

Walking Poles as an Effective Alternative to Walkers and Canes...

And to the "Normal Effects of Aging"

By Tom Rutlin, walking pole innovator and CEO/Founder of Exerstrider Products Inc.

Our unique ability to walk upright is programmed into our DNA

- We spend around 8-9 months of early development crawling and building both musculoskeletal strength and neurological function through its “cross-crawl” action.
- At around 9 months we begin to “cruise”- standing supported by holding on to furniture and adults, and honing the functional neurological abilities needed to become the only full-time upright biped mammals on the planet.
- At 11-12 months we begin to experience the joys and functional advantages of ***a lifetime of walking.***

Early humans survived by exploring and organizing their movement options

- By age 6 we begin our experiments with running, skipping, climbing and throwing – movement options that in terms of our ancient ancestors survival were a matter of life or death. Survival of the fittest required these movement options be developed and organized skillfully.
- Today these movement options have largely been channeled into games and play activities.
- Now, survival of the fittest should be replaced by tuning the body for “*thrival of the merely fit*”.

“Modernity” and technology have increasingly made movement more and more merely optional

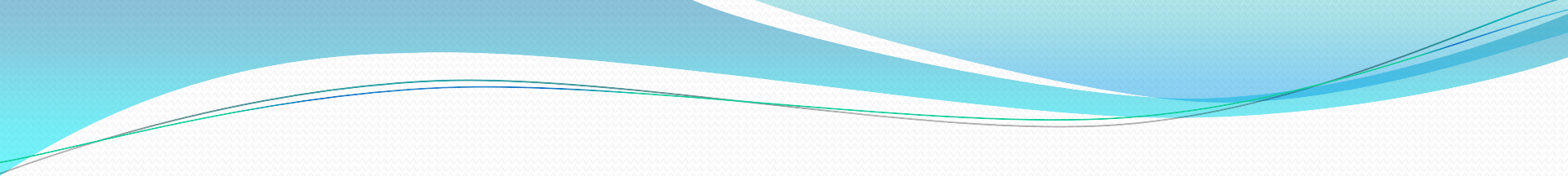
- Man’s ancient predators were often quadrupeds, and today what may be the leading human predator also has four legs, but it doesn’t move – *it is the chair*. It has been said that “*Sitting is the new smoking*”.
- Exercise is a modern concept. 100 years ago all life was a form of exercise. Now, exercise offers both new and old movement options in forms designed to create reasons to move.

Why so many seniors (and people of all ages) avoid exercise

- The ***NO PAIN, NO GAIN*** myth
- They bridge the generations where nearly all ADLs were physical exercise, and they have over their life-times embraced modern and technological advances over their years that have generally made movement more and more optional
- The gradually loss of function over years of minimal physical activity, combined with exercise options they find unpalatable have in many cases made many of them “exercise-phobic”.

But walking is the one exercise even “exercise-phobes” all do throughout their independent lives.

At some point in everyone’s life the truth of the axiom ***USE IT OR LOSE IT*** begins to impact ones quality of life. Once walking and the activities of daily life become challenging, without exploring exercise options that capable of maintaining musculoskeletal fitness and neurological health and function, successful aging is at risk.



Too often at this point in life, tools that claim to empower the aging instead result in even more physiological and neurological system deactivation, and further loss of function – and eventually the loss of the ability to function independently.

Sure tools for deactivation of muscles
critical to functional independence.

This is not my idea of "empowerment"

EMPOWER YOUR LIFE

Shop independent living products
online now or see an associate
for help with in-store ordering.

Shop now



A few other favored tools for a fast trip down the slippery slope to dependence *(not such a happy trip?)*



Far too many popular “mobility aids” significantly deactivate critical musculoskeletal function, as well as proprioceptive sensors, leading to accelerating overall functional declines!



There have always been a few problems with canes and walking frames



Seniors too often wait to adopt either cane or walker use until functional declines are already so advanced that little can be done to save them from the "slippery slope"

HOW MOST SENIORS FEEL ABOUT USING A WALKER...



Some important advantages of walking with specially designed poles ...

- **#1 -They are generally psychosocially preferred vs. canes and walkers – *converting mindset of the user from "invalid" to "athlete"***
- They provide two additional *lateral points* of contact
- Their use significantly activates critical back, arm, shoulder, chest and core muscles – in addition to the lower body
- They provide function improving positive stress the entire neuromyofascial network
- They activate additional proprioceptor cells throughout the body
- They make walking a overall bone health stimulating total body weight bearing exercise
- They significantly increase O₂ intake and distribution
- They almost immediately improve both posture and gait

To experience just how 2 poles activate important core and postural muscles...

- *Raise your hands off of your computer keyboard and mouse and extend them out as if offering them for a friendly handshake on each side of the keyboard.*
- *Make two fists and place them on your desk with your thumbs up.*
- *Finally, imagine that you have a pole in each hand and sit upright alternately pressing one fist, then the other firmly into the desk repeatedly for 15 -20 repetitions.*
- *As you do this, notice how a wave of contractions goes through your core/abdominal muscles as well as back muscles critical to good posture. This in addition to arm, shoulder, chest, and important spin stabilizing muscles which contract with every step.*

Turning ordinary walking into Total Body Walking®...

