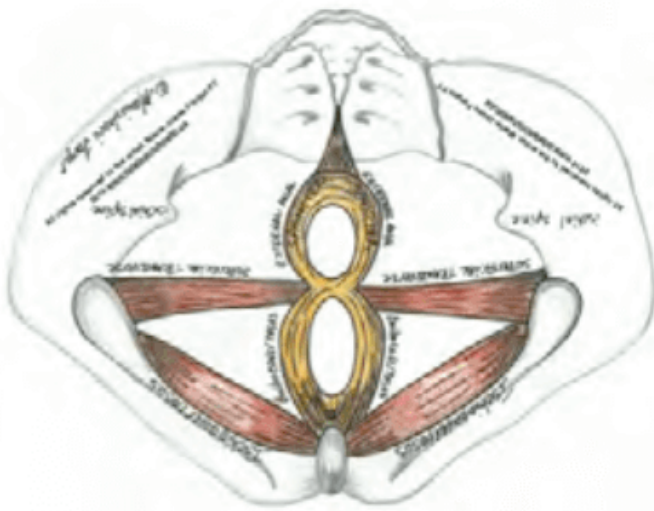


The Pelvic Floor in Dancers

By Dinah Hampson BA, BSc, PT, FCAMT, RISPT, Brooke Winder, PT, DPT, OCS and Nathaniel Dolquist MT Yale

Layers 1-2 of the Pelvic Floor



Layer 3 of the Pelvic Floor

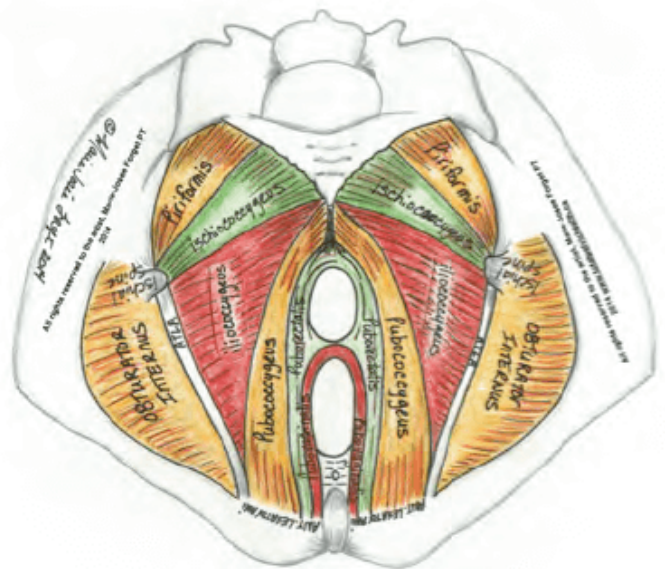


Image credit: Marie-Josée Forget PT, Pelvic Health Physiotherapist, North Bay, Ontario, Canada

The pelvic floor is a region comprised of muscles, organs, ligaments, fascia, nerves, lymph and blood vessels that span across the pelvic bones from front to back and side to side. There are three layers of pelvic floor muscles (pictured).

The layers closest to the surface of the body and toward the front help with urinary and sexual function. The muscles that are deeper and closer to the back of the pelvis help with holding in and passing stool, and supporting the pelvic organs (i.e. bladder, rectum, prostate in men, uterus in women).

The pelvic floor muscles are anatomically linked to the hip; especially to one of the deep turnout muscles, the obturator internus. Repeated use of turnout in dance will naturally transfer force to the muscles of the pelvic floor.

WHAT ARE THE FUNCTIONS OF THE PELVIC FLOOR?

The pelvic floor muscles contract and lift, relax back to a resting level, and can also bulge outward (i.e. for a bowel movement or with labor and delivery). Properly coordinated pelvic floor muscles will respond to daily tasks and dance activity with appropriate amounts of tension (not too much, not too little) in a dynamic manner.

