February/March 2015

Dear Colleague,

We hope you will enjoy the second 2015 newsletter published by the Dance Education Network (DEN) of the International Association for Dance Medicine & Science (IADMS). The goal of the DEN is to reach out to educators and dancers in order to provide information about IADMS and IADMS initiatives.

Items in this Newsletter include:

- An endorsement of IADMS from Honorary Member – Peter Boal
- The 2015 IADMS Annual Meeting
- What has the “Anatomy of the Hip Joint” got to do with Louis XIV?
- IADMS Dance Medicine and Science Poster (Turnout for Dancers: Hip Anatomy)
- IADMS Facebook Page and IADMS Blog

Honorary Member Peter Boal:

Peter Boal was raised in Bedford, New York. At the age of nine, after having seen a New York City Ballet performance of George Balanchine’s Coppélia, he began studying ballet at the School of American Ballet, the official school of New York City Ballet. Mr. Boal became a member of New York City Ballet’s corps de ballet in 1983, a soloist in 1987, and a principal dancer in 1989. In 2005, he retired from New York City Ballet after a 22-year career with the company. Mr. Boal was also a full-time faculty member at the School of American Ballet from 1997 to 2005. In 2003, he founded Peter Boal and Company, a critically acclaimed chamber ensemble. In 2005, upon his retirement from New York City Ballet, Mr. Boal became Artistic Director of Pacific Northwest Ballet (PNB) and Director of Pacific Northwest Ballet School.

“Being a healthy and successful dancer in our time is so much more than making magic on stage or in the studio. Understanding the challenges to the body and the mind are essential. Addressing injuries, prevention, technique and spirit are crucial. The collective knowledge and resources offered by IADMS to our field are beyond measure. In IADMS, our profession finds the perfect partner.”

Peter Boal, Artistic Director, Pacific Northwest Ballet

Please visit the IADMS Website http: www.iadms.org to read Peter Boal’s full biography.

The 2015 IADMS Annual Meeting

The IADMS 25th Annual Meeting will be held from October 8 -11, 2015, in Pittsburg, Pennsylvania, USA with A Day for Teachers held on Thursday, October 8th.

Attend the IADMS Annual Meeting and you will:

- gain insights into the causes and treatments of musculoskeletal problems in dancers;
• enhance your understanding of recent research and its application to the training and treatment of dancers;
• enhance your knowledge regarding psychological and nutritional issues that affect dancers;
• be inspired to move in new ways and to incorporate new techniques into your teaching after participating in a variety of movement sessions;
• and increase your ability to communicate effectively with other dance professionals, be they dancers, dance educators, dance scientists, movement specialists, or healthcare professionals.

Join your colleagues for this unique multi-disciplinary event.

Here is a link that will give you a quick tour of Pittsburgh:

https://www.youtube.com/watch?v=ukrGv6dgb40

What has the “Anatomy of the Hip Joint” got to do with Louis XIV?

Classical ballet is a dynamic art form. Through observing lithographs and footage of dance from the last century such as those of Pavlova, Karsavina and Ulanova we are able to observe how the art of ballet has undergone change since its birth in the mid 17th to early 18th Century. It is interesting for us to review the description of the organization of the body, codified by Pierre Beauchamp (1631-1705). The five positions of the feet are described as turned out from the hip to an angle of 45 degrees. In this codification it was emphasized that the feet should never be turned out more than 45 degrees. Over time there has gradually developed an expectation for ballet dancers to turnout their feet to 180 degrees. On studying the human anatomy, it appears that Beauchamp was more anatomically sound in his recommendation of the 45 degree turnout “from the hip” than the current 180 degree placement “of the feet.”

King Louis XIV of France. renaissanceastrology.com downloaded 9/1/2015

There are many anatomical factors contributing to the effective and safe use of turnout. Alignment, core stability, and the recruitment of the appropriate turn out muscles all play an integral part; however, it should be emphasized that we are all made differently.