- Strengthens and develops the endurance of abdominal, back, arm, shoulder, chest, leg and all “core” muscles (*without separate resistance training!*)
- Efficiently delivers life and function sustaining oxygen to every cell in your body
- Easily burns 25-50% (and as much as 70%!) more calories with each step
- More importantly, you'll increase your basal metabolic rate (the calories you burn 27/7)
- Improves both “cardio”/cardiac muscle function and the health of your entire vascular oxygen and nutrient delivery system
- Develops the habit of deep, rhythmic, health promoting breathing
- Increases overall vigor, stamina and muscle endurance
- Stabilizes instead of stressing joints
- Improves lymph system function and boost your immune system
- Reduces pain and injury-causing stress on hips, knees and feet
- Helps maintain healthy overall bone density
- Maintains joint health and range of motion
- Improves both your posture and balance
- Improves the quality of your sleep and digestion
- Significantly lowers your risk of all major metabolic diseases and cancer
- Enhances both your brain oxygen levels and mood
- Helps maintain overall healthy optimal brain function and “plasticity”
- Experience a truly fun and convenient “good use” total body exercise

The importance of lateral stability in fall-prevention

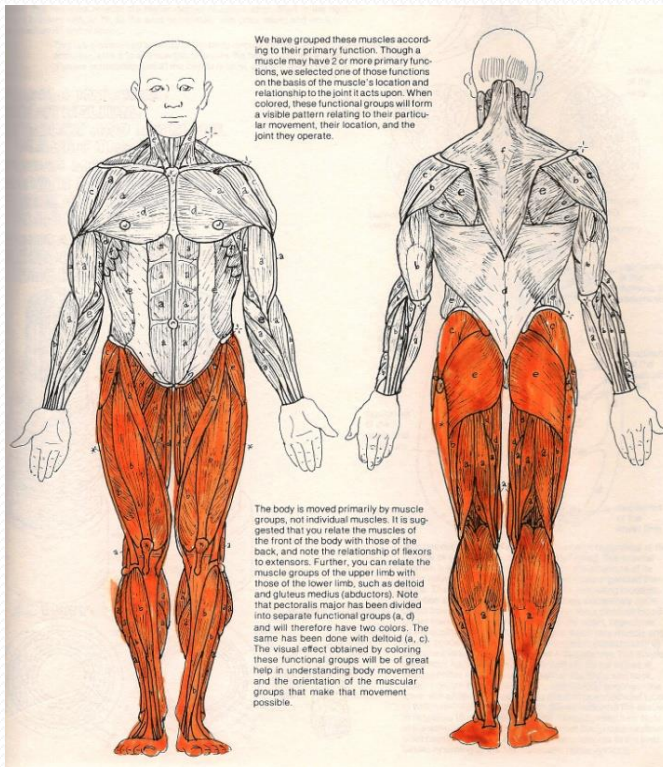
Holliday and Topper (1994) compared the association of different postural positions and the risk of falling in 100 ambulatory elderly people (aged 62–96). The best predictor of future fall risk was deficiency in lateral posture stability. “Although balance programs should be designed for all postural sway conditions, exercise professionals are encouraged to emphasize lateral stability exercises in older clients’ fall prevention programs.”

ex·er·cise[ek-ser-sahyz] – a putting into action, use, operation, or effect

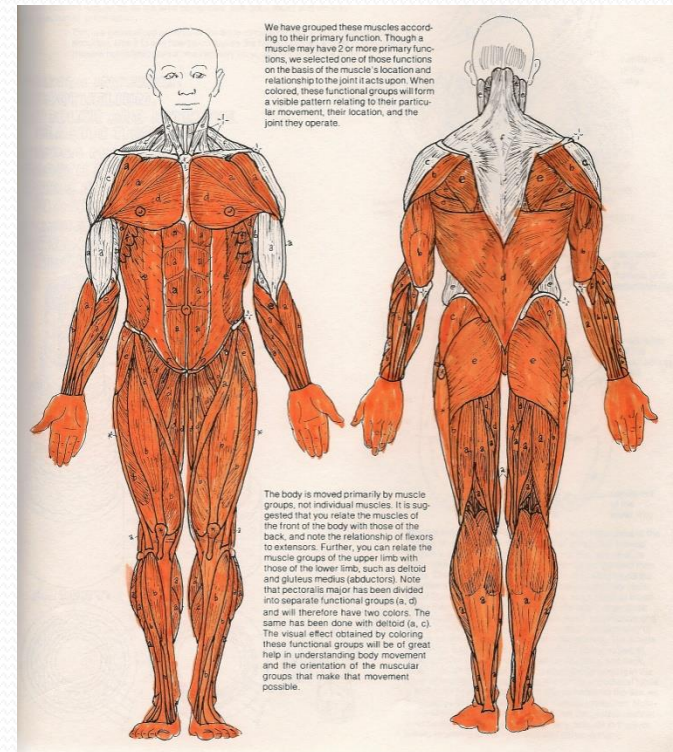
- Walking is a half-body exercise that significantly involves (puts to significant use) just 40% of the body's total muscle mass in moving the body.
- Walking with poles creates a total body exercise involving around 90% of the body's total muscle mass in moving the body.

(More than 50% of overall muscle mass is only peripherally involved in ordinary walking.)

By converting from bipedalism (pedal support only) to "upright quadripedalism" significantly more supporting and stabilizing muscle mass is put to significant functional use in ambulation



Walking significantly activates just 40% of the body's total muscle mass. Walking with poles activates nearly 90%, including critical core and postural muscles.



