
Functional Criteria for Assessing Pointe Readiness

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“**W**hen should a dancer begin training en pointe?” is frequently asked of ballet instructors and dance medicine professionals. Three factors have been traditional criteria for pointe readiness: chronological age, years of dance training, and ankle plantar flexion range of motion. We propose that lower extremity strength, neuromuscular control, and skill acquisition are additional factors that are also important to consider.

Pointe work traditionally begins just prior to or during the onset of the adolescent growth spurt at approximately 9 to 15 years of age. Ballet dancers typically mature at the later end of this age spectrum; therefore, chronological age alone seems an unreliable method for determining skeletal maturation, not to mention the physical and cognitive skills needed for pointe work. Nevertheless, in a survey of dance institutions across the United States, 96% of respondents cited age as the primary prerequisite for pointe training, with 39% citing age 12.¹

During maturation, growth and bone turn over are at their peak, and significant adaptations in strength, flexibility, and proprioception occur, influencing both motor control and psychological state.² Importantly, due to rapid growth changes, there is a decrease in motor ability and dynamic balance during adolescence, and as a result, dancers are unable to rely on formerly learned motor patterns.³ Instead, a period of reacquisition of skills, both cognitive and physical, occurs due to these growth-related changes.

The purpose of the present study was to determine if objective functional tests that assessed muscular strength, neuromuscular control, and dance skill could aid in determining a student's readiness for pointe training. Additionally, the students' dance teachers, who were blinded to the test outcomes, were asked to subjectively grade each student according to their perception of the student's technical skill and readiness to dance en pointe.

Three tests, which measure trunk control and dynamic lower extremity alignment, were found to be significantly predictive of dance teacher classification for pointe readi-

ness: Topples test, Airplane test, and Single-leg Sauté test. These tests assess the dancer's ability to maintain neutral alignment and center of mass over the base of support while doing complex movement. Although single screening tests are never foolproof determinants of success or risk, they may provide general benchmarks in determining a dancer's readiness to participate in pointe training.

Test Descriptions

Topples Test⁴

The modified Topples test was a single pirouette en de hors from 4th position with the gesture leg in full retiré and the support leg fully extended while maintaining a vertical trunk and demonstrating a controlled decelerated landing. The Topples test was closely associated with the teachers' assessments of pointe-readiness, a finding that supports the prior work of Lopez-Ortiz⁴ who found skilled dancers possessed a greater ability than their lesser skilled counterparts to control the “toppling effect” of a turn by exhibiting greater acceleration, less head movement and body sway, and longer landing phases.

Airplane Test⁵

The Airplane test requires the trunk to be pitched forward and the non-support leg extended to the back keeping the pelvis square to the ground (Figure 1). The subject performs five controlled pliés while horizontally bringing the arms together in order to touch the fingertips to the ground. Pass criteria were defined as at least 4 out of 5 pliés maintaining neutral lower extremity alignment which includes: knee tracking over the center of foot; maintaining a level pelvis with the foot, back and head in one line; and no foot pronation.

The Airplane test was the most sensitive for distinguishing between dancers identified by teachers as ready or not ready for pointe work. The Airplane test's horizontal positioning of the trunk and visual field demands significant control not only of the tri-planar motion during the plié but also of the long lever arm of the trunk and leg in the

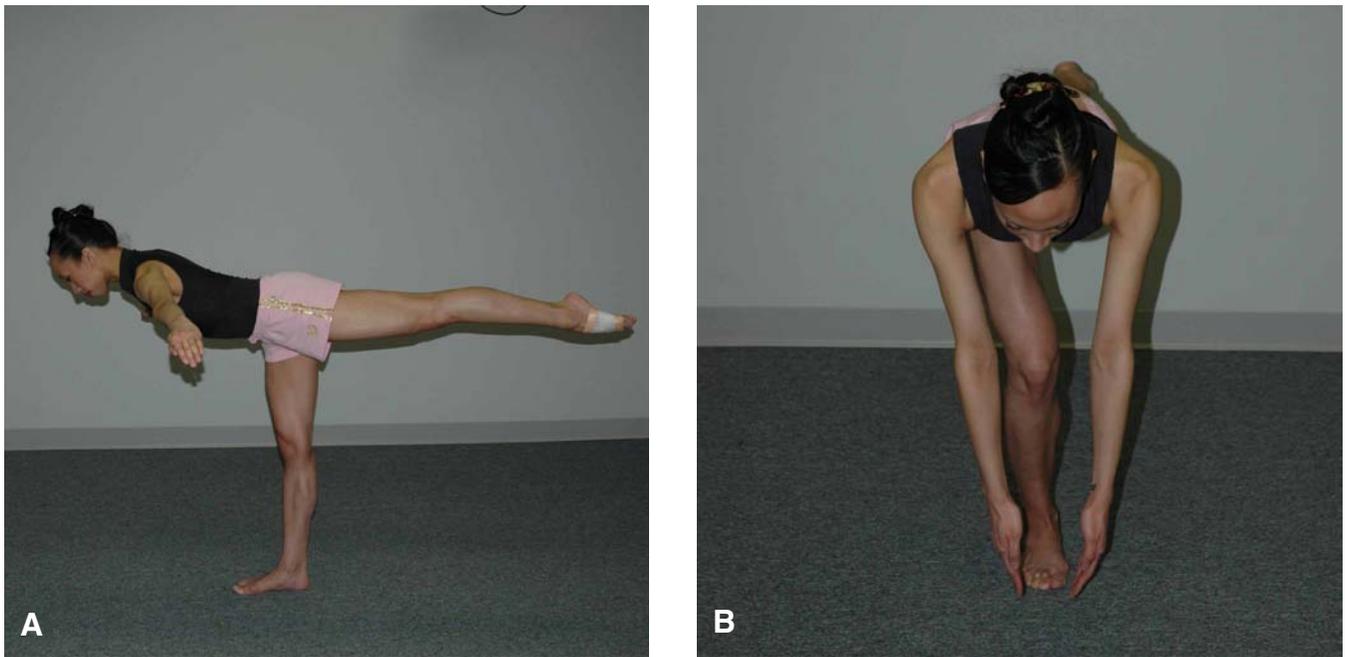


Figure 1 A, Airplane Test, starting position side view. B, Airplane Test, finishing position front view.

sagittal plane – a fundamental, dance-specific technique demand.

Single-leg Sauté Test

The Sauté test consists of 16 consecutive single-leg sauté jumps. The dancer was graded on the ability to maintain a neutral pelvic position, upright and stable trunk, neutral lower extremity alignment, toe-heel landing, and fully extended knee and pointed foot while in the air. Pass criterion was defined as at least 8 out of 16 properly executed jumps. The Sauté test proved to be the strongest predictor of pointe-readiness classification overall. While younger and less experienced dancers did not have the strength and control needed to perform the Airplane test, the more experienced dancers could complete more sautés while maintaining proper trunk control and lower extremity

alignment and were most often classified by teachers as ready to successfully perform pointe work.

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