The 5 S's

- **Support.** The muscles, ligaments and fascia act like a hammock for your organs, accepting and managing the loads from above.
- **Sphincteric.** These muscles hold urine and faeces in, to maintain continence. They must also relax to allow for urination and bowel movements.
- **Stability.** These muscles span across the pelvic bone, helping to create stability and transfer forces to and from nearby regions like the legs and the trunk. For example, when you land from a jump, forces are transmitted through your legs, across the pelvis via the pelvic floor, and up to your spine. The pelvic floor muscles create tension across the pelvic bones to ensure appropriate stability in this region.
- **Sexual function.** Proper muscle function controls arousal and orgasm.
- **Sump pump.** These muscles help with fluid management in the pelvis to avoid swelling.
- **Breathing.** The pelvic floor muscles interact in “parallel” with the glottis and the diaphragm. During an inhale (breathing in), these muscles naturally lengthen, and during an exhale, these muscles will recoil. They help to create coordinated breathing mechanics.
- **Regulating intra-abdominal pressure.** Within the canister of the trunk and pelvis, there are consistent changes in internal pressure in response to load. This occurs with activities such as coughing, sneezing, deep breaths, jumping, athletic impact, holding the breath, singing, squatting, dancing, or lifting. The pelvic floor truly serves as the “floor” of the canister above, responding appropriately to increases and decreases in pressure to maintain continence (i.e. not “leak”).

WHAT SYMPTOMS MIGHT A DANCER HAVE IF THIS REGION ISN'T FUNCTIONING PROPERLY?

Example symptoms include:

- Urinary or faecal leakage (inability to hold urine or faeces in)
- This could occur with jumps, coughing, sneezing, or lifting (stress incontinence) or in association with a very strong and uncontrollable urge to go (urge incontinence).
- Pelvic pressure/falling out feeling with pelvic organs
- Urinary or bowel frequency/urgency (Having to “go” more often than every 2-4 hours during the day, or getting up to go more than 1x/night)
- Pain with urination or bowel movements
- Irritable bladder
- Incomplete bladder emptying (having to “go” again or dribbling a few minutes after urinating)
- Pelvic pain (i.e. abdominal, hip, low back, perineal, vaginal, vulvar, testicular, penile, rectal, coccyx)
- Constipation
- Painful menstruation
- Painful intercourse

IF A DANCER EXPERIENCES ONE OR MORE OF THE SYMPTOMS LISTED, WHAT'S WRONG?

These symptoms could be due to weakness/underactivity (often termed “pelvic floor hypotonicity”), poor muscle coordination, or muscle overactivity/tightness/spasm (often termed “pelvic floor hypertonicity”).

Problems with the pelvic floor can occur for a multitude of reasons:

- Weakness can occur after a nerve injury or postpartum
- Poor coordination, pain, and overactive pelvic floor muscles can commonly occur as a response to
- Overuse/overload in impact activities like dance, such as repeated heavy jump landings
- Chronic physical or psycho-social stress
- Trauma, such as a fall onto the tailbone or birth injury
- Compensation for a hip or low back injury or instability,
- Compensation for generalized joint laxity, Ehlers-Danlos syndrome, or hypermobility
- Habit, such as over-recruiting these muscles (i.e. sucking the belly and pelvic floor in without relaxing during dance activity) or chronically holding urine or bowel movements

TREATMENT

Treatment of pelvic floor dysfunction involves a combination of strengthening and releasing to address hypo and hypertonicity. Only certified pelvic floor physiotherapists can perform internal examinations of the pelvic floor muscles.

MANAGEMENT STRATEGIES

- Incorporate a multitude of breathing strategies in daily life and during dance. For example, avoid over-bracing and breath-holding, as this often creates excessive pressure or excessive pelvic floor tension and lift.
- Include simple exercises to become more aware of pelvic floor contraction AND full relaxation.
- Learn to recognise over-activation of the abdominal wall or sucking the abs excessively and find more balance in trunk stability. This can significantly decrease pressure on the pelvic floor.
- Balance the hips and pelvic floor by strengthening and moving into hip internal rotation during cross training if often working in turnout.
- Work on stress-management and coping strategies like meditation or mindful practices. Neurally, the pelvic floor region is intimately connected to our “fight or flight” (sympathetic) and “rest and digest” (parasympathetic) systems, and its level of activation will respond to chronic stress states.
- Work with nutrition experts to assure optimal digestive health (the pelvic floor reacts to constipation and compromised gut health) and adequate levels of Vitamin D (poor Vitamin D and nutritional status has been linked to incontinence).

A DANCER'S PERSPECTIVE

Dancer Nathaniel Dolquist, NYC, describes his experience with pelvic floor engagement:

"I dealt with lower back pain for years before I found someone who treated my pelvic floor. So many people have back pain that I thought it was just par for the course. But pain is a signal that something isn't operating the way it should, and those who deal with it proactively can prevent it from becoming the lifestyle of, 'oh yeah, that always hurts and there's nothing I can do about it."

My Alexander Technique teacher educated me on the way the pelvic floor and lower back work together to keep the spine upright in gravity. She showed me the way that tension in my head and neck caused distortions in muscle tone through the pelvic floor and into my legs. By learning to feel the difference between a hypertonic (too tight) and hypotonic (too loose) pelvic floor, I was able to find my way to a supported neutral position. It's a difficult process because it's a part of the body we seem to have forgotten about.