Putting one's body to good use is a very powerful form of preventative medicine

People who are regularly physically active...

- Incur on average \$2500 less in medical costs annually.
- Can reduce their risk of stroke and colon cancer by 50%
- Can reduce their risk of diabetes by 58%
- Can significantly reduce their risk of obesity, heart disease, osteoporosis and depression!
- Age more successfully by slowing the onset and progression of the “normal effects” of aging.

Comparing the efficacy of walking poles to canes and walkers...

More than a decade ago senior health and fitness expert Peggy Buchanan did the first walking pole pilot project at Vista Del Monte retirement community in Santa Barbara, CA. For eight weeks, 13 seniors averaging age of 86 traded in their canes and walkers for Exerstrider walking poles. At the conclusion of the pilot project none of the participants elected to return to their canes or walkers.

Screening the participants

The timed up and go (**TUG**) test was used to pre-screen the subjects for participation.

1. Stand up from a chair
2. Walk to a point 10' from the chair
3. Turn and walk back to the chair
4. Sit again

(Pilot project subjects were required to complete the TUG test in under 13 seconds)

In the decade since, the success of Exerstrider walking pole and pole exercise programs has gone global

- Successful Exerstrider pole exercise programs have been established in the US, Canada, Taiwan, Australia, Israel, the UK and have been introduced globally through numerous International Council on Active Aging conferences, as well as the World Conference on Active Aging conference.
- To learn more about some of these programs read an article in **The Journal on Active Aging** describing our very popular senior-friendly programs go to:

<http://www.walkingpoles.com/UserFiles/File/ICAA%20Journal%20Pole%20walking%20revised.pdf>

"Those who traded in walkers immediately began walking with a more upright posture and their gate pattern went from the 'walker shuffle' to a more normal walking gait – and the psychological benefits may have been as important as the physical benefits the physical benefits."

- Peggy Buchanan, M.A., Dir of Fitness, Aquatics & Physical Therapy at Front Porch, Inc



"My breathing is better, my posture is better, and my stride is better. I can get around the campus on these. I don't need a walker." -
94 years young Sophie



Exerstride “**fitness walking**” technique
– suitable for high functioning seniors
who have been screened and are not at
special risk of falling



Exerstrider's "***stability for mobility™ walking***" technique – recommended for seniors who have been screened and have been identified to be at risk of falling.



Because it is very difficult to offer proper instruction in a new physical activity through a PowerPoint presentation, for a complete video introduction to both my ***Total Body Walking***[®] and ***Stability for Mobility***[™] techniques*, go to...

*as well as to the design and operational features of all of our poles

<http://www.exerstrider.org/videos/1/34/exerstrider-instructional-dvd>

Length of poles is adjusted according to the desired technique.



For “**fitness walking**” technique, adjust the poles so that the heel of the boot-shaped tip is aligned with the heel of the shoe, the upper arm is perpendicular to the floor and the forearm is parallel to the floor. The poles will be at an angle.



For **Stability for Mobility™ walking**, the arms should be in the same position, but the poles should be adjusted about 2” shorter and go vertically to the ground from the hands.

The unique impacts that walking with poles has on physiological and neurological function

- Immediate activation and gradual increased function of critically important core, postural muscles and other upper body muscles that will impact ADLs
- Improvements in gait
- Increased proprioceptor activation/input
- Improved lateral support & 2 added contact points
- Increased O₂ distribution and metabolic activity
- The satisfaction of learning and rapidly mastering a new activity
- ***Increased confidence leads to increased frequency and duration of activity***

CORE FITNESS -- Akuthota and Nadler (2004) describe the core as an anatomical “box” in the mid-section of the body, with the abdominals in the front, the paraspinals next to the spine and the gluteals in the back. The diaphragm is the roof, while the pelvic floor and hip girdle musculature are at the bottom. The authors propose that the core functions as a muscular “corset,” working as a unit to stabilize the spine. It is the “foundation” of all limb movement.

Core muscles

The body's core is made up of a girdle of muscle, bone and joints. Strong core muscles can help balance, ease back pain and improve posture. When exercising, proper form is essential to prevent injury.

