**Barre for Boomers**

**You are never too old to do Barre**

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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’

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 energic 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 abdomen al 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**

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 Human Foot and ankle**

The human foot is a strong and complex mechanical structure containing 26 [bones](https://en.wikipedia.org/wiki/Bone), 33 [joints](https://en.wikipedia.org/wiki/Joint_%28anatomy%29) (20 of which are actively articulated), and more than a hundred [muscles](https://en.wikipedia.org/wiki/Muscle), [tendons](https://en.wikipedia.org/wiki/Tendon), and [ligaments](https://en.wikipedia.org/wiki/Ligament).[[1]](https://en.wikipedia.org/wiki/Foot#cite_note-Podiatry-Channel-1) The **joints of the foot** are the [ankle](https://en.wikipedia.org/wiki/Ankle) and [subtalar joint](https://en.wikipedia.org/wiki/Subtalar_joint) and the [interphalangeal articulations of the foot](https://en.wikipedia.org/wiki/Interphalangeal_articulations_of_the_foot). 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](https://en.wikipedia.org/wiki/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

**The aging knee**

The **knee** [joint](https://en.wikipedia.org/wiki/Joint) joins the [thigh](https://en.wikipedia.org/wiki/Thigh) with the [leg](https://en.wikipedia.org/wiki/Human_leg) and consists of two [articulations](https://en.wikipedia.org/wiki/Articulations_%28anatomy%29): one between the [femur](https://en.wikipedia.org/wiki/Femur) and [tibia](https://en.wikipedia.org/wiki/Tibia) (tibiofemoral joint), and one between the femur and [patella](https://en.wikipedia.org/wiki/Patella) (patellofemoral joint).[[1]](https://en.wikipedia.org/wiki/Knee#cite_note-1) It is the largest joint in the human body.[[2]](https://en.wikipedia.org/wiki/Knee#cite_note-2) The knee is a modified [hinge joint](https://en.wikipedia.org/wiki/Hinge_joint), which permits [flexion](https://en.wikipedia.org/wiki/Flexion) and [extension](https://en.wikipedia.org/wiki/Extension_%28kinesiology%29) as well as slight internal and external rotation. The knee joint is vulnerable to injury and to the development of [osteoarthritis](https://en.wikipedia.org/wiki/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
3. Lengthen the hip flexors, adductors through both standing and supine exercises
4. Strengthen the gluteus maximus, medius and minimus
5. Lengthen the calves
6. Strengthen vastus laterals
7. 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
8. Solutions
9. Lengthen the gluteaus medius and minimus hamstrings
10. Strengthen the adductors Sartorius

**The Aging Shoulder**

 The [shoulder joint](https://en.wikipedia.org/wiki/Shoulder_joint) (also known as the glenohumeral joint) is the main joint of the shoulder. It is a [ball and socket joint](https://en.wikipedia.org/wiki/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](https://en.wikipedia.org/wiki/Joint_capsule) is a soft tissue envelope that encircles the glenohumeral joint and attaches to the [scapula](https://en.wikipedia.org/wiki/Scapula), [humerus](https://en.wikipedia.org/wiki/Humerus), and head of the [biceps](https://en.wikipedia.org/wiki/Biceps). It is lined by a thin, smooth [synovial membrane](https://en.wikipedia.org/wiki/Synovial_membrane). The [rotator cuff](https://en.wikipedia.org/wiki/Rotator_cuff) is a group of four muscles that surround the shoulder joint and contribute to the shoulder's stability. The muscles of the rotator cuff are [supraspinatus](https://en.wikipedia.org/wiki/Supraspinatus), [subscapularis](https://en.wikipedia.org/wiki/Subscapularis), [infraspinatus](https://en.wikipedia.org/wiki/Infraspinatus), and [teres minor](https://en.wikipedia.org/wiki/Teres_minor). The cuff adheres to the glenohumeral capsule and attaches to the [humeral head](https://en.wikipedia.org/wiki/Humeral_head)

The shoulder must be mobile enough for the wide range actions of the arms and hands, but also stable enough to allow for actions such as lifting, pushing and pulling.

