



Words on Fitness Walking

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Fitness walking is the most accessible exercise for people of all ages. However, as people age, general physical problems tend to crop up – pain, stiffness, joint degeneration and loss of balance – general frailty and decrepitude.

This article undertakes to address those issues and to suggest how people might prepare themselves to get the most from a fitness walking program.

Pain

Pain commonly results from improper movement patterns. Here's how.

Tight muscles generate pain in three ways: muscle fatigue; over-compression and inappropriate movements at joints; and nerve entrapment (pinch) between muscle-and-muscle or between muscle and bone.

What may not be recognized, at first, is that improper movement patterns involve muscular tensions.

Coordination is acquired by learning; it's not automatically given by birth. In general, people develop their coordination (movement) patterns by example, by the daily demands of life, and by athletic training. Improper athletic training techniques often lead to acquired muscular tensions that are reinforced by continued training and athletic activity, itself. Young people also observe others, particularly family members, as their examples of how to move, and move that way for a lifetime.

Muscular tensions are also acquired by another kind of learning – the learning that injuries and stress provoke: tighten up. The common guarding reaction against pain -- cringing – involves muscular tension. A lifetime of injuries and stress shows up as muscular tensions that accumulate as aging progresses. Let me be clear about something: aging doesn't cause these muscular tensions; reactions to injury and stressful situations cause these

muscular tensions, which then often become habitual. The notion of "old injuries, old muscles" causing pain is a fallacy. What is behind the pain is "old tensions," still in place.

One common consequence of tight muscles' effects on joints, besides pain, is joint replacement surgery.

Stiffness

The term, "stiffness," describes the sense of extra effort required to move when muscles are no longer pliant, joints, no longer as flexible.

The term, however, is not very informative about its causes.

Muscles cannot and do not become stiff. They may become contracted, tight. The only things muscles can do is tighten and relax. The tightness of one muscle or muscle group attached to a body part (e.g., upper arm) interferes with the ability of its opposing muscles to cause movement of the same attached body part. The feeling is stiffness

For example, a tight biceps of the upper arm (which bends the arm at the elbow) interferes with the triceps (which straightens the arm at the elbow). The result is a sense of extra effort and stiffness.

Another cause of stiffness is joint friction. In the healthy state, joints are lubricated by a super-slippery liquid, called synovial fluid, secreted by the cartilage of the joint. As

people get older and fail to consume adequate amounts of water over a lifetime, their tissues, including cartilage, lose water. Synovial fluid decreases and thickens; internal friction makes joints stiffer.

Over-compression of a joint over time by over-contracted muscles leads to breakdown of the cartilage, further impairing its ability to generate synovial fluid.

Inflammation, by the way, is the body's way of force-feeding fluid into parts of the body that need it. Dehydration and joint damage may therefore result in joint inflammation to support secretion of synovial fluid.

Tight muscles not only cause improper movement, but also cause joint breakdown and stiffness, which compounds improper movement.

Balance

Balance results from good coordination and fluid movement. It depends particularly upon uprightness -- right-left symmetry. A side-tilt right or left, stooped posture or swayback throw balance off and decrease the speed at which we can move safely. Being off balance slows us down.

Balance is largely a matter of freely adjusting pelvic movements, which control the position of the center of gravity. A freely moving pelvis, in turn, depends upon responsive and

resilient musculature of the trunk and legs.

The oddity is that as people acquire muscular tensions and lose good balance, they do things like lean forward in the characteristic stooped posture of the aged. This action may be an attempt to minimize the distance between themselves and the ground, should they fall, but it actually predisposes them to a fall by shifting their weight forward of their center of support. It's a misguided effort. The most secure posture for balance is fully upright.

I'm not going to go into a discussion of posture, here, because posture follows from muscular control and coordination, and the techniques for cultivating them take more than a few words of advice.

Instead, I'm going to address some of the common forms of improper movement that lead to pain, stiffness, joint degeneration, and poor balance, and then speak of the form of training that can correct them.

ERRORS OF IMPROPER MOVEMENT

Arm Swinging

One common instruction given for walkers is "swing your arms." This is a less than ideal instruction; a better instruction is "turn your shoulders and chest side to side in rhythm with each step." This kind of instruction

leads to the undulating movements of the saunter, an attractive movement pattern typical of Fred Astaire.