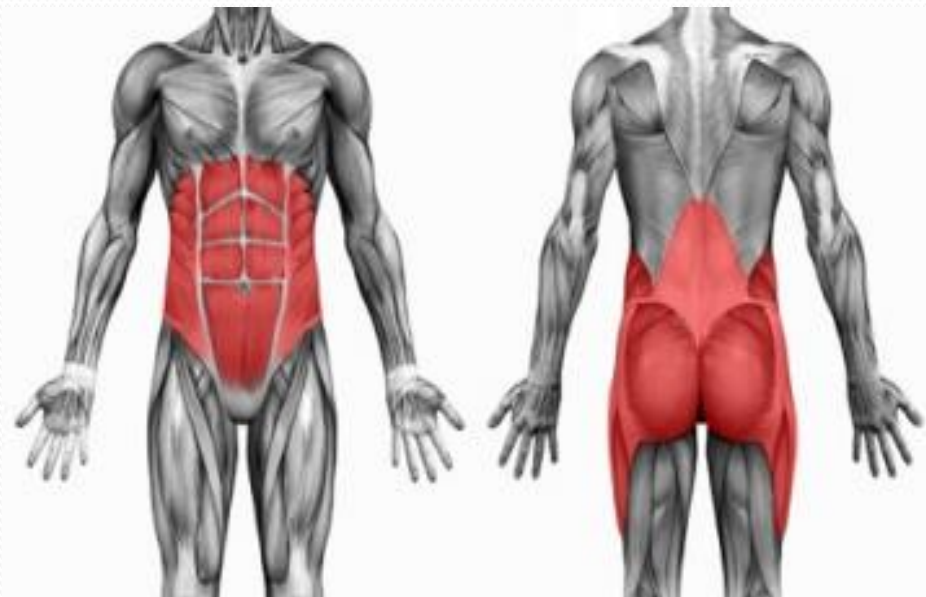
FRONT

Rectus abdominus —
HIP FLEXORS
 Quadratus lumburum —
 Psoas —
 Iliacus —
Transversus abdominis — connects to spine
 Internal obliques —
 External obliques —

Source: Harvard Health Publications

BACK

Erector spinae — runs from the neck to the lower back
Multifidus — strengthens spinal column
GLUTEUS MUSCLES
 Medius —
 Minimus —
 Maximus —



The effects of poor posture

- Di Bari (2004) documented that kyphosis is associated with dyspnea (*discomfort or difficulty breathing, shortness of breath*) and ventilatory dysfunction (abnormal breathing or oxygenation of the blood), as measured by pulmonary-function test data.
- In poor, or faulty, posture (aka postural dysfunction), there is an imperfect relationship among various skeletal structures of the body, and this may produce strain on the body's supporting framework (Britnell et al. 2005). With faulty posture, the body is balanced less efficiently over its base of support. Therefore, any restriction, imbalance or misalignment of the musculoskeletal structures will *have an adverse effect on the efficiency of all movement*.
- *Edmond et al. argue that this data is clear evidence that health professionals need to be proactive in developing interventions to minimize postural deviations and limitations.* Britnell et al. (2005) propose that exercise programs need to focus on improving muscular fitness, balance, agility, range of motion and coordination for older clients. They specifically note that strength and agility training has been shown to meaningfully reduce the risk of falling in older women.

Individuals with poor posture are also more likely to have poor self-image and less self-confidence (Watson & MacDonncha 2000).



The coming **Boomers** and the ever *increasing* importance of “successful aging”

According to the U.S. Census Bureau (2010), nearly 39 million Americans were 65 years or older in 2008. That total represents 13% of the U.S. population. By 2050 this group is expected to reach the 20% mark. With progressing age comes increased sarcopenia (age-related loss of skeletal muscle), osteoporosis (age-related loss of skeletal density), impaired balance and decreased range of motion. Add poor posture and shuffling feet to that list, and the risk for falling escalates. Statistics compiled by the Centers for Disease Control and Prevention (2009) show that more than one-third of adults aged 65 and older fall each year in the United States.

Sarcopenia (from Greek σὰρξ *sarx*, "flesh" and πενία *penia*, "poverty")

- Sarcopenia (↓ muscle mass & contractile force) occurs with age. Some of this muscle-wasting is due to diminished growth hormone production, but exactly how much is due to aging versus disuse is unclear.
- Sarcopenia is associated with increased fatigue & risk of falling (so may compromise ADLs).
- Sarcopenia affects all muscles including, for example, the respiratory muscles (↓ efficiency of breathing) & GI tract (constipation).

Osteopenia (from Greek οστό [osto], "bone" and πενία *penia*, "poverty")

Three types of exercise for maintaining (or even recovering) healthy bone density are:

- *Weight-bearing*
- *Resistance*
- *Flexibility/ROM*

Walking with specially designed poles and techniques effectively addresses all three

What is special to Exerstrider's total body walking® poles?

- Our exclusive ergonomic strapless grips maximize both the comfort and safety of the user.
- We offer 2 specially designed rubber tips in order to perfectly fit the needs of both fitness walkers and ***Stability for Mobility***™ walkers
- Our Medisport model (currently the Activator, and soon to become the **STABILITY+**) features a familiar, safe machine-grade spring-loaded button-in-hole locking system.

Other “Nordic walking” pole grips...

<Strap the user to the poles creating a significantly increased risk of wrist or shoulder injury in the event of a fall

<Straps inhibit proper circulation in wrist and hand

<Straps create a confusion and fear factor among all users and especially cognitively challenged users

<Encourage deviation from a neutral wrist alignment

<Have non-ergonomic handgrip designs



Our exclusive ergonomic “orthotic” strapless grip ensures a safe and comfortable neutral wrist alignment at all times!



Our optional knitted “Gripsocks™” make our handgrips even more comfy



“orthotic” flare supports “arch” of grasping hand-keeping safely aligned wrist

The strapless handgrips maximize both comfort and safety

Two rubber tip options specifically designed to meet the needs of our total body walking® techniques

The “boot-shaped” CushionGrip™ rubber tips are recommended for fitness walking



The “bell-shaped” Balance Tips™ are recommended for Stability fo Mobility™ walking



Our **Activator** (*soon to become our **STABILITY+***[™]) Medisport model features a familiar, safe spring-loaded button-in-hole locking system.

User's can clearly see, feel and/or hear the button lock into the desired hole!



Solid steel button with machine grade spring loading

A close tolerance between the size of the holes and that of the button results in secure and quiet operation

These poles are *not just for walking*.
Try "**Poga™**" – yoga-like stretches and
balance exercises with pole assist!





