Believing These Persistent Fitness Myths Can Sabotage Your Success

July 06 2012

By Dr. Mercola

There is no shortage of misinformation when it comes to diet and exercise. The fitness industry is a multi-billion dollar business based on selling you one piece of equipment or another, one supplement or another, constantly bombarding you with images of "the perfect body" if you will only do this or that.

Unfortunately, marketing perpetuates myths, and these myths are further perpetuated by word of mouth. Some of these myths will hold you back from achieving your fitness goals—or worse yet, damage to your body and your health.

- Are you under-exercising?
- Or maybe *over-exercising*?
- Are you on the right supplements?

Are you stuck with your progress toward your weight loss and fitness goals? Maybe you have unknowingly bought into some of the same exercise myths that I did over the years. It's time to take a look at fact versus fiction, when it comes to diet and exercise. Let's take a look at several of the more common exercise myths making the rounds today.

Myth #1: Long Cardio Workouts are the Key to Weight Loss

If you walk into any gym, you'll likely observe like I do that the majority of people working out are using the cardio equipment, believing they're getting an excellent workout. I really don't blame them as I was caught up in the same misinformation for over 40 years. Only recently did I learn there are FAR better forms of exercise, especially if you're 40 or above. There is a growing body of science showing that longer workouts are not better—which is great news if you are already trying to fit 25 hours of activity into every day.

Runners can rejoice—your days of spending long hours pounding the pavement each morning are finally over!

Science continues to confirm that shorter, higher-intensity burst workouts result in greater fat burning, greater development of lean body mass, and a variety of other benefits than the more time-consuming cardio routines of yesteryear.

The reason for this is that high-intensity burst exercises, like what I've incorporated into my Peak Fitness program, engage all the different muscle fibers in your body, including a certain group of muscle fibers that you cannot engage through conventional aerobic cardio. High-intensity burst exercises also boost your body's natural production of human growth hormone (HGH), a hormone produced by your pituitary gland that is key for physical strength, health and longevity.

High-intensity burst exercises require only a 20-minute time investment two to three times per week for optimal benefits.

I've been doing high-intensity burst exercises since April 2010 and have shed over 17 pounds of fat and three inches off my waist, while gaining more than seven pounds of muscle, all while dramatically reducing the time I spend in the gym. My Peak Fitness program is a comprehensive exercise plan that also includes strength training, core exercises, and stretching. But please remember that 80% of those results were related to the foods I was choosing to eat. It is the combination of the right foods and exercise the produces the results.

Myth #2: When it Comes to Exercise, More is Better

Although nearly everyone reading this is probably exercising too little, it is important to realize you can also sabotage your weight loss efforts by over-exercising. In this case, your body goes into an elevated stress response, keeping your cortisol levels too high. Cortisol, also known as "the stress hormone," is secreted by your adrenal glands and is involved in a variety of important metabolic functions, such as regulating your insulin and glucose levels, and controlling inflammation. Elevated cortisol will cause your body to store fat instead of building muscle.

Recovery is absolutely crucial to your long term success. You simply must provide your body with the opportunity to rebuild and restore itself after you stress it with intense workouts.

I no longer recommend marathon running and other high endurance exercises because science has now confirmed that these extreme endurance races place extraordinary stress on your heart—even if you're very fit.

Long-term endurance athletes have been found to suffer from diminished function of the right heart ventricles and increased cardiac enzyme levels, which indicate injury to the heart muscle itself. In 12 percent of endurance athletes, scarring of the heart tissue is detectable one week post race. Regardless of what type of exercise you do, always *listen to your body* as it will give you important feedback about whether or not you are overexerting yourself.

Myth #3: You Need to Take Supplements to Build Muscle

Muscle is hard to build and easy to lose. As you age, this is even more pronounced. Building a lean, healthy body depends on your *overall diet,* not just the right supplements, contrary to what you might hear at the gym. As I have said many times, with few exceptions, supplements should *supplement* your foods—not replace them. Strength training and resistance training are also key for building a lean body.

The leaner you are, the higher your metabolic rate will be. Weight training (aka resistance training) should be an integral part of your total fitness routine, which is why it's an important component of my Peak Fitness program.

