



PASIG PERFORMING ARTS

SPECIAL INTEREST GROUP



ORTHOPAEDIC SECTION
AMERICAN PHYSICAL THERAPY ASSOCIATION



PASIG MONTHLY CITATION BLAST: No. 120

October 2016

Dear Performing Arts SIG members:

Upcoming Conferences! CSM 2017 will be February 15-17 in San Antonio, TX. At CSM 2017, the PASIG will provide main session programming “A Guide to Upper Extremity Nerve Entrapment Syndromes in Musicians,” by Janice Ying, DPT, OCS, Adriaan Louw, PhD, PT, CSMT, and Erin M. Hayden, PT, DPT, OCS

The 2017 Orthopaedic Section Annual Conference will be San Diego Hyatt Regency Mission Bay April 20-22.

Dancer Screening Update! PASIG is attempting to collect relevant information and resources to share with our membership regarding screening the young dancer (adolescent, pre-pro, collegiate). If you are currently participating in research and/or utilizing young dancer screening tools, please contact our Dancer Screening Chair, Mandy Blackmon, at mandydancePT@gmail.com. We will be meeting at CSM 2017 in San Antonio, TX to discuss and collaborate on current resources. Please let Mandy know if you will be at CSM and are interested in attending that committee meeting, as we need to plan for meeting space. Time: 1:00 PM, Thursday, February 16th.

Membership: Current PASIG members, please remember to update your membership:

https://www.orthopt.org/login.php?forward_url=/surveys/membership_directory.php

Social Media: For fun PT info and related performing artists info...

- 1) Facebook page: (closed) so, if you would like to be a part of the group, email me on Facebook: Dawn Doran and let me know you'd like to join.
- 2) follow PASIG on Twitter: @PT4PERFORMERS

Interested in a Performing Arts Fellowship? The American Board of Physical Therapy Residency and Fellowship Education (ABPTFRE) has approved the PASIG Description of Specialist Practice (DSP) for the Performing arts as an area of study. We are now working with the ABPTFRE to turn the DSP into a Description of Fellowship Practice (DFP). We anticipate the DFP will be available online by June 2016. This means that sites can begin forming fellowships in dance medicine, music medicine, theater medicine, etc. The PASIG will provide the fellowship criteria for accreditation. We may have a meeting on creating a performing arts fellowship at CSM 2017 on Saturday, February 18th, from 12:00pm to 1:30 PM. Please contact Mariah Nierman Mariah.Nierman@osumc.edu or Laurel Abbruzzese La110@cumc.columbia.edu if interested.

Looking for new committee members! There is room for new committee members, and students are welcome to participate. Please refer to the list below for contact information.

Annette Karim, President	2014-2017	neoluvsonlyme@aol.com
Rosie Canizares, Vice President/Education Chair	2016-2019	Rcc4@duke.edu
Janice Ying, Nominating Committee Chair	2016-2017	JaniceYingDPT@gmail.com
Laura Reising, Research Chair	2016-2018	lbreising@gmail.com
Amanda Blackmon, Dancer Screen Chair	2016-2018	MandyDancePT@gmail.com
Dawn Muci, Public Relations Chair	2016-2018	Dawnd76@hotmail.com
Mariah Nierman, Fellowship Taskforce Chair	2016-2018	mnierman@orthopedicone.com
Anna Saunders, Secretary/Student Scholarship Chair	2015-2017	annarosemary@gmail.com
Andrea N. Lasner, Nominating Committee	2015-2018	alasner1@jhmi.edu
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Laurel Abbruzzese, Fellowship Chair Asst.	2016-2018	La110@cumc.columbia.edu
Elizabeth Chesarek, Membership Chair	2016-2018	echesarek@gmail.com

Call for case reports: If you have a brief, clinically-focused case report on a performing arts PT patient, or a clinical commentary, please contact Annette Karim to submit your writing for the next Orthopaedic Physical Therapy Practice Magazine: neoluvsonlyme@aol.com

WE NEED MORE CONTRIBUTORS TO OUR MONTHLY CITATION BLASTS!!!!
 Past Monthly citation blasts are available, with citations and EndNote file, listed on the website:
http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes

TOPICS THAT HAVE BEEN COVERED RECENTLY INCLUDE:

