate to positive impacts on the stage. Choreography can range from a few minutes long to well over an hour. Dancers with greater cardiovascular capacity are more likely to maintain desirable aesthetics like speed, power, and grace for the duration of a performance piece.

How to Test CV Fitness

The accelerated 3-minute step test is a simple way to gauge the level of your cardiovascular fitness. To find more detailed and accurate information regarding your cardiovascular fitness, visit with your physician or physical therapist.

To complete this test, collect the following items:

Stop-watch

12-inch step

Metronome (can use app on phone)

Set your metronome to 112 beats per minute. Follow the stepping pattern so that each step matches the beat of the metronome: up, up, down, down. Start your timer and repeat the stepping pattern for 3 minutes. At the end of the 3 minutes, immediately sit on the step and take your pulse for an entire 60 seconds. If you have never had to take your own pulse before, refer to the appendix at the end of this article for step-by-step directions. Many smartwatches also have features that monitor heart rate. Then, compare your heart rate to the table below to determine estimated cardiac fitness level.²

NORMS FOR 3-MINUTE STEP TEST (BY AGE)
(BASED ON 1 MIN RECOVERY HR)

MEN						WOMEN				
Fitness Category	18-25	26-35	36-45	46-55	56-65	18-25	26-35	36-45	46-55	56-65
0 - Excellent	<79	<81	<83	<87	<86	<85	<88	<90	<94	<95
1 - Good	79-89	81-89	83-96	87-97	86-97	85-98	88-99	90-102	94-104	95-104
2 - Above Average	90-99	90-99	97-103	98-105	98-103	99-108	100-111	103-110	105-115	105-112
3 - Average	100-105	100-107	104-112	106-116	104-112	109-117	112-119	111-118	116-120	113-118
4 - Below Average	106-116	108-117	113-119	117-122	113-120	118-126	120-126	119-128	121-126	119-128
5 - Poor	117-128	118-128	120-130	123-132	121-129	127-140	127-138	129-140	127-135	129-139
6 - Very Poor	>128	>128	>130	>132	>129	>140	>138	>140	>135	>139

Safe Cardio-Conditioning Options for Dancers

The nature of dance training can often lead to repetitive stress injuries (injuries to bone or muscles diagnosed by physicians), so the ideal conditioning program for a dancer should minimize similar repetitive stresses. Running can be a great option to improve cardiovascular health and endurance, though the repetitive impact at the foot and ankle may not be the most appropriate option for some dancers. Stair climbing, elliptical, and cycling are great lower-impact alternatives. Swimming offers the least amount of impact and stress to the body while also providing significant cardiovascular training. If access to a pool is a feasible option, this is a great place to start.

Once you've found an activity you enjoy, you will need to be specific about training intensity and duration to appropriately impact the aerobic conditioning system to see improvements in endurance. One option is to perform at moderate intensity for longer durations—think 15 minute intervals at a fast, comfortable pace. The other option is to push for high-intensity activity for 60-90 seconds at a time, with a 1-2 minute recovery in between sets. Aim to add 30-minutes of cardio training 2-3 days per week to see improvements in 8-12 weeks. Again, be mindful of *impact* level, as more than 5 days of impact training per week can increase risk of injury—and these numbers include impact in dance training.³

Appendix

How to Take Your Pulse

Method 1: Lightly press your index and middle finger of one hand to the inside end of the other wrist on the thumb side. Use a clock or stopwatch to count the number of pulses you feel for one minute.



On the Wrist

Photo Credit: Wikimedia Commons: Pulse (Wrist)

Method 2: Lightly press your index and middle finger to the neck, just to the side of the windpipe, below the jaw line. Use a clock or stopwatch to count the number of pulses you feel for one minute.



On the Neck

Photo Credit: Wikimedia Commons: Pulse (Neck)

References:

1. Twitchett E, Brodrick A, Nevill A, et al. Does physical fitness affect injury occurrence and time loss due to injury in elite vocational ballet dancers? *J Dance Med Sci*. 2010;14(1):26-31.
2. Bronner S, Rakov S. An accelerated step test to assess dancer pre-season aerobic fitness. *J Dance Med Sci*. 2014 Mar;18(1):12-21.
3. University of Colorado Hospital. *Sports Medicine: Training for Cardiovascular Fitness*. 2003.

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Disclaimer: The information on cardiovascular health contained in this paper is intended to help guide and inform the dancer. It is not meant to take the place of the advice of a medical professional. This information is provided by Dance/USA Task Force on Dancer Health.

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