Poles can also be used for seated ROM, flexibility and balance exercises



Seated "wingspan" stretch



Seated marching with arms and legs



Seated overhead press



Behind the back shoulder stretch



Torso, hip and shoulder stretch



Forward flexion and shoulders



Calf and shoulder stretch



Shoulder and torso ROM

Standing balance and ROM



Marching in place



Calf and shoulder stretch



Wall leaning shoulder press



Hip and shoulder stretch

Walking pole assisted sit-to-stand exercise builds and maintains overall musculoskeletal function



Begin at the seat's edge with arms extended and tips of poles beside the forefoot.

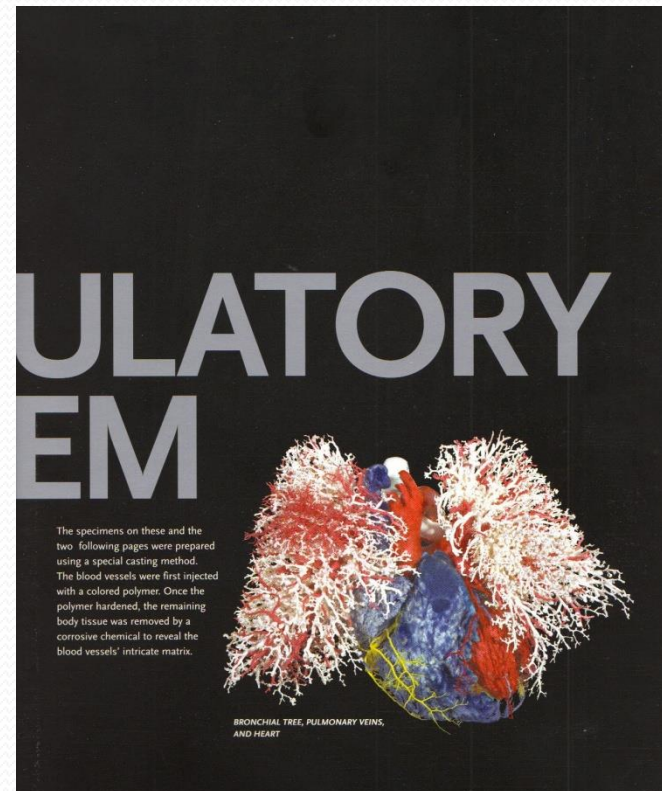
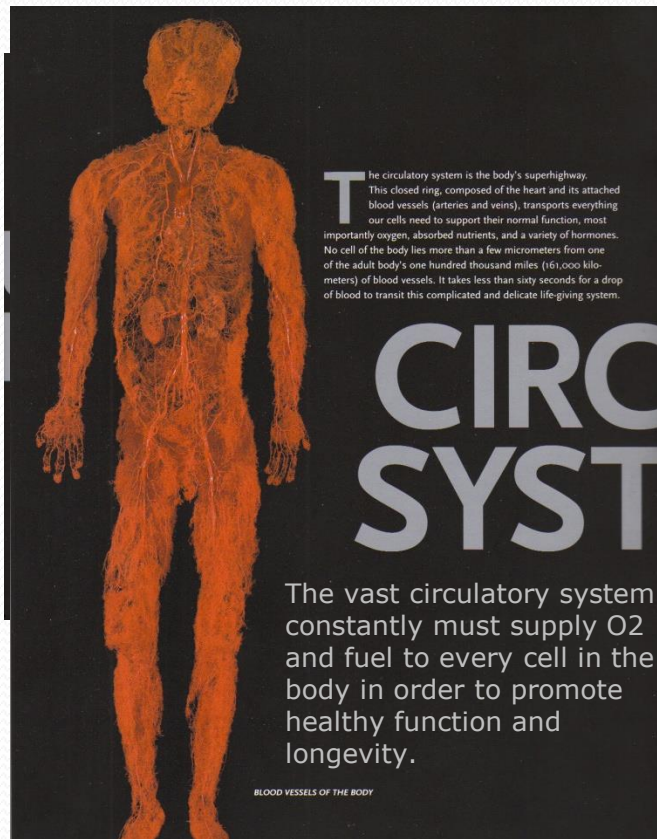


Push poles to engage core, arms, back and chest muscles to assist legs while rising from chair

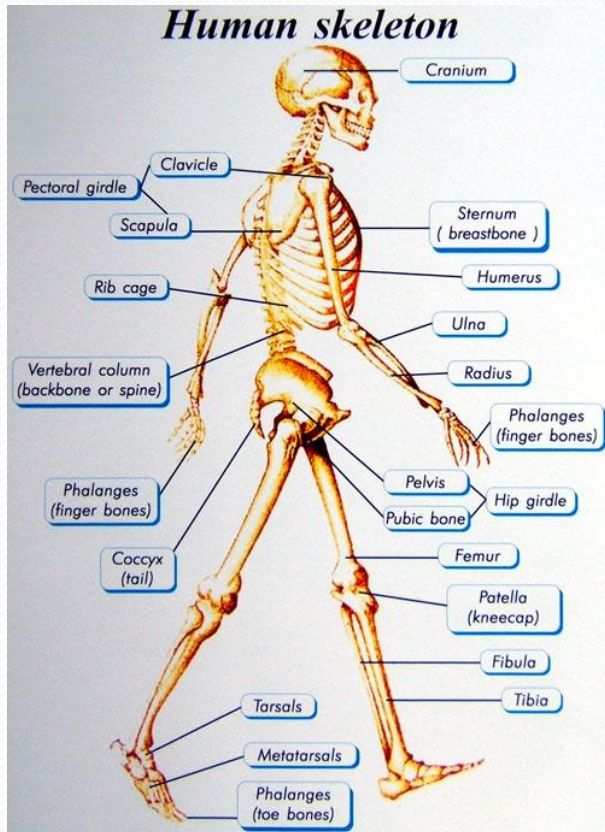


Rise to standing position while keeping arms extended. *Optional – engage muscles, sit and repeat!*

