

Barre for The Active Aging

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Thank you for attending! The active aging is the fastest growing population in the country and with that comes orthopedic injuries primarily knees and hips At least 1 out of 5 have experienced a replacement surgery. Even with injuries and restrictions these clients do not have any intention of slowing down doing the things they love therefore knowing how to train with issues is crucial for this clientele. As a group, baby boomers were the wealthiest, most active, and most physically fit generation up to the era in which they arrived, and were amongst the first to grow up genuinely expecting the world to improve with time. They were also the generation that received peak levels of income; they could therefore reap the benefits of abundant levels of food, apparel, retirement programs, and sometimes even "midlife"

There are very few barre classes geared towards the active aging client, therefore we need to accommodate a functional approach to barre training for all ages and levels

As trainers this is the group seeking the following! Unlike the millennial looking to look good for a wedding or bathing suit. The goals and objectives are different for these clients:

1. Antiaging in every respect
2. Pain free to do other activities
3. Travel play sports
4. Enjoy retirement
5. Stay healthy

Attracting the active aging into barre classes

Unfortunately many barre classes are designed primarily for the young wealthy female who has unlimited time to exercise leaving the other 90% out. Classes need to focus on including not excluding members due to age or abilities. The active aging is a very progressive and energetic society participating in many activities however with that comes common injuries. As instructors knowing common injuries and how to accommodate them will encourage this generation to participate

Common injuries

Most common **overuse or chronic** injuries: Overuse is classified as an injury or pain that stemmed from repetitive motions or exercises that led to dysfunctions. For example a common over use problem to golfers is their low back due to the repetitive motions of the swing

Most common **acute** injuries can come from trauma or from overuse leading to weakening a link in the system For example a runner that never trains in all three planes of motion suffers from a lateral ankle sprain due to the weakness in that link

The role of fascia

Fascia is one of the most important tissues that supports our skeletal system throughout our entire life For example a 100 yr old still practices yoga yet a 50 year old professional baseball player has already had multiple surgeries and walking is an effort! The collagen fibers of fascia form tough connections that provide strength and support through internal structures; whereas, elastin fibers have flexible strength and tend to stretch and recoil much like rubber bands.. It receives the hydration, fuel and lubrication it needs to support movements and offers effortless protection.

However, when the stresses of injuries, dehydration, overuse and imbalances arise, fascia does not receive what it needs and becomes thicker, knotty or inflamed. Blood flow is restricted, the movements of joints and muscles become limited and tension and/or pain is experienced. When fascia is restricted or inflamed (i.e., through an injury, a lack of hydration or nutrients accessible, disease, infection, damage due to repeated impact, extra weight being carried, etc.) the results can be extreme pain and discomfort And as we age the body produces less collagen and skin and fascia begin to change if not taken care of.

1. **Weakness in fascia connection**
2. **Long periods of sitting**
3. **Poor training techniques**
4. **Lack of movement (which is 99% of the population)**
5. **Lack of motivation workouts are too intense**
6. **Injuries leading to scar tissue eg abdominal surgeries**
7. **Poor diet that is high in sugars or dairy creating inflammation and weight gain**
8. **This is a short list!**

Great posture and a strong functional aging body

1. **Bones are more aligned=better joint function**
2. **Less pain**
3. **Better core strength**
4. **More energy**
5. **Better attitude!**

Most common orthopedic surgeries and injuries to baby boomers Examples: from sports and overuse or poor training techniques, heredity

1. Hip replacements full or partial (golfers, tennis players, skiers, baseball,
2. Knee replacements full or partial(runners, hikers, bump skiers, aerobics step, basketball, high intensity training,
3. Shoulder replacements full or partial (baseball,tennis, cycling, high intensity training eg kettlebell water skiing)
4. Back surgeries fusion, disc, orthoscopic (any sport listed above can injure the lumbar, thoracic, cervical spine)
5. Foot/Ankle surgeries (bunions from toe shoes, running, basketball. tennis.

Looking at the links

The Foot and ankle

The human foot is a strong and complex mechanical structure containing 26 bones, 33 joints (20 of which are actively articulated), and more than a hundred muscles, tendons, and ligaments The **joints of the foot** are the ankle and subtalar joint and the when the foot hits the ground it works as a stabilizer and shock absorber to the rest of the body.

Leading foot dysfunctions

1. An individual who overpronates(mostly women) initially strikes the ground on the lateral side of the heel. As the individual transfers weight from the heel to the metatarsus, however, the foot will roll too far in a medial direction, such that the weight is distributed unevenly across the metatarsus, with excessive weight borne on the hallux. In this stage of the gait, the knee will generally, but not always, track inwards. This leads to lateral knee issues up the chain This individual will suffer from tight calves and hip flexors Prone to medial ankle sprains
2. An individual who over supinates (mostly men) initially strikes the ground on the lateral side of the foot and does not have good shock absorption. As the foot should absorb the ground the weight is distributed towards the fifth metatarsal rather than equally this individual will most likely suffer from shin splints and a tight lateral hip complex. Prone to lateral ankle sprains
3. Staying in a plantar flexed position for excessive periods of time is not only dysfunctional to the foot but will affect the rest of the chain. Therefore working in a neutral position of the foot and working to strengthen the foot is advised

The aging knee and how to address alignment in barre classes

The **knee joint** joins the thigh with the leg and consists of two articulations: one between the femur and tibia (tibiofemoral joint), and one between the femur and patella (patellofemoral joint).^[1] It is the largest joint in the human body.^[2] The knee is a modified hinge joint, which permits flexion and extension as well as slight internal and external rotation. The knee joint is vulnerable to injury and to the development of osteoarthritis. The knee is the largest joint and one of the most important joints in the body. It plays an essential role in movement related to carrying the body weight in horizontal (running and walking) and vertical (jumping) directions. .