Screening Tools for the Young Dancer (current)
Thoracic Outlet Syndrome and Nerve Entrapment in Instrumental Musicians
Plyometric Training in Dancers
HVLAT for Lower Extremity Conditions
Inguinal Disruption
Femoroacetabular Impingement
Hand and Wrist Conditions in Gymnasts
Factors in Optimal Turnout
Achilles Tendinopathy
Biomechanics and Posture in Musicians
Pilates
ACL Injuries in Dancers
Patellofemoral Pain and Dance
Neural Entrapments Found Among Musicians
Stress Fractures of the Foot and Ankle
Dry Needling
Dynamic Warm Up and Stretching
Platelet Rich Plasma Injections
Back Pain in Dancers

If you are interested in contributing by writing a citation blast or joining the research committee, contact me at lbreising@gmail.com.

Sincerely,

Laura

Laura Reising, PT, DPT, MS, OCS
Research Chair, PASIG Research Committee
Allegheny General Hospital, Pittsburgh, PA
Home: lbreising@gmail.com Work: Laura.Reising@ahn.org

PASIG Research Committee members:

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Sarah Edery-Altas, PT, DPT SEderyAltas@kessler-rehab.com (EndNote Organizer)

PERFORMING ARTS CONTINUING EDUCATION, CONFERENCES, AND RESOURCES

Musician Health Series, Janice Ying, PT, DPT, OCS
Glendale Adventist Therapy and Wellness Center, Los Angeles area (Eagle Rock), CA
<http://www.musicianshealthcorner.com/>
Healthy Musician Series - Overuse

Orthopaedic Section Independent Study Course. *20.3 Physical Therapy for the Performing Artist.*

Monographs are available for:

- Figure Skating (J. Flug, J. Schneider, E. Greenberg),
 - Artistic Gymnastics (A. Hunter-Giordano, Pongetti-Angeletti, S. Voelker, TJ Manal),
- and
- Instrumentalist Musicians (J. Dommerholt, B. Collier).

Contact: Orthopaedic Section at: www.orthopt.org

Orthopaedic Section-American Physical Therapy Association,
Performing Arts SIG

http://www.orthopt.org/content/special_interest_groups/performing_arts

Performing Arts Citations and Endnotes

http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes

ADAM Center

<http://www.adamcenter.net/>

Publications:

<http://www.adamcenter.net/#!vstc0=publications>

Conference abstracts:

<http://www.adamcenter.net/#!vstc0=conferences>

Dance USA

<http://www.danceusa.org/>

Research resources:

<http://www.danceusa.org/researchresources>

Professional Dancer Annual Post-Hire Health Screen:

<http://www.danceusa.org/dancerhealth>

Dancer Wellness Project

<http://www.dancerwellnessproject.com/>

Becoming an affiliate:

<http://www.dancerwellnessproject.com/Information/BecomeAffiliate.aspx>

Harkness Center for Dance Injuries, Hospital for Joint Diseases

<http://hjd.med.nyu.edu/harkness/>

Continuing education:

<http://hjd.med.nyu.edu/harkness/education/healthcare-professionals/continuing-education-courses-cme-and-ceu>

Resource papers:

<http://hjd.med.nyu.edu/harkness/dance-medicine-resources/resource-papers-and-forms>

Links:

<http://hjd.med.nyu.edu/harkness/dance-medicine-resources/links>

Informative list of common dance injuries:

<http://hjd.med.nyu.edu/harkness/patients/common-dance-injuries>

Research publications:

<http://hjd.med.nyu.edu/harkness/research/research-publications>

International Association for Dance Medicine and Science (IADMS)

<http://www.iadms.org/>

Resource papers:

<http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=186>

Links:

<http://www.iadms.org/displaycommon.cfm?an=5>

Medicine, arts medicine, and arts education organization links:

<http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=5>

Publications:

<http://www.iadms.org/displaycommon.cfm?an=3>

Performing Arts Medicine Association (PAMA)

<http://www.artsmed.org/>

<http://www.artsmed.org/symposium.html>

Interactive bibliography site:

<http://www.artsmed.org/bibliography.html>


Related links:

<http://www.artsmed.org/relatedlinks.html>

Member publications:

<http://artsmed.org/publications.html>

(Educators, researchers, and clinicians, please continue to email your conference and continuing education information to include in future blasts.