It's my opinion that sexual repression and feelings of shame about our genitalia cause this part of our bodies to become 'cut off'. In order to relieve pain in the pelvic floor, we must take responsibility for this area of our bodies and develop our proprioception of it. I can attest: after treatment my lower back pain has completely disappeared."

HOW CAN DANCERS OPTIMISE PELVIC FLOOR HEALTH?

Understanding that the pelvic floor muscles require full, dynamic movement is key to a dancer's pelvic floor health. If a dancer suspects that a pelvic floor issue is present, it is strongly recommended that they seek qualified help from a healthcare practitioner who understands the pelvic floor, such as a pelvic floor physiotherapist. Pelvic floor physiotherapy is strongly supported by research for pre and post-natal care, chronic pelvic pain, and incontinence. (Resources for locating practitioners are listed at the end of this document). Dancers who want to optimise their movement technique can also seek help from qualified movement educators who have an enhanced understanding of how the pelvic floor interacts with the rest of the body through movement.

Here are some basic exercise examples to strengthen and release the pelvic floor muscles:

Strengthening exercises for underactive or hypotonic pelvic floor muscles: (for videos of these exercises, visit: pivotdancer.com/iadms/*)

1. Activating the anterior (front) and posterior (rear) pelvic floor- otherwise known as the "Kegel" exercise. Use breath to time contraction with exhalation.
Cues:
 - For anterior pelvic floor: Think of drawing the urethra (where you void liquid) upward and inward- for women, a blueberry up the vagina, for men, "shorten your penis".
 - For posterior pelvic floor: Think of drawing the anus upward and inward or stopping the escape of gas. Think of drawing the four corners of the pelvic floor together as you lift up, like lifting up a napkin from the centre.
 - Start with 5 second hold, working towards a goal of 10 second hold, 10 repetitions

2. Progression of exercise one to contract the pelvic floor in stages, like an elevator – first floor to 4th floor and back down, can add more floors if able. “lift the urethra one floor, now two floors...”.
3. Butterfly bridges: lie on the floor in a first position plie, lift your pelvis off the floor to bridge.
Goal:
10 second holds, 10 repetitions
4. Bridge, add Kegel, add single leg hip fall out in the bridge position.
Goal:
10 second movements (5 seconds out, 5 seconds back), 10 repetitions

Relaxing exercises for hypertonic pelvic floor muscles:

1. Deep breathing with belly breathing incorporating rib and side expansion. Slow, 4-5 second breaths
Reverse Kegel to fully relax the pelvic floor.
2. Cues to think about include: imagine relaxing the pelvis like a flower opening, or like butter melting in the sun. Use your breath to time relaxation with exhalation
Hold 4-5 seconds.
3. Happy baby yoga pose
Hold for 30 seconds
4. Pigeon stretch yoga pose
Hold for 30 seconds



Butterfly bridge



Pigeon stretch yoga pose



Happy baby yoga pose

RESOURCES FOR PELVIC FLOOR PHYSIOTHERAPY

NHS referral: To get a referral for pelvic floor healthcare, it is best to see your GP first and to explain your concerns or symptoms. Your GP will be able to refer you to a specialist service for consultation or pelvic health physiotherapy.

Private specialists:

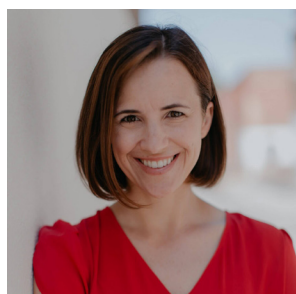
pelvicphysiotherapy.com/list-of-therapists/

pelvicpartnership.org.uk/list-of-recommended-practitioners/

pelvicguru.com

Note: The NHS has developed a physiotherapy app for pelvic floor muscle exercises, called Squeezy, squeezyapp.com which may be helpful to use alongside these exercises.

ABOUT THE AUTHORS



Brooke Winder, PT, DPT, OCS
Doctor of Physical Therapy
Board Certified Specialist in Orthopedic Physical Therapy
Pelvic Health Specialist
BASI Certified Pilates Instructor

Dr. Winder is a U.S.-based physical therapist specializing in orthopedic and pelvic floor health for dancers. She serves as Assistant Professor in the Department of Dance at California State University, Long Beach, where she Coordinates the Bachelor's degree program in Dance Science and teaches courses in Anatomy, Injury Prevention, Wellness and Pilates. She is currently an expert for Pivot Dancer (pivotdancer.com), and is a member of the International Association of Dance Medicine and Science, Performing Arts Medicine Association, and Performing Arts Special Interest Group of the Academy of Orthopedic Physical Therapy. Brooke provides backstage care for touring professional dance companies, physical therapy services for summer dance intensives, and community workshops to dancers and dance educators. She is also passionate about educating the dance world about pelvic floor issues such as incontinence, prolapse, and pelvic pain, and empowering dancers to know how to address these symptoms. Her current academic research focuses specifically on pelvic floor issues in dancers.

