

The Top 5 Ways to Make Your Active Lifestyle More Enjoyable

1. **Don't chance it!** About 65 out of every 100 of runners will suffer a significant injury this year, causing them to miss at least 10% of intended workouts. About 15 out of every 100 walkers will suffer an injury this year as well.

But doing just 3 things can prevent almost all of these injuries.

- 1. Wear the right type of shoes for your gait and replace them every 300-500 miles or 6-months—whichever comes first.**

- Walkers & runners generate impact and torque forces of 2-5 X's their body weight per step.
- These impact and torque forces travel with lightning speed through arches, shins, knees & back.
- The correct blend of cushion and control in a shoe redirects and minimizes these forces.
- But shoe midsoles only survive 300-500 miles.

- 2. Follow the 10% rule.**

- Never increase weekly time or distance more than 10%.
- Start with ultra-short sessions: 5-15 minutes, max.
- Why? Heart & muscles adapt to exercise stress quickly; bones & ligaments more slowly. Small increases allow adequate adaptation time—keeping you healthy.

- 3. Shorten and quicken your stride.**

- A long or plodding stride magnifies impact force; a shorter, quicker stride reduces impact force up to 40%.
- Every time your foot hits the ground, lift it right back up. You'll develop a lighter, quicker cadence; you'll push off less, and gravity will pull you forward more.

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2. **Save the girls!** The average woman's breasts can travel an additional 135 meters of distance (in 3-dimensional figure-8 movements) over the course of a 1-mile run. Exercising in the wrong bra or too old a bra can cause both discomfort and permanent damage to the outer skin and connective tissues (Cooper's ligaments) of the breasts.

But doing just 2 things can eliminate almost all discomfort and damage.

1. Get fitted for and purchase a sports bra with the correct amount of compression and/or encapsulation.

- 80% of women are wearing the wrong size bra. Get professionally fitted periodically, especially if losing or gaining weight.
- Band should be movement free in all positions.
- Cups should compress smaller breasts; cups should both compress & encapsulate C and larger sized breasts.
- Bra should minimize breast movement in all directions when bouncing & running in place in dressing room.

2. Replace sports bras after 60-90 uses & washes.

- To maximize lifespan, wash sports bras with other technical sports wear and delicates (never use bleach products, which destroy elasticity). Air dry only.
- Replace after 60-90 uses/washings. Not counting?
 - a. Buy 1 new bra and retire 1 old one with each new shoe purchase. If you replace your shoes on schedule, you'll replace your bras on schedule.
 - b. Try on an old & new to check replacement need.
 - c. Lay an old bra over a new bra. If old band is wider and straps longer, replace.

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3. **That smell isn't you; it's your clothes!** Workout clothes that wick sweat can last years when properly taken care of. But they are under attack from "funk", aka bacteria, from the very first use. Why? Body oils accumulate within synthetic fibers more easily than on natural ones. These body oils provide a welcome home to bacteria, and the bacteria are what cause your clothes to smell.

You can do three things to help fight funk.

1. **Dry your clothes ASAP after working out.**
 - Bacteria multiply in moist environments.
2. **Wash with WIN detergent or a ½ cup of vinegar and air-dry.**
 - Using WIN detergent or ½ a cup of vinegar helps reduce bacteria density and creates a less bacteria-hospitable environment. Regular washing doesn't.
 - Odor-producing bacteria that live on synthetic fabrics are invigorated by heat, so don't machine dry, which adds extra heat and re-activates those stinky little biota.
3. **Replace clothes after two years.**
 - After two years, it is almost certain that bacteria have established a permanent beachhead in any fabric.
 - Elasticity and other important fabric characteristics have also likely deteriorated to the point of deserving replacement.

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4. **Don't waste your time working out.** Performing aerobic exercise too hard or too easy is a waste of time. Do it too hard, and you exponentially increase risk of injury, and you reduce the aerobic benefit. Exercise too easy and you reap almost no benefit.

Do just 1 or 2 things to maximize the aerobic benefit of your workouts.

- 1. You should be able to smile and mean it, but still hear your breathing at least 80% of the time.**
 - Most runners run too hard and most walkers stroll too casually. You don't see a whole lot of smiling runners, and that's a shame.
 - Many walkers receive little more than joint articulation and fresh air as the result of their efforts.
- 2. Wear a heart rate monitor.**
 - The watch will beep when you're going too easy or too hard. It's really that simple.