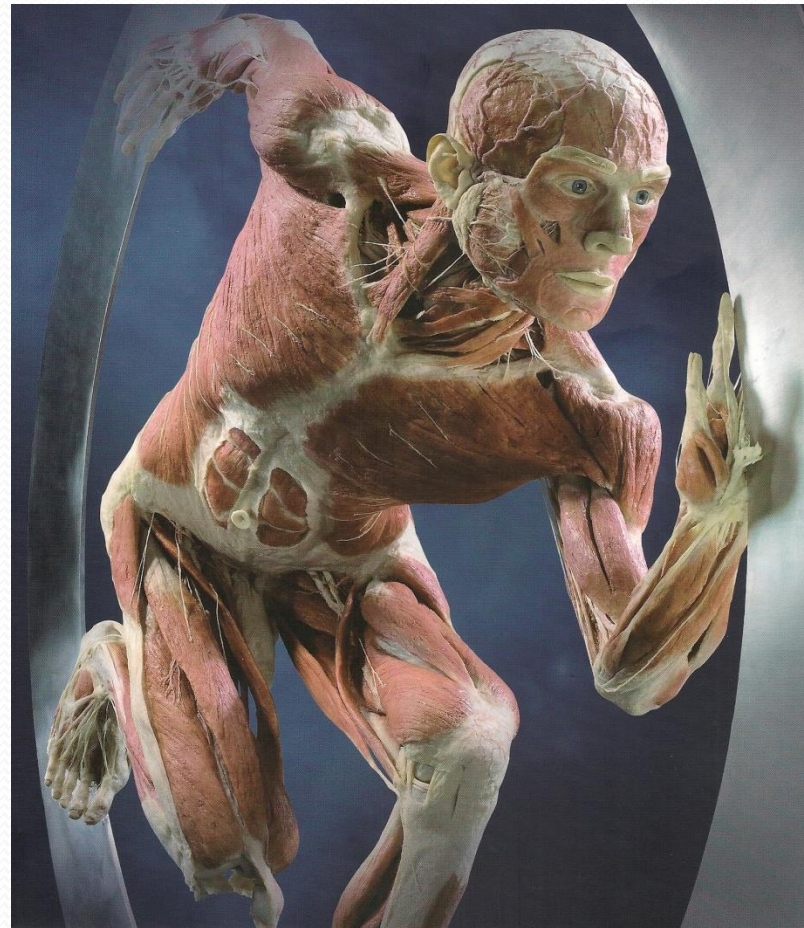
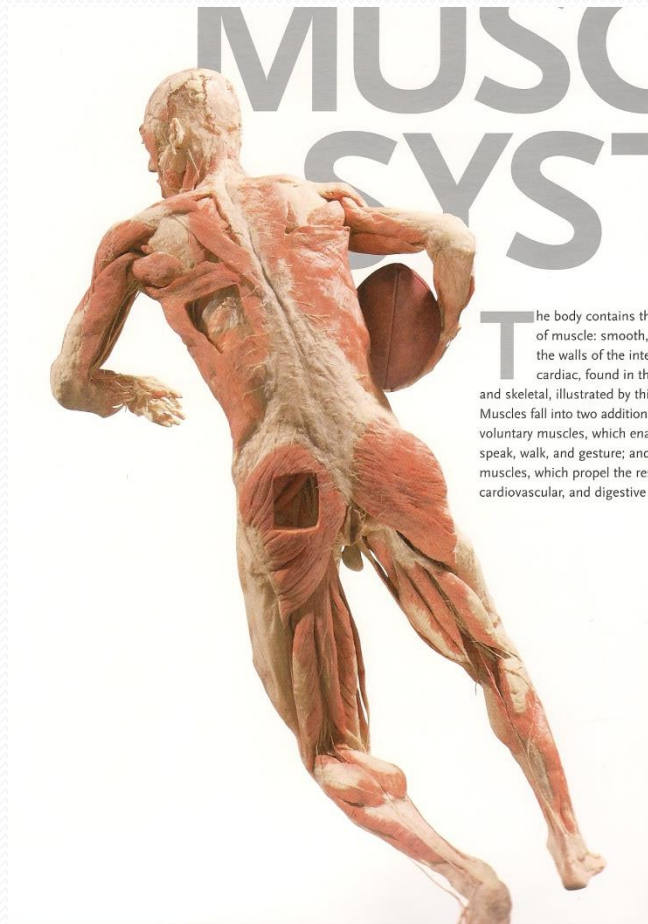
The health and functional lifespan potential of all 75 trillion human cells is dependent on the constant supply of O₂ and nutrients delivered via the efficient function of the lungs, heart and a vascular system that consists of a network of 60,000 miles of arteries, veins and capillaries. *Movement of the body on a regular basis is necessary for the efficient function of the lungs, heart and vascular systems.* When regular movement ends or decreases, the function of these life-giving systems gradually decline - eventually resulting in the end of life.