Bursitis/osteoarthritis Is the wear and tear of the knee can be both lateral on a more valgus knee and medial with a more varus knee. Surgery can be avoided for a period of time with a change of exercise routing of corrective stretching and strengthening without impact,, but most find it to be necessary as the condition does not improve

1. An individual that has a more **valgus** knee (knocked knee) primarily female clients have a more distinct Q angle of the hips, this knee is common in obesity, pregnancy, poor shoe quality. This particular knee issue is subjected to lateral pain and degeneration of the meniscus.
2. Solutions in Barre classes
 - a. Lengthen the hip flexors, adductors through both standing and supine exercises
 - b. Strengthen the gluteus maximus, medius and minimus
 - c. Lengthen the calves
 - d. Strengthen vastus laterals
 - e. Cue to hinge not tuck
3. An individual that has more **varus** knee(bowlegged) primary male clients have a more distinct lateral angle to the femur to the knee and hip. This knee is common for an individual that walks more on the outside of the feet and is more subjected to ACL injuries and pain medially. They will have tighter lateral/posterior muscles Glutes group, hamstrings,TFL
4. Solutions

- a. Lengthen the gluteus medius and minimus hamstrings
- b. Strengthen the adductors Sartorius

The Aging Shoulder and how to address in barre classes

The shoulder joint (also known as the glenohumeral joint) is the main joint of the shoulder. It is a ball and socket joint that allows the arm to rotate in a circular fashion or to hinge out and up away from the body. The capsule is a soft tissue envelope that encircles the glenohumeral joint and attaches to the scapula, humerus, and head of the biceps. Solutions

- a. Strengthen the muscles surrounding the shoulder incorporating the rest of the body.
- b. Strengthen and stretch anterior and posterior core.
- c. Offer exercises other than a plank if there is shoulder issues (the wall)
- d. Do not restrict motion of the pelvis as it restricts motion of the shoulder
- e. Offer other positions of the shoulders

The Aging spine in a barre class

In the human vertebral column there are normally thirty-three vertebrae;^[3] the upper twenty-four are articulating and separated from each other by intervertebral discs, and the lower nine are fused in adults, five in the sacrum and four in the coccyx or tailbone. The articulating vertebrae are named according to their region of the spine. There are seven cervical vertebrae, twelve thoracic vertebrae and five lumbar vertebrae. Osteoporosis of the spine is one of the leading issues of the active aging as is bulging discs, stenosis it is advised that lying supine doing any kind of flexion is to be avoided

- a. Strengthening the core in all three planes especially particular to the sport
- b. Controlled strengthening of the posterior muscles that support the spine
- c. Training for function
- d. Do not do crunches
- e. Do not lift the head in a supine position

Each class without exception must have ranges of motion that each participant can do pain free and to their ability. Also demonstrating correct alignment is crucial for this age category .

Boomers at the Barre workout

1. **Modifications always offered**
2. **Ranges of motion appropriate**
3. **Working in only a full range of motion that they can maintain pain free**
4. **Never holding a movement until pain**
5. **Giving breaks when needed**

Exercise	Purpose	Muscles Involved
Calf lengthen facing the barre with right foot behind parallel repeat left	Promote dorsi flexion	Calves and soleaus
Hip flexor opener same position as above	Promote hip flexor <u>lengthening</u>	Hip flexor group
Parallel squat with BB in between knees facing the barre	Promotes lengthening the glutes	Lengthen and strengthen the gluteaus
Hip extension facing the barre Extend the right hip lift and lower	Promotes lengthening the hips and strengthen the <u>gluteus</u>	Lengthens the hip flexors and strengthens the hip complex
Push ups on the barre or floor(variation close grip)	Promotes strengthening the <u>shoulder complex</u>	Pectorals, deltoids rhomboids serratus anterior
Side of barre lunge to knee lift and balance hold	Promote strengthening the <u>hip complex and balance</u>	Gluteus, hip flexors Quadriceps
Plié squats facing the barre (variation calf raise)	Promotes strengthening the <u>hip complex</u>	Adductors Quadriceps

Side bend into barre with hip abduction balabce	Promotes strengthening the core	All core muscles of torso and hip abductors
Face barre slow posterior lunge Gliding™	Promotes lengthening and strengthening the gluteus	All posterior muscles of the hip complex
Hand held weights tricep press or bands	Promotes strengthen the triceps	Triceps
Hand held weights bicep curls or bands	Promotes strengthening the biceps	Biceps
Hand held weights shoulder abduction/adduction or bands	Promotes strengthening the posterior muscles of the back	Rhomboids, posterior deltoids
Hand held weights row or bands	Promotes strengthening the posterior muscles of the spine	Latissimus dorsi
Facing away curtsy lunge with Gliding™	Promotes strengthening the muscles of the posterior hip and lengthening the anterior hip	All muscles supporting the posterior hip
Plank to pike Gliding™ Push up on barre	Promotes strengthening muscles of the shoulder complex	Primarily serratus anterior and core
Plank hip abduction Gliding™ abduction at the barre	Promotes strengthening the Muscles of the hip adductors and adductors	All muscles that support the core and abductors and adductors of the hip
Spine extension with Bender Ball™ Gliding™	Promotes lengthening the rectus	Eccentric lenthing of the rectus
Same as above with rotation		Obliques
Side lying lateral flexion with Bender Ball™ and Gliding™	Promotes strengthening the oblique's and core	Obliques
Supine Bridge with Bender Ball™	Promotes strengthening the hamstrings and gluteus	Gluteus and hamstrings and spinal extensors
Supine balance with Bender Ball™	Promotes lengthening the hip flexors and core stabilization	Hip flexors group

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In Health
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