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5. **The world's 2 biggest killers are your enemies too: dehydration and malnutrition.** Over the last 50-100 years, the actual nutrient levels of many fruits and vegetables have actually declined 5%-50%. Over the course of a single warm day outside, you can lose up to 15% of your weight due to dehydration—enough to kill you if not replenished. And any continuous exercise bout over an hour can leave your electrolyte and carbohydrate stores completely wiped out.

Supplementation is not an option today.

1. Consume electrolyte and carbohydrate replacement products during exercise bouts that last longer than 1 hour.

- Humans carry enough onboard electrolytes and carbs for about 1 hour's worth of sustained activity.
- GU's, NUUN tablets, and other supplements are designed to quickly replace lost electrolytes and carbs when taken during exercise. They will help you recover faster and feel better afterwards, too.

2. Drink water in small amounts throughout the entire day.

- The rule is, consume $\frac{1}{2}$ your body weight in ounces—if you're sedentary. If you exercise, drink even more!
- Any time the temperature is above 65 degrees, dehydration is a guaranteed losing battle during exercise. You will always lose more than your body can process back in during exercise.

3. Take at least a multivitamin and fish oil supplement every day.

- Even with a perfect diet, nutrient levels of today's foods will likely leave your body malnourished.
- A multivitamin plugs in many of the nutrient holes in your diet.
- A fish oil supplement provides omega 3 fatty acids that reduce internal inflammation (linked to heart disease), increase antioxidants (to reduce free radical damage of cells), and improve circulation and blood pressure. It may also protect nerve sheaths in the brain, reducing dementia and Parkinson's risks.



SOURCES

SHOES

<http://www.sportsinjurybulletin.com/archive/running-injuries.html> running injures 65%/year, missing 10% of scheduled workouts on average. Five anatomical 'hotspots' for running injuries are:

- (1) The knee (25-30% of all injuries to endurance runners occur there);
- (2) The calf and shin (20% of all injuries);
- (3) The iliotibial band - a long sheath of connective tissue which runs from the outside of the hip down to the lateral edge of the knee (10% - see also SIB issue 7);
- (4) The Achilles tendon (8-10% - see also SIB issue 5), and
- (5) The foot - the focal point for hobbling injuries like plantar fasciitis (10 percent

<http://www.sportsinjurybulletin.com/archive/0123-common-sports-injuries.htm> Running and high-intensity aerobic dance follow fairly closely, with 11 injuries per 1000 hours (or about one per 100 hours).

A variety of other sports are ranked below, with the number of injuries per 1000 hours of activity in parentheses ('Injuries in Recreational Adult Fitness Activities,' The American Journal of Sports Medicine, vol. 21 (3), pp. 461-467, 1993).

6. Resistance training with weight machines (4)
7. Resistance training with free weights (4)
8. Outdoor cycling (3.5)
9. Stationary cycle exercise (2)
10. Stair climbing (2)
11. Walking (2)

<http://www.drpribut.com/sports/spknees.html>

Orthotics can be a great assist in the therapy of patellofemoral pain syndrome and patellofemoral dysfunction. A variety of studies over the years have shown their effectiveness in treating this in runners. A recent study (Saxena 2003) claimed 76% improved, 2% asymptomatic after previous failed treatment. Orthotics limit the maximum amount of excessive pronation. They also have been demonstrated to reduce the speed (acceleration) of internal tibial rotation. Reducing the speed of internal tibial rotation will reduce the amount of sudden stresses applied to the undersurface of the patella and the need for the VMO (vastus medialis) to work so hard in maintaining proper tracking and positioning of the patella. As per Newton's Laws slower motions will require less force to counterbalance them.

Treatment Summary:

Consider More Stable Shoes (with better anti-pronation features)

Orthotics If Needed (OTC or Custom)

BRAS

<http://walking-running-training.suite101.com/article.cfm/sports bras for runners>



Breasts bounce 135 metres when a woman runs a mile. Going tech-free under a running top on many runs will cause breast pain and damage permanently a woman's breast.

When running, a woman's breasts do a "figure of eight".

A woman running puts stress on the Cooper's ligaments, irrespective of the size of her breasts. A breast can weigh between 200 to 300 grams. Breast movement during running in the wrong bra will damage the breast's outer skin and connective tissue – the Cooper's ligaments – permanently. Running without adequate support by a sports bra can make breasts sag and cause pain.

http://walking-running-training.suite101.com/article.cfm/choosing_the_right_sports_bra

Though sports bras can be expensive, female runner should think of them as an investment in their own health and fitness. Much like running shoes, the right sports bra is an essential part of a regular running routine. The right choice can keep women comfortable and pain-free through the entirety of their running career.