Screening Tools for the Young Dancer

Currently, limited studies exist that examine screening tools for adolescent or pre-professional dancers in regards to musculoskeletal predisposition to injury. The vast majority of dancers will report an injury during their career. A dance specific screen for pre-professional dancers is pivotal for the prevention of future injury and maintenance of healthy participants. The studies below investigate musculoskeletal aptitude, such as balance, functional turn out, aerobic fitness, physical deformity and the prevention of injury with the use of specific screening tools. With the development of an adolescent screening tool a baseline can be established. Dancers and instructors can use the information to identify physical limitations and work to correct them. There is not universal agreement on the purpose of the use of screening in the adolescent and pre-professional dancer. While some are attempting to identify impairments that may lead to injury, others are addressing a body's appropriateness to participate, while others are simply attempting to collect baseline data on dancers this age.

Tiernan Damas, SPT, CYT
Student Physical Therapist
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Baston G. Validating a dance-specific screening test for balance: preliminary results from multisite testing. *Med Probl Perform Art.* 2010;25(5):110-115. <http://www.ncbi.nlm.nih.gov/pubmed/21120268>.

ABSTRACT: Few dance-specific screening tools adequately capture balance. The aim of this study was to administer and modify the Star Excursion Balance Test (oSEBT) to examine its utility as a balance screen for dancers. The oSEBT involves standing on one leg while lightly targeting with the opposite foot to the farthest distance along eight spokes of a star-shaped grid. This task simulates dance in the spatial pattern and movement quality of the gesturing limb. The oSEBT was validated for distance on athletes with history of ankle sprain.

METHOD: Thirty-three dancers (age 20.1 +/- 1.4 yrs) participated from two contemporary dance conservatories (UK and US), with or without a history of lower extremity injury. Dancers were verbally instructed (without physical demonstration) to execute the oSEBT and four modifications (mSEBT): timed (speed), timed with cognitive interference (answering questions aloud), and sensory disadvantaging (foam mat). Stepping strategies were tracked and performance strategies video-recorded.

RESULTS: Unlike the oSEBT results, distances reached were not significant statistically ($p = 0.05$) or descriptively (i.e., shorter) for either group. Performance styles varied widely, despite sample homogeneity and instructions to control for strategy. Descriptive analysis of mSEBT showed an increased number of near-falls and decreased timing on the injured limb. CONCLUSIONS: Dancers appeared to employ variable strategies to keep balance during this test. Quantitative analysis is warranted to define balance strategies for further validation of SEBT modifications to determine its utility as a balance screening tool.

Filipa AR, Smith TR, Paterno MV, Ford KR, Hewett TE. Performance on the Star Excursion Balance Test Predicts Functional Turnout Angle in Pre-pubescent Female Dancers. *J Dance Med Sci.* 2013;17(4):165-169. doi:10.12678/1089-313x.17.4.165.

ABSTRACT: The purpose of this study was to determine if there was a predictive relationship between performance on the Star Excursion Balance Test (SEBT) and functional turnout angle (FTA) in prepubescent female dancers. Ten dance students, ages 5 to 9 years (mean: 7.3 years), were recruited for this study. The SEBT required the subject to reach in the anterior, posterior-medial, and posteriorlateral directions with her free-limb foot while standing on the reference limb. A composite reach score was determined by calculating the sum of distance reached in the three directions and normalizing to leg length. The FTA was assessed in first position by measuring the angle of bisection between the second and third metatarsals and the midpoint of the calcaneus. Linear regression was used to determine if there was a predictive relationship between performance on the SEBT and FTA in this cohort. The subjects demonstrated a mean FTA of $90.3^\circ \pm 17.7^\circ$. Composite reach on the dominant limb normalized to leg length ($81.4 \pm 11.1\%$) during the SEBT was a significant predictor of FTA ($r(2) = 0.49$, $p = 0.02$), while performance on the non-dominant limb ($81.9 \pm 10.8\%$) indicated a trend toward a predictive association ($r(2) = 0.35$, $p = 0.07$). A decreased composite reach score was predictive of decreased FTA. These measurements may serve as an important screening tool for identifying dancers at risk for lower extremity injury.

Liederbach M. Screening for Functional Capacity in Dancers Designing Standardized, Dance-Specific Injury Prevention Screening Tools. *J Dance Med Sci.* 1997;1(3):93-105.