Note that balance is maintained in walking by **opposite-and-balancing** turning movements of the chest-and-pelvis. These opposing movements involve a *twisting action* controlled by the muscles of the waist. The shoulders and arms follow the turning movements of the chest; the legs follow the turning movements of the pelvis (hips). This kind of movement is the basis of the saunter.

When a person swings their arms, they often do so as a substitute for that twisting movement at the waist; they do what I call, "the refrigerator walk," a term that makes sense if you've ever watched someone walk a refrigerator across the floor, which moves as a single block. How labored that is!

When shoulders and chest are thus immobilized, excessive muscular effort is needed at the hip muscles to swing the legs forward and back. This excessive effort conditions those muscles to get abnormally tight, which in turn compresses the hip joints and leads the hip joint replacement surgery. In addition, tight hip joint muscles (flexors and extensors of the legs) limit movement, slow walking speed and increase the labor of walking.

Proper twisting at the waist is essential for long-term health of the hip joints.

I've oversimplified this discussion a bit to make a point. Now, I'll add back what has been subtracted: the proper application of arm swinging.

In leisurely walking (strolling), the arms hang freely; the more vigorous the stride, the more the arms and shoulders engage to add power to the stride. The momentum of the arms, shoulders, and chest pass through the center of the body to the pelvis and legs with each new step to help move the hips and legs, which brings us to the next error of form:

Bent Elbows

In the natural strolling pattern, arms hang freely and move in a pendular rhythm with overall body movement.

In the natural saunter, arms and shoulders, now moving like a powered pendulum, contribute to movement.

In vigorous walking, arms and shoulders continuously recycle the momentum of the hips and legs by switching directions quickly, front to back and back to front. The arms and shoulders are not passive, but active, as movement pumps.

Bent elbows shorten the effective length of the arms, known in physics as "the moment arm," (for those

who know physics). Perhaps it would be better called, "the momentum arm," for the shorter the effective length, the less momentum is stored and retransmitted to the pelvis and legs.

Bent elbows contribute to the habit of immobilizing the muscles of the waist by reducing the effect of the upper body upon the lower body. Although the bent-elbow technique is preferred among seasoned fitness walkers, an alternate, straight arm technique efficiently passes momentum from the upper body to the lower while encouraging the twisting movements at the waist essential for fluidity and balance.

Walking on the Outer Edges of the Feet

The feet are constructed with the largest, weight-bearing bones at the inner three toes and smaller, balance-adjusting bones at the outer two toes. The outer toes form an arch that enables a foot to adjust to uneven standing surfaces. The average standing weight distribution on healthy feet is about 65% heels, 25% inner three toes, 10% outer two toes.

Errors of Thinking

Stretching

The purpose of stretching is flexibility, but it doesn't accomplish that purpose very well. Generally,

people find stretching difficult, painful, and slow. Stretching produces only a temporary reduction of muscular tension and disrupts coordination of the stretched muscles with the rest of the body.

Stretching hamstrings, for example, causes knee instability, which causes instability higher up in the body, which in turn interferes with balance and reduces the power available for walking.

Because we move as a whole and maintain our balance by good coordination, coordination is more important than isolated stretching of muscles. People need to think, instead, in terms of control. The control I speak of is control of movement, which also involves the ability *to relax* muscular tensions instilled by years of injuries and stress and to coordinate movements efficiently. Coordination is something that stretching can't develop.

I will introduce the alternative later on. For now, let's just say that there is a self-training process that can easily and lastingly eliminate the accumulated tensions of a lifetime *without stretching*, and thereby accomplish the goal of stretching, which is flexibility, and more: better coordination.

Chest Breathing

Many people believe that breathing comes from chest movements. However, relaxed breathing uses the diaphragm primarily and the chest only secondarily. The whole torso inflates.

Efforts to breathe deeply often end up becoming chest breathing. A better way to breathe deeply is *to exhale fully*, then let inhalation occur on the rebound. As an experiment, try exhaling and stay exhaled *until you feel the need to inhale*. Then, let yourself inhale. Feel the difference.

Foot Arches

The arches of the feet are not rigid architectural structures, but dynamic springs held in shape by the soft tissue of the feet and lower legs.

Fallen or high arches indicate muscular and soft-tissue problems in the legs and feet that can be improved by correct coordination training and sometimes by soft-tissue manipulation.

Chronic Tension Patterns Found in Many People

As I have said, chronic tensions, present in significant amounts in most people, interfere with good coordination, free movement, and good balance.