The Bone Anatomy of the Pelvis

The pelvis is made up of two halves, the innominate bones, or hipbones. Each innominate bone is formed from the fusion of three bones: ilium, pubis, and ischium. Each of the three bones contributes to the hip socket or acetabulum, like a pie with three slices. Fusion of these three bones, forming one solid bone, does not occur until about the 16th year of life.
The femur is more commonly known as the thighbone. Although all femurs share certain structural characteristics and landmarks, each person's anatomy is unique. The femur is the longest bone in the body, and though it has movement in all three planes like the shoulder joint, it has much more limited range of motion.

**The Ball and Socket**

The hip joint includes two main parts, the ball and the socket. The ball of the hip joint is the round head of the femur, or thigh bone, which articulates with the hip joint to enable the leg to rotate outwards.

There are three factors that affect turnout from the bony structure of the hip joint and most researchers agree that these conditions cannot be altered with training.

1. **Angle of femoral anteversion**

   On average, the neck of the femur is angled 15 degrees forward relative to the shaft of the femur (see Figure A). An increase in this anterior angulation, called anteversion, often will cause someone to toe in when they walk, (see Figure B). People who are born with more anteversion, the orientation of the femoral shaft in the hip socket makes the knees face towards each other when standing or walking. In ballet class, when they turn out their legs from the hip, the knees face the front, leaving little additional hip rotation to create the expected angle of outward rotation visible at the feet.

   However, a decrease in this angulation, called retroversion, will allow one to have greater turnout (see Figure C). People born with retroversion have a much easier time with turnout. Just standing in parallel, the knees and feet tend to face outward. By adding external rotation at the hip, they can achieve a larger angle of outward rotation visible at the feet than the average person.
2. Orientation of the acetabulum

The socket of the hip faces out to the side and somewhat forward, but there are individual variances. The socket that tends to face more directly to the side with a less angulation facing forward will allow a greater amount of turnout to come from the hip, and therefore, greater movement range.

3. Shape of the femoral neck

The neck of the femur is subject to some variability. A longer and more concave neck allows a greater range of motion at the hip. It is less likely for the femoral neck to come into contact with the outer edge of the acetabulum in turnout and is, therefore, considered to be advantageous. A shorter and less concave neck will have the opposite effect and limit turnout potential resulting in less movement range.

Bearing these anatomical differences in mind, it is more important to encourage dancers to use the turnout they have, rather than working against their anatomical make-up to achieve an unrealistic position. Louis XIV was happy with 45 degrees, but we can safely move beyond that if we apply a good understanding of anatomical structure and function.


Further Resources:


A useful tutorial on the hip joint, range of motion and function: Sechrest R. Hip Anatomy Animated Tutorial, 2012Watch it HERE
A great tutorial on hip function in squats with additional images on bone structure, which may govern why people may need to approach movement in different ways:

**Featured IADMS Poster:**
Turnout for Dancers: Hip Anatomy.

Turnout for Dancers: Hip Anatomy is a color poster offering teachers and dancers diagrams and brief descriptions of the major factors affecting turnout. This is the companion poster to Turnout for Dancers: Supplementary Training, authored by Virginia Wilmerding and Donna Krasnow and Dance Fitness authored by Sarah Irvine, Emma Redding, and Sonia Rafferty.

Dimensions of each poster: 24 in x 36 in (61 cm x 91.4 cm). This Poster is one of three posters in Dance Medicine and Science Poster Series 3.

To purchase this series of posters visit the IADMS Website:


**IADMS Facebook Page and IADMS Blog.** Follow the link provided below:


Visit the IADMS Facebook Page to read interesting dance articles, resource papers, and video presentations.

IADMS has recently launched the IADMS Blog specifically designed to connect dance teachers and students of all genres. The blog aims to provide relevant information for dance students and teachers and we are interested to find out what you would like to hear about or discuss. Visit IADMS on Facebook to let us know.

We will leave you with one last thought…
"You cannot teach what you don't know. You cannot give energy if you're not on fire on the inside."

~~ Jesse Jackson

Best wishes,

Maggie Lorraine, Dance Education Network Subcommittee

Margaret Wilson, IADMS Education Committee Chair

IADMS Education Committee: Education@IADMS.org