She has previously published in The Journal of Orthopedic and Sports Physical Therapy, Journal of Electromyography and Kinesiology, and Orthopedic Physical Therapy Practice magazine. She has presented research at venues such as the International Association of Dance Medicine and Science Annual Conference and the Performing Arts Medicine Association International Symposium. Brooke earned a Doctorate in Physical Therapy from the University of Southern California and a Bachelor of Fine Arts in Dance from Chapman University. She is a Board-Certified Specialist in Orthopedic Physical Therapy, a Certified Pilates instructor through Body Arts and Science International, and a former professional dancer with California-based Backhausdance.



Dinah Hampson BA, BSc.PT, FCAMT, RISPT
Registered Physiotherapist
Dip. Manual & Manipulative Physiotherapy,
Dip. Sport Physiotherapy.
Progressive Ballet Technique (PBT) Certification Jr to Advanced
levels .Certified Pelvic Floor Physiotherapist

Dinah is a member of the Healthy Dancer Canada Network and of the International Association of Dance Medicine Science. Dinah was classically trained in ballet, danced with the Young Dancer's Company of the Newfoundland Dance Theatre and Musical Theatre productions. Dinah regularly assesses and treats dancers from professional dance training programs and companies as well as community/competitive dancers.

Dinah completed her BA in Health Studies at Queen's University and BSc in Physical Therapy at the University of Toronto. Her passion for Sports Physio led her to being an active member of the Sport Physio division of the CPA, on both provincial and national executives. Dinah has completed her Certificate of Manual therapy and her Diploma of Manual & Manipulative therapy and Diploma of Sport Physiotherapy giving her the titles of Orthopaedic, Pelvic Health Physiotherapist and Sport Physiotherapist. Certifications in IMS – (Intramuscular Stimulation certification), kinesiotaping, pelvic floor physiotherapy, ballet strength and conditioning are all a part of an ongoing passion to learn and evolve as a health care professional. Dinah is committed to education; she is status faculty at the University of Toronto faculty of Medicine and was guest faculty in the Dance department at George Brown College.

Dinah is a co-founder of Pivot Dancer, an ingenuitive on-line resource platform for dancers, dance parents and dance educators.



Nathaniel Dolquist MT Yale

Nathaniel is a performing artist and teacher based in New York City and an expert for Pivot Dancer (pivotdancer.com). As an actor, dancer, and singer, he believes that study of the physical instrument is vital to fostering ease and grace in art-making.

Nathaniel has undergone three major transformations:

In high school near Denver, Colorado, he dropped from 238 pounds to 178 pounds over 18 months with a healthy diet and regular exercise. He realized how much more joy he took in an active lifestyle than a sedentary one. His triglyceride and cholesterol levels normalized and his insulin resistance disappeared. His thinking became more hopeful. He defined discipline as "the ability to stick with something for a long time."

While studying theater at Yale University, he began training in shotokan karate and lifting weights. He discovered the joy and challenge of compound lifts and movements. His thinking became more analytic and intentional. He defined discipline as “the ability to constantly challenge oneself.”

After moving to New York City to pursue acting, he apprenticed himself to ballet and the Alexander Technique. Through a combination of the two, he learned to undo old habits and reintegrate along more effective myofascial meridians and spirals. He cleaned up his nutrition and discovered which foods were healthy for him and which were not. His thinking became more open, more loving, and less judgmental of others. His current definition of discipline is “the ability to do what one says one is going to do.”

Recent credits include the Emcee in Cabaret (Yale), Glen Guglia in The Wedding Singer (Mac-Haydn), First Sailor in Dido and Aeneas (New York City Center), Felicite/Violin in WONDERLAND (Atlantic Theater Company). He has choreographed and performed work for the Broadway and Ballet HERO Awards as well as the new musical Too Naked Too Soon. He teaches students aged 8 and up; recent graduates of his tutoring program now attend Harvard, NYU Tisch, and Oberlin College.

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** Please note, this link no longer works. We are working to update these links to ensure accuracy.*