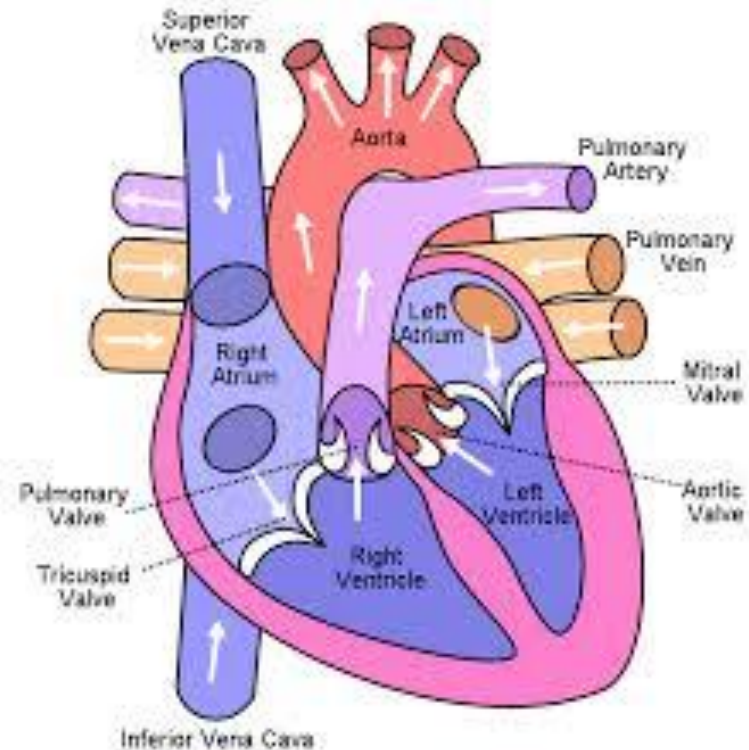
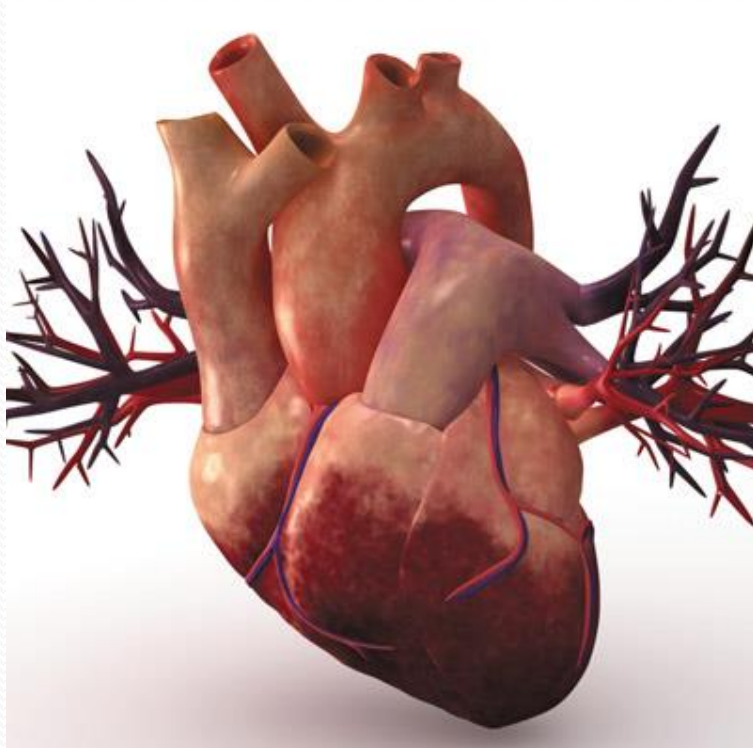
The skeletal system of the body is comprised of 206 bones. Without the connective and stabilizing forces provided by healthy tendons, ligaments and roughly 700 muscles (comprising about 50% of total body weight) – activate by our neurological system -- the skeletal system would (or will eventually) be nothing but a big pile of bones.