1. Solutions
2. Strengthen the muscles surrounding the shoulder incorporating the rest of the body.
3. Strengthen and stretch anterior and posterior core.

**The Aging spine**

In the human vertebral column there are normally thirty-three vertebrae;[[3]](https://en.wikipedia.org/wiki/Vertebral_column#cite_note-GRAYS2005-3) the upper twenty-four are articulating and separated from each other by [intervertebral discs](https://en.wikipedia.org/wiki/Intervertebral_disc), and the lower nine are fused in adults, five in the [sacrum](https://en.wikipedia.org/wiki/Sacrum) and four in the [coccyx](https://en.wikipedia.org/wiki/Coccyx) or *tailbone*. The articulating vertebrae are named according to their region of the spine. There are seven [cervical vertebrae](https://en.wikipedia.org/wiki/Cervical_vertebrae), twelve [thoracic vertebrae](https://en.wikipedia.org/wiki/Thoracic_vertebrae) and five [lumbar vertebrae](https://en.wikipedia.org/wiki/Lumbar_vertebrae). The number of vertebrae in a region can vary but overall the number remains the same. The number of those in the cervical region however is only rarely changed

There are [ligaments](https://en.wikipedia.org/wiki/Ligament) extending the length of the column at the front and the back, and in between the vertebrae joining the [spinous processes](https://en.wikipedia.org/wiki/Spinous_process), the [transverse processes](https://en.wikipedia.org/wiki/Transverse_process) and the vertebral laminae.

The upper cervical spine has a curve, convex forward, that begins at the [axis](https://en.wikipedia.org/wiki/Axis_%28anatomy%29) (second cervical vertebra) at the apex of the odontoid process or [dens](https://en.wikipedia.org/wiki/Axis_%28anatomy%29#Dens), and ends at the middle of the second thoracic vertebra; it is the least marked of all the curves. This inward curve is known as a [lordotic](https://en.wikipedia.org/wiki/Lordosis) curveThe thoracic curve, concave forward, begins at the middle of the second and ends at the middle of the twelfth thoracic vertebra. Its most prominent point behind corresponds to the spinous process of the seventh thoracic vertebra. This curve is known as a [kyphotic](https://en.wikipedia.org/wiki/Kyphosis) curve.

The thoracic and sacral kyphotic curves are termed primary curves, because they are present in the [fetus](https://en.wikipedia.org/wiki/Fetus). The cervical and lumbar curves are *compensatory* or *secondary*, and are developed after [birth](https://en.wikipedia.org/wiki/Childbirth). The cervical curve forms when the infant is able to hold up its head (at three or four months) and to sit upright (at nine months). The lumbar curve forms later from twelve to eighteen months, when the child begins to walk.

1. Strengthening the core in all three planes especially particular to the sport
2. Controlled strengthening of the posterior muscles that support the spine
3. Training for function

Stretching and lengthening the hip flexors, calves, .

**Boomers at the Barre workout**

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

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| 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 lengthening | 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 gluteus  | Lengthens the hip flexors and strengthens the hip complex |
| Push ups on the barre or floor(variation close grip) | Promotes strengthening the shoulder complex | Pectorals, deltoids rhomboids serratus anterior  |
| Side of barre lunge to knee lift and balance hold | Promote strengthening the hip complex and balance | Gluteus, hip flexors Quadriceps |
| Plié squats facing the barre(variation calf raise) | Promotes strengthening the hip complex | Adductors Quadriceps |
| Side bend into barre with hip abduction | 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 awayr curtsey 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™ | Promotes strengthening muscles of the shoulder complex | Primarily serratus anterior and core |
| Plank hip abduction Gliding™ | Promotes strengthening theMuscles 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 scissors with Bender Ball™ | Promotes lengthening the hip flexors and core stabilization | Hip flexors group |

Thank you for attending

In Health

Leslee Bender