<http://www.realbuzzrunbritain.com/articles/buying-the-right-sports-bra-for-running/>

<http://www.realsimple.com/beauty-fashion/shoes-accessories/lingerie-hosiery/when-replace-sports-bras-10000001642932/>

a sports bra should last about 100 wearings. Not keeping tally? Here's how to know when it's time to send your old jog bra the way of those '80s leotards and headbands.

APPAREL

<http://www.donkeyjawposse.com/2007/09/do-your-workout-clothes-stink.html>

- CLOTHING SMELL IS CAUSED BY BACTERIA. Body oils accumulate on synthetics more easily than on natural fibers. These body oils provide a welcome home to bacteria. These bacteria are what cause your clothes to smell.

- DON'T THROW YOUR CLOTHES IN THE DRIER. The odor-producing bacteria that live on synthetic fabrics are invigorated by heat. Machine drying adds extra heat, which helps re-activate those stinky little biota.

WATER

<http://www.faqs.org/nutrition/Smi-Z/Water.html>

The body of an adult male is approximately 62 percent water, while an adult female is 51 percent water. Mild dehydration occurs with a loss of 5 percent or less of a person's bodily fluids, moderate dehydration is a loss of 5 to 10 percent of a person's bodily fluids, and severe dehydration is a loss of 10 to 15 percent of fluids

www.oregon.gov/DHS/spd/provtools/nursing/study_guides/dehydration.pdf -



2% dehydrated by the you feel thirsty thirsty.

Adults lose about ten cups of water each day

0 -1 percent Thirst

2 -5 percent Dry mouth, fatigue, mental & physical performance impairment

6 percent Increased body temperature and dizziness

7 percent Lack of sweating and collapse

8 percent Increased weakness

10 percent Muscle spasms, swollen tongue, delirium

11 percent Kidney failure

<http://www.nature.com/ejcn/journal/v57/n2s/full/1601897a.html>

An athlete training hard in a spell of warm weather, or a person with a heavy manual job working in the same conditions, may lose several litres of sweat in a single day: in extreme conditions of work in the heat, daily sweat losses may reach 10–12 l or even more. This amounts to about one-quarter of the total body water content for the average man, and about one-third for the average woman.

<http://www.nutrition.headlinesindia.com/health-nutrition/malnutrition-older-adults.html>

Malnutrition also comprises of under-nutrition in which a human body suffers from lack of nutrients. An under-nutrition condition occurs due to deficiency of one or more than one nutrients.

<http://www.medicinenet.com/dehydration/page2.htm>

http://en.wikipedia.org/wiki/Omega-3_fatty_acid

- Correct type of inserts can help dress and casual shoe control the foot better too.
 - You have unique gait, so guidance with shoe selection is important to finding the right amount of control and support (4 classes of support with variations in each)
4. Athletic shoes have lifespans of 300-500 miles (walking or running) or 6-months of regular use. Guidelines from American Podiatric Medical Association.
- Can't see it, and it happens gradually, so many don't notice the breakdown. Just think shoes always felt however they currently feel; because no relative scale to judge against—like someone who needs glasses but has never had them. Put new glass of the right Rx on though and WOW! What a difference.
 - Try new on one foot, old on the other. If new shoes needed, new is taller and softer!
 - Buy new athletic shoes twice a year to protect your self.

Body oils accumulate on synthetics more easily than on natural fibers. These body oils provide a welcome home to bacteria. The bacteria are what cause your clothes to smell.

1. materials make exercise more comfortable
 - Cotton fights to hang on to moisture/sweat, creating bacteria-rich environment that smells and breeds ultimately hazardous bacteria.
 - Bacterial growth in apparel and shoes is not eradicated by regular washing (unless discoloring and elasticity-killing bleach is used).
 - Cotton also gets rough when wet, leading to chafing and rubbing
 - Materials that wick keep you from overheating
 - Materials that wick also reduce chafing and rubbing
 - Materials that wick also reduce smell and risk of bacteria growth
2. Plan to replace workout apparel every 12-18 months, as bacterial growth eventually occurs in even the best wicking apparel.

High impact activities like running, aerobics and even walking for some create forces of up **to xx lbs** on women's breasts, leading to discomfort (to say the least) and permanent damage to soft tissue structures of breasts.



1. The right amount of support and the right size in a sports bra reduces pain and increases comfort and health of soft tissue structures in the breasts.
2. Sports bras have life spans of about 60 washings
 - Elasticity breaks down due to use and washings, losing xx% of elasticity and support after 60 or so uses and washings
 - replacing sports bras when you buy shoes is a good way to stay on schedule