ABSTRACT: Well-designed screening tools that measure functional capacity in dancers can yield powerful objective data for the dance educator and clinician. Integrating concepts from the broader disciplines of epidemiology, outcomes, and ergonomics, dance science professionals can develop specific tests to establish normative values for their group in order to set injury prevention, training adaptation, and skill acquisition goals with individual dancers. Suggestions for standardization procedures to enhance comparisons within and between dance populations are presented along with examples of traditional and dance-specific screening tests.

Liederbach M, Spivak J, Rose DJ.. Scoliosis in dancers; a method of assessment in quick-screen settings. *J Dance Med Sci.* 1997;1(3):107-112.

ABSTRACT: Scoliosis is reportedly a common clinical presentation in classical dancers and has been associated with an increased incidence of stress fracture, hypoestrogenism, and muscle imbalance. However, standardized measurement protocols have not been instituted for the population of dancers in the mass-screening environment, nor have criteria for diagnostic and referral ranges been clearly established in this population. This paper describes a cost-effective, reliable, valid, and clinically relevant method of screening scoliosis in dancers and reports on the findings from 947 classically-trained adult dancers screened for scoliosis using this method over a three year period. By the criteria we established, 8% of the dancers screened possessed a scoliotic curve that merited referral to a spine specialist for further evaluation. Dancers with axial asymmetries also reported a higher incidence of amenorrhea and back pain than dancers without asymmetries.

Molnar M, Esterson J. Screening students in a pre-professional ballet school. *J Dance Med Sci.* 1997;1(3):118-121.

ABSTRACT: We have the unique privilege to work on site twice a week with pre-professional ballet dancers, ages 12 to 18, at the School of American Ballet. In order to learn more about the young women at the school, and to design an education program that addresses their conditioning needs, we designed the screening program outlined below. The educational plan that we are in the process of developing takes into account the student's environment, their growth stage, and their needs as ballet dancers. These students attend between eight to twelve dance classes per week, and in preparation for performances often add 1.5 to 3 hours of dancing to their days. Students begin elementary pointe work when they are an average of 10 years old and gradually progress to full pointe classes. The dancers also have the same type of academic responsibilities as students enrolled in regular school programs. In addition to the rigorous demands of ballet and scholastics, these students are in an especially critical period of bone growth

and sexual maturation. Among non-dancers, the female skeleton is growing the fastest at 11.7 years of age,¹ and the mean age of menarche is 12.5 years.² During adolescent growth spurts the skeleton is less dense and more fragile because of the thinning of cortical bone to provide calcium for the longitudinal growth of cancellous bone,³ therefore the risk of fracture is higher. Nutrition also needs to be addressed since adolescence is a critical time for bone mass acquisition.³ Fortunately, there is a nutritionist for the students on staff at the school. In order to help these young dancers with the strenuous demands of ballet, it is imperative to take into account bone growth, hormonal status, growth spurts, and nutrition.

Potter K, Galbraith G, Baas J. Screening for improved dance function. The IADMS Bulletin for Teachers. 2011;3(1):14-17.

Imagine a world where dancers are able to learn specifics about their physical condition similar to what commonly occurs with other athletes. Then imagine that by performing some simple exercises given by the teacher and/or a team of medical professionals cognizant of the unique demands of dance, the dancer happily reports later that many of her basic dance skills have improved and she generally feels better about herself and her dancing. These worlds do exist, and new ones are being created by dedicated teachers and medical professionals in dance companies, schools, conservatories, and universities.³⁻⁵

As is the case with modern fact finding, dancers use the internet to get information about various issues related to dance, health, nutrition, anatomy, and injury prevention, and are also learning about the value of wellness and screening.⁶ They are also becoming aware of the growing number of medical professionals who are conducting research in dance medicine and science and are dedicated to helping dancers train more effectively and efficiently and dance longer. In many countries there is an emerging trend toward preventative medicine in health care systems that involve screenings. The implementation of dance screening has immediate and potentially long term benefits for dancers.

So what is dance screening and why do it? A typical dance screen is a series of tests designed to assess the overall well-being and functional capacity of dancers. The data collected are used to provide a physical, medical, nutritional, and/or psychological profile for each dancer. The results of a screen can help teachers and other dance professionals enable dancers to realize their full potential, and may also “help detect potentially life-threatening or disabling medical or musculoskeletal conditions that may limit a dancer’s safe participation and help to detect medical or musculoskeletal conditions that may predispose dancers to injury and/or illness during their season.”⁷ More importantly, many professionals have suggested that screening can play a role in enhancing a dancer’s ability and may help them change patterns of movement that might result in stronger bodies and better

dancing.⁸⁻¹⁰ It is very important that screens are **NOT** used as a test of acceptability into a company or school. Rather, at the very heart of contemporary approaches to screening is the goal of providing a set of tools to support dynamic interactions between dancer, teachers, and other professionals for the benefit of the dancers.