Good nutrition requires eating a wide range of high-quality, fresh whole foods, such as organic vegetables, grass-pastured meats, organic eggs, etc., and minimizing your sugar intake. For more comprehensive nutritional guidelines, refer to my Nutrition Plan. If you are interested in augmenting your fitness routine and want to incorporate some supplements, there are a few that stand out above the rest:

- **Omega-3 fats**: Omega-3s benefit your heart and reduce inflammation, which may decrease your muscle soreness after a workout. Omega-3s also aid in tissue repair—and *many* other things. Research suggests the overall best omega-3 supplement is krill oil. Omega-3s can also improve your insulin response, and their deficiency has been linked to obesity.

- **Carnosine**: Carnosine is composed of two amino acids, beta-alanine and histidine, which help buffer acids in your muscles and serve as a potent antioxidants to quell inflammation, thereby reducing muscle soreness. (As an added note, research has also shown that fresh ginger can alleviate sore muscles.) Beta-alanine is probably more important if you are going to supplement with carnosine. This is particularly important for those who choose to avoid animal protein.

- **Conjugated Linoleic Acid (CLA)**: Research shows CLA is beneficial in lowering your body fat while preserving muscle tissue, and may also increase your metabolic rate. The best source is grass-fed beef, but if you don't have access to this, you may want to consider a supplement.

- **Whey Protein** High quality whey protein is not really a supplement but a food, and it's one of the highest quality sources of protein you can consume. Whey protein contains a complete range of the amino acids necessary for building muscle, and benefits your heart as well. Whey protein should be consumed at the appropriate time with respect to exercising, for maximum benefit.

Myth #4: You Need a Sports Drink to Replenish Your Body's Electrolytes when Exercising

For most average exercisers and athletes, sports drinks are not only a waste of your money, but they are typically far more harmful than helpful to your health. Most sports drinks are loaded with things you DON'T want, like refined sugars, artificial colors and chemicals.

If you exercise for 30 minutes a day at a moderate to high intensity, fresh, pure water is the best thing to help you stay hydrated. It's only when you've been exercising for longer periods, such as for more than 60 minutes or in the heat, or at extreme intensity levels where you are sweating profusely, that you may need something more than water to replenish your body.

Besides plain water, coconut water is one of the best and safest options to rehydrate you after a strenuous workout. Coconut water has a powerhouse of natural electrolytes, vitamins, minerals, trace elements, amino acids, enzymes, antioxidants and phytonutrients, and is low in sugar but still pleasantly sweet. Depending on how much salt you've lost through sweating, you might even add a tiny pinch of natural Himalayan salt to your glass of coconut water. One study in 2007[i] found sodium-enriched coconut water to be as effective as commercial sports drinks for whole body rehydration after exercise, with less stomach upset.

Myth #5: Stretching Before Exercise Will Prevent Injury

Traditional warm-ups are seriously flawed. One of the most common mistakes is stretching—doing the wrong type or the wrong amount of stretching—during the warm-up. Stretching too much or in the wrong way can actually *cause*, rather than prevent, injury. Mild stretching is okay, but keep each stretch brief. Five to 10 seconds per body part is usually sufficient; keep your repetitions below six.

It is better to do more sets at low repetitions than low sets at high reps during a warm-up. Save the more intense stretching for later in your workout.

The best type of stretching to do before a workout is *dynamic* stretching, as opposed to *static* stretching (which is what most people do). I personally have been doing active isolated stretching for the past three years. I consider it a vital element of my exercise program and seek to do it daily if time permits. I typically do it at night before I go to bed while I relax.

Myth #6: If You Don't Exercise When You're Young, It's Dangerous to Start When You're Older

You are never too old to start exercising. In fact, exercise gets even more important with advancing age. Research shows that, no matter your age, you stand to gain significant improvements in strength, range of motion, balance, bone density and mental clarity through exercise. Ideally, you will have made exercise a regular part of your life long before you reach your "golden" years… but if you haven't, there's no better time to start than the present. Research has shown that regular exercise, even initiated late in life, offers profound health benefits.

For example, consider the following scientific studies:

- Even a small amount of exercise may protect the elderly from long-term memory loss and even help reverse some of the effects of aging.[ii]
- Women between the ages of 75 and 85, all of whom had reduced bone mass or full-blown osteoporosis, were able to lower their fall risk with strength training and agility activities.[iii]
- Moderate exercise among those aged 55 to 75 may cut the risk of developing metabolic syndrome, which increases heart disease and diabetes risk.[iv]
- Among those who started exercising at age 50 and continued for 10 years, the rate of premature death declined dramatically, similar to giving up smoking and mirroring the level as seen among people who had been working out their entire lives.[v]
- Exercise significantly improved muscle endurance and physical capacity among heart failure patients with an average age of 76.[vi]

My mother is a perfect example of how exercise can benefit the elderly. She began a workout program in 2010 while still recovering from a fall in 2009 in which she fractured both her shoulder and wrist. Exercise has been extremely helpful to her in regaining strength, balance, and flexibility.