Now, I'll specify common patterns present in people, patterns that not

only interfere with mobility, but also with the results of training programs designed to prepare people for fitness walking.

Tight Hip Flexors

The hip flexors are the muscles at the fronts of the hips that cover the hip joints and bring the knees forward.

The visible sign of tight hip flexors is a butt that sticks out and a noticeable fold at the groin. When those muscles are too tight, they restrict the distance the leg can move back; they shorten the stride.

By shortening that distance, they also prevent the natural spring in the step called "toe-off."

Tight Chest Muscles

Tight chest muscles prevent free shoulder movements that add momentum to walking. They also restrict breathing.

Inability to swing the arms comfortably in large circles by ones sides generally indicates tight chest muscles.

Tight Hamstrings

The hamstrings do more than help propel the body forward; they also control foot direction and affect ground contact. Tight hamstrings are a common condition also remediable, not by stretching, but by retraining the muscles to their normal length and responsive

pliancy. Tight hamstrings produce the sensation of heavy legs and, by preventing the knee from straightening completely, causes the quadriceps muscles (fronts of thighs) to grind the kneecap against the knee joint, leading sometimes to kneecap pain (chondromalacia patelli).

Raised Shoulders

The muscles that raise the shoulders interfere with fluid shoulder movement and make walking more labored.

Tight Back Muscles

When back muscles are tight, they interfere with the free twisting movements of the waist necessary for a free saunter. In addition, they interfere with breathing and may introduce pain and stiffness to overall movement.

Tight Belly Muscles

The prized "tight gut" interferes with breathing, distorts posture (contributes to stoop) and interferes with free movement. A belly should be soft to permit easy breathing and upright posture.

The protruding belly is usually a sign not that the belly muscles are too soft, but that the back muscles are too tight. Those muscles bend the spine into a curve like that of an archer's bow; the belly naturally protrudes forward.

Tight Neck

A tight neck, apart from being painful, often indicates that a person is a “chest breather.” Chest breathing uses the neck muscles to lift the ribs to breathe. Compared to diaphragmatic breathing, chest breathing is inefficient and labored. Chest breathers often have a tight belly, as well.

Tight Calves

Tight calves contribute to fatigue in walking and something else – they deprive the walker of spring in the step. The reason? Tight calves are always somewhat fatigued and therefore weakened.

Another consequence of tight calves: tight hip joint flexors. The reason: lacking spring in the step to help propel the leg forward, the walker must overuse their hip flexors, which get conditioned to be tight.

FITNESS WALKING EXERCISES

One popular fitness-walking program offers a series of exercises to prepare people for fitness-walking.

I will describe and discuss a selection of those exercises, below.

High Knee Lift, Straight Knee Placement

INSTRUCTION: “Lift your knee high and straighten it as you bring your leg forward.”

Such an instruction is necessary for people who have:

drop-foot or tight calf muscles
tight hamstrings

Drop-foot is a neurological condition of weakness or flaccidity of the shin muscles. However, if tight calf muscles are involved, the correct instruction would be to retrain those muscles to be more responsive to free the foot for lifting.

If the involved muscle groups are not retrained, the exercise as described may lead to excessive arm motion in an attempt to help the leg movements made laggard by contracted muscles.

Hip Rotation Twist Drill

INSTRUCTION: “Exaggerate hip rotation very strongly so there is a stretch effect.”

Hip rotation depends upon free and responsive muscles of the waist. This exercise seeks to cultivate responsiveness of those muscles.

There is a tendency among people who don't have freedom and responsiveness at the waist to tighten the hip flexors too much to bring the leg forward in stride. That can lead to excessive muscle fatigue and joint compression.

Free hip movement proceeds in rhythm with chest/shoulder movements, but only if hip flexors are

free and the waist muscles responsive.

Cross-Foot Twist

INSTRUCTION: "Walk a line, crossing feet over the centerline, keeping upper body stabilized to minimize twist."

This is an exercise for the muscles of the inner thighs (the adductors). It is helpful for cultivating balance, as those muscles help control side-bending (through coordination with the trunk muscles) and leg positioning.

ADDED INSTRUCTION: Feel and squeeze with the inner thigh muscles of the rear leg to help the forward leg to cross over the line. Stay erect.

Arm Circle Drill

INSTRUCTION: Walk along a wall and swing your arm in a circle parallel to the wall.