Rakov S, Bronner S. An accelerated step test to assess dancer pre-season aerobic fitness. *J Dance Med Sci.* 2014;18:12-21.

<http://www.ncbi.nlm.nih.gov/pubmed/24568799>.

ABSTRACT: As the technical performance demands of dance increase, professional companies and pre-professional schools are implementing pre-season screenings that require an efficient, cost effective way to measure dancer aerobic fitness. The aim of this study was to assess an accelerated 3-minute step test (112 beats·min⁻¹) by comparing it to the well-studied YMCA step test (96 beats·min⁻¹) and a benchmark standard, an incremental treadmill test, using heart rate (HR) and oxygen consumption (VO₂) as variables. Twenty-six professional and pre-professional dancers (age 20 ± 2.02 years) were fitted with a telemetric gas analysis system and HR monitor. They were tested in the following order: 96 step, 112 step, and treadmill test, with rest to return to baseline heart rate between each test. The step and treadmill tests were compared using Intra-class Correlation Coefficients [ICC (3, k)] calculated with analysis of variance (p < 0.05). To determine whether there was a relationship between peak and recovery HR (HR_{peak}, HR_{recov}) and VO₂(VO_{2peak}, VO_{2recov}) variables, Pearson product moment correlations were used. Differences due to gender or group (pre-professionals versus professionals) were explored with MANOVAs for HR_{peak}, VO_{2peak}, HR_{recov}, VO_{2recov}, and fitness category. The 112 step test produced higher HR_{peak} and VO_{2peak} values than the 96 step test, reflecting a greater workload (p < 0.001). For HR_{peak}, there were high correlations (r = 0.71) and for HR_{recov}, moderate correlations (r = 0.60) between the 112 step test and treadmill test. For VO_{2peak} and VO_{2recov}, there were moderate correlations between the 112 step test and treadmill test (r = 0.65 and 0.73). No differences between genders for VO_{2peak} values were found for either step test, but males displayed lower HR_{peak} values for both step tests and higher VO_{2peak} values during the treadmill test (p < 0.001). Recovery HR was lower in males for the 96 and 112 step tests (p < 0.05). This was reflected in higher fitness scores. There were no differences between groups in any of the variables when only females were compared. For the 112 step test, correlations between HR_{peak} and HR_{recov} were high (r = 0.85), and correlations between HR_{peak} and fitness category were very high (r = 0.98). It is concluded that the 112 step test provides an efficient, acceptable tool for testing dance populations, though further testing in larger groups of dancers representing a diverse range of genres and training levels is needed.

Richardson M, Leiderbach MJ, Sandow E. Functional criteria for assessing pointe readiness. *J Dance Med Sci.* 2010;14(3):6-7.

ABSTRACT: The most popular criterion cited in the dance literature for advancement to pointe work is attainment of the chronological age of 12 years. However, dancers at this age vary greatly in terms of musculoskeletal maturity and motor skill development. The purpose of this study was to investigate whether objective, functional tests could be used in conjunction with dance teacher expertise to determine pointe-readiness. It was hypothesized that dynamic tests of motor control can better indicate pointe-readiness than chronological age alone or in combination with static musculoskeletal measurements. Thirty-seven pre-pointe students from two professional ballet schools were tested for muscular strength, ankle joint range of motion, single leg standing balance, dynamic alignment, and turning skill. In addition, the participating students' ballet teachers independently graded each student on her readiness to begin dancing en pointe. Performance on three functional tests (the Airplane test, Sauté test, and Topple test) was closely associated with teacher subjective rating for pointe-readiness. It is concluded that these tests may be more useful for gauging acquisition of the skills required for safe and successful performance than the traditionally accepted indicators of chronological age, years of dance training, and ankle joint range of motion.

Schon LC, Biddinger KR, Greenwood P: Dance screen programs and development of dance clinics. *Clin Sports Med.* 1994;13(4): 865-82.