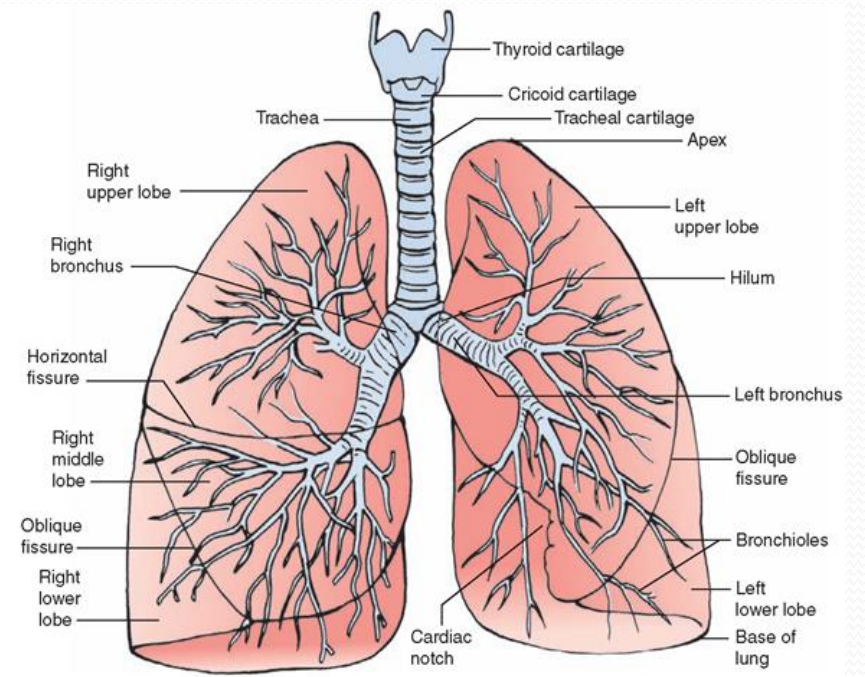
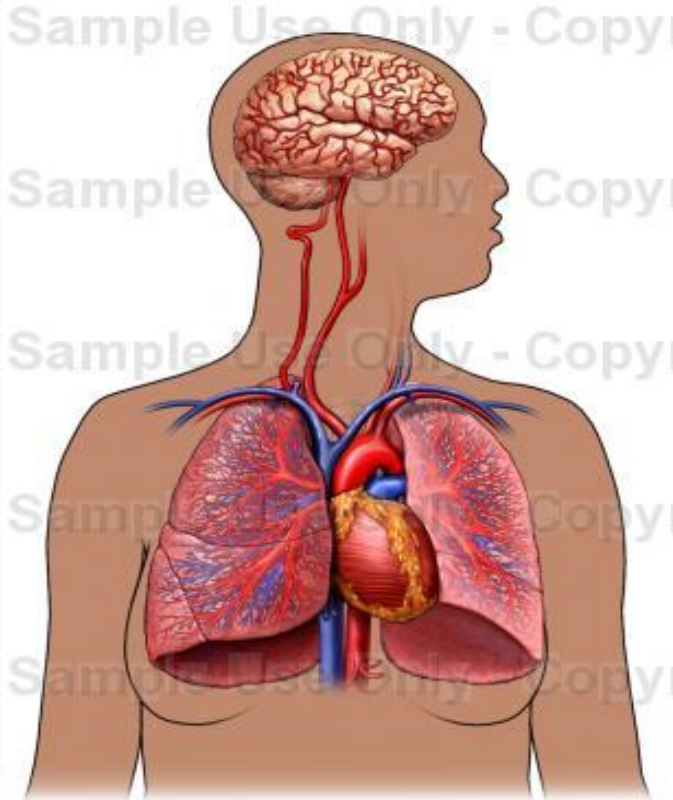
As long as the healthy/integrated function of the skeletal system and the “neuromyofascial” (muscles, connective tissues, muscles and neurological activation) system of the body can be maintained, the body is capable of both amazing movement & highly successful aging.



The human heart is a fist-sized muscle that beats roughly 100K times per day sending about 2,000 gallons of blood through the body's 60K miles of blood vessels to each of the 75 trillion cells of the body. *In a lifetime, the heart pumps about 1million barrels of blood (enough to fill more than 3 super tankers)*



Our lungs take in about 3,000 gallons of air (which is just 21% O₂) daily and extract only around 160 gallons of pure O₂ to supply the needs of all 75 trillion cells in the body. As the efficiency of the cardiopulmonary system decreases with age and decreased activity levels, increasing numbers of cells throughout the body starved of life-sustaining O₂ and nutrients gradually decline in metabolic function, "age" and eventually die.



The human brain weighs just 2% of total body weight, but throughout life it metabolizes 25% of the oxygen and 70% of the glucose. It has an estimated *100K miles of blood vessels and capillaries* which supply *100 billion neurons* which are linked by *1 quadrillion connections!!*



It takes a great deal of O₂ and glucose to sustain cognitive function!

As these each of these systems decline in function “normally” with age, the ability of the body to independently sustain just the normal activities of daily living decline gradually – eventually leading to dependency and then eventually to death.



The rate at which these "normal" declines occur can be greatly altered by regularly putting the body's systems to good use (beneficial exercises)!



Walking speed as a predictor longevity...

- A study in the Journal of the American Medical Association (JAMA) demonstrates that senior who can walk at a relatively speedy pace have the best chance to live to a ripe old age.
- Researchers at the University of Pittsburg pooled data from 9 studies that involved more than 34,000 seniors, and found that walking speed in people over 65 or older correlated with expected longevity.
- “The faster an older person can walk, the longer they can expect to live”.
- “Walking requires the cooperation of many body systems including the heart, lungs, blood, bones, muscles, joints, nerves and brain – and all of these systems synchronize, coordinate, and integrate in a way that allows an individual to select their own ideal walking speed”, and with good health sustain it throughout most of their life

Other major predictors of longevity are the Maintenance of...

- *Healthy bone density*
- *Muscle strength, endurance, joint stabilization and compliance.*
- *Neurological/Proprioceptive function*
- *Cognitive function*
- *Cardiopulmonary and vascular health*
- *Good mental health*
- *Social relationships*
- *Healthy metabolic and endocrine system function*

For additional information on Tom Rutlin's Exerstrider Total Body Walking® and Pole Exercise programs (as well as workshops and discounts) go to...

<http://www.walkingpoles.com/content/view/156/106/>

Or contact customer service @ 888-285-7392
or customerservice@exerstrider.com

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