This is an exercise that assists swinging of the arm, shoulders and chest, when synchronized with the walking rhythm. It depends upon free shoulder musculature.

People whose chest muscles are tight find this exercise impossible to do as described; they can't bring their arms behind them. Again, stretching won't help much, as those muscles are in the grip of a tension pattern maintained by the brain that must be unlearned before the muscles will fully relax and lengthen.

Quick Step Drill

INSTRUCTION: "Take short, fast steps with hip rotation and flexion; increase number of steps within a given distance."

This conditioning exercise develops speed of movement. It depends upon good balance and freedom of the hip musculature from excessive muscular tension.

Extension of the Leg Behind Drill

INSTRUCTION: "Feel the weight in the foot of the back leg move from heel to big toe."

This conditioning exercise seeks to cultivate longer stride and full foot contact with the ground. It depends upon freedom of the hip flexors (front hip joint muscles) and of the calves from excessive tension and upon responsiveness of the calf muscles (for spring in the step).

Quiet Upper Body Drill

INSTRUCTION: "Hold elbows at 90 degrees, hold hands still at hips – to isolate upper body from lower."

This exercise has the effect of damping out momentum that might otherwise be transmitted between the upper and lower body. An unnatural movement pattern not seen in agile individuals, cultivation of this movement pattern overworks hip flexors, impedes balance, and slows movement.

It might be used temporarily to cultivate hip movement in individuals who use a lot of arm and shoulder movement in walking, but the tendency to immobilize the pelvis during stride would defeat that purpose.

The tendency automatically to move the arms and shoulders is an inherent movement pattern built into the human design and should be cultivated, not interfered with or inhibited.

Walking Backward

Here's a little exercise you can try: alternate walking forward with walking backward.

Walking backward prevents the usual habits of movement from taking over. It gives you practice in making full foot contact with the ground and improves your balance.

Remember to alternate.

A Remedial Drill for Tight Calves

A movement maneuver called, "The Athletes' Prayer for Loose Calves," frees tight calves, imparts spring-in-the-step, and improves foot contact with the ground.

Instructions can be obtained via the internet by sending email to Athletes_Prayer@somatics.com.

CLOSING COMMENTS

Easy walking involves uprightness, fluid movement throughout the whole body, and responsive adjustments of the whole body to changes of speed and direction. In short, easy walking involves freedom of movement and good coordination.

In easy walking (stroll or saunter), arm and leg movements are syncopated and move in opposite, balancing directions (contralateral movement): shoulder/arm forward, hip/leg of the same side, back, coordinated by twisting movements at the waist.

In power walking, the arm and leg movements become less syncopated and increasingly synchronized, but still move in opposite, balancing directions.

The warm-up routine of most programs consists of stretching. However, where a person holds muscular tensions that interfere with free movement, something more than stretching or momentary efforts at good movement are required to develop freedom of movement and good coordination. A specific kind of training is necessary, one that first frees the involved muscles and then coordinates them with each other. There is a name for that kind of training: somatic training.

The term, "somatic," means "the body felt and controlled from within." Coordination is felt and controlled from within, and coordination is acquired by ones *learning* to be coordinated.

Generally, somatic training involves deliberate cultivation of feeling and control of specific movements. Those movements are then connected in coordination patterns that, when learned and second-nature bring speed and ease to movement. Somatic exercises cultivate and connect movements and can be used instead of stretching exercises. Lasting benefits include relief from old injuries, better balance, freedom of movement, speed, and prevention of future injuries (including prevention of falls).

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VIDEO

There is a world of difference between learning by demonstration and learning by instruction and practice.

As correct and instructive as the video was, it presents too much, too fast for people to remember, much less learn in the body.

Good points

highlights movement from the center of the body, not the hip joints

speaks of constant rhythm in walking

points out ears, hips, ankles in line (good alignment)

distinguishes inefficient movement -- arm movements side-to-side cause hip movements side to side -- from

efficient movement – arm movements more in line with the direction of travel

Not so good points

Demonstrates a seated exercise using elastic band in which arms and legs of the same side move the same direction (ipsilateral movement). While perhaps fun to do, contralateral movement is more often lost as people get older and is more important to restore or develop.

Bent elbows drain power from the walking movement.

arm movements with hands moving toward midline-center encourage twisting, but again, inefficient in terms of direction

SOMATICS:

"How to Walk Faster"

workshop: have walking interludes

flexibility aids

add Athletes' Prayer