ABSTRACT: Dance movements can be stressful to the body, and the required extreme positions may place physiologic structures at risk for acute, subacute, or chronic injury. The authors designed a screening program, conducted by a team of physical therapists, orthopedists, and dance instructors, to evaluate dancers for musculoskeletal problems and to make recommendations that would improve movement compensation, strength, endurance, and mobility.

Siev-Ner I, Barak A, Heim M, Warhavsky M, Azaria M. The value of screening. *J Dance Med Sci.* 1997;1(3): 87-92, 1997.

ABSTRACT: Screening of dancers is not a new concept. Experienced ballet teachers and choreographers have screened ballet dancers for many years. Their experience, based on many years of practice and observation, enables them to detect weaknesses, technical faults, and deformities. However, this article will not discuss the attribute of the teachers. In recent years, skilled medical teams have become an integral part of the dance schools and

companies. Screening programs have been developed in many different parts of the globe but they all share the same goals.1-5

AIMS OF THE SCREENING PROGRAM: Regardless of where it is implemented screening programs have several key objectives:

1. To detect risk factors at an early stage in order to prevent injuries.
2. To learn the body characteristics of dancers so that it can be used as a baseline for comparison when injuries occur.
3. To collect data for research in order to be able to distinguish between “normal” and any deviation

**William M, Baston G. The m/r SEBT: development of a functional screening tool for dance educators. *Med Probl Perform Art.* 2014;29:207-215.
<http://www.ncbi.nlm.nih.gov/pubmed/25433257>. Accessed September 15, 2016.**

ABSTRACT: Dance screenings provide direct and indirect data bearing on a dancer's readiness to undertake rigorous physical training. Rarely, however, are dance teachers able to translate results from these screenings into practical technical knowledge. In this article, an example of a preseason assessment tool is presented that translates scientific findings into useful information for dance teachers conducting auditions. Designed as a baseline assessment of the dancer during auditioning, the m/r SEBT tool helps teachers stratify technical levels, identify injury risk, and consequently assist with immediate and appropriate recommendations for supplemental training and/or follow-up with a medical professional. The tool evolved out of more than 3 years of collaborative, multisite research utilizing the Star Excursion Balance Test (SEBT) as a dynamic test of balance. Modifications were made to render the test more dance-specific and to increase balance challenges. Within the 3-year period, more than 100 dancers were tested in four sites, two in the United States and two in the United Kingdom. Despite the relatively large collective sample size, neither the original SEBT nor its modifications (m/r SEBT) held robust face or content validity as balance screens. What did emerge, however, were qualitative criteria that the authors organized into a feasible assessment tool for preseason auditions. While this tool awaits further validation, its current evolution helps serve as a bridge between dance teachers' clinical and practical knowledge.

Wyon M, Redding E, Head A, Craig S. Development, reliability, and validity of a multistage dance specific aerobic fitness test (DAFT). *J Dance Med Sci.* 2003;7(3):80-4.

ABSTRACT: The aim of this study was to design a multistage dance-specific aerobic field-test that would indicate whether a dancer had the cardiorespiratory capabilities to cope with the demands of dance class and performance. The test consisted of five progressively demanding dance sequences. The technical level of each stage was kept as simple as possible to reduce the effect of economy of movement so that the emphasis of the test was physiologically based rather than skill orientated. The reliability of the stage workloads was measured via oxygen uptake and heart rate using a telemetric gas analyzer. After an initial familiarization trial, subjects (n = 56: 24 males and 32 females) undertook the test twice within 48 hours. The results showed significant differences in oxygen requirement and heart rates between stages (F [4, 172] = 803.522; p < 0.001) and gender (p < 0.01). The HR-VO₂ relationship for the test was r = 0.94; n = 3336; p < 0.001 and the SEE was ± 4.506. Reliability of the DAFT was calculated by determining the coefficient of variation (CV) expressed as a percentage and the percentage change in the mean between trials (%Δmean). CV ranged between 1.4 and 6.0 and %Δmean between 0.2 and 6.3 for the stages. The use of dance specific moves and specific levels of the test equating to the mean oxygen demands of class and performance confirmed that logical validity had been achieved. Possible applications to the dance world are the monitoring of heart rate at each of the stages during the year; setting of a target stage attainment for an individual's readiness to undertake class or performance after injury and/or, setting specific aerobic capabilities for dancers post-holiday or for guest artists (below a specific mean heart rate during a designated stage).