COROLLARY to Myth #6: The Dreaded Spread is Inevitable

"Middle-age spread" is avoidable! People often DO gain weight as they move into middle age, but this is due to decreased activity, rather than an inevitable by-product of aging. Remember though that optimizing your weight is about 80 percent related to the foods you are eating.

If you aren't engaging in regular exercise as you age, your muscles will atrophy, a phenomenon called sarcopenia (age-related muscle loss). The key to avoiding sarcopenia is challenging your muscles with appropriately intense exercise. Age-related muscle loss affects about 10 percent of people over 60, with higher rates with advancing age. This loss of muscle means you'll burn fewer calories when both active and at rest, so your body composition tends to shift to less muscle and more fat.

The good news is that this dreaded spread can be prevented (or reversed) with a comprehensive fitness program that incorporates anaerobic exercise, core strengthening, resistance training, stretching, and of course good nutrition.

Seize the Day!

If you're still on the fence about starting an exercise program, there's no time like the present. I guarantee it will make a major difference in your energy level, self-esteem and probably your entire outlook on life. It is really THAT powerful, whether you're 18 years old or 80!

It's important to incorporate a wide variety of activities into your exercise routine, to provide comprehensive conditioning and prevent boredom. If you've been sedentary for any length of time or you're out of shape for some other reason, then *start slowly*. One of the main reasons people don't stick with an exercise routine is because they go too hard, too fast and wind up with an injury, illness or simple exhaustion.

For tips on getting started, I invite you to explore my fitness site, Mercola Peak Fitness, which is a treasure trove of exercise videos and articles. It's a wonderful resource to help you become fitness savvy and make exercise a regular and enjoyable part of your life.

References:

[i] Southeast Asian J Trop Med Public Health July 2007
[ii] Journal of Neuroscience August 10, 2011
[iii] J Am Geriatr Soc May 2004
[iv] Am J Prev Med 2005
[v] BMJ March 5, 2009
[vi] Euro J Cardiov Nurs September 2011

This Exercise Can Cause a 7-Fold Surge of Heart Problems

June 01 2012 |

By Dr. Mercola

Do you dread going to the gym for what feels like hours at a stretch? Or do you avoid working out altogether because you just don't have the time? Then what I'm about to tell you should be music to your ears: sometimes when it comes to exercise, *less is more*.

It's becoming increasingly clear that *too much* exercise, particularly long bouts of cardio, can cause more harm than good.

And while most Americans would be well served to exercise more, there's probably no need to work out for more than 45 minutes or so at a time, as long as you exercise correctly and *efficiently*. In fact, one of the most effective exercises I know of takes just 20 minutes for the whole workout (I'll explain more below)...

When Good Exercise Goes Bad...

Getting your heart pumping with regular cardio exercise is important. As your heart rate rises, the amount of oxygen in your blood improves, and endorphins, which act as natural painkillers, increase.

Meanwhile, aerobic exercise activates your immune system, helps your heart pump blood more efficiently, and increases your stamina over time. But there is a cut off point to these benefits, and if you push your cardio session too long it can actually harm your body, leading to:

- A catabolic state, in which your tissues break down
- Excess cortisol (stress hormone) release, which not only contributes to catabolism but also chronic disease
- Microscopic tears in muscle fibers (which will have trouble healing if you continue over-exercising) and increased risk of injuries
- A weakened immune system
- Insomnia, especially if your workout is in the afternoon or evening

Research emerging over the past several years has now given us a whole new understanding of what your body requires in terms of exercise, and many of our past notions have been turned upside-down. It's now clear that exercising too much can be a serious blow to your health.

Too Much Cardio Can Even Damage Your Heart

One of the best examples of the risks of over-exercising can be gleaned from marathon runners. Running a marathon is often seen as the epitome of fitness and the ultimate show of endurance. But it puts an extraordinary stress on your heart.

According to a study presented at the Canadian Cardiovascular Congress 2010 in Montreal, regular exercise reduces cardiovascular risk by a factor of two or three. But the extended vigorous exercise performed during a marathon raises cardiac risk by seven-fold! Long-distance running also leads to high levels of inflammation that may trigger cardiac events[i] and damage your heart long after the marathon is over.

In a study published in the *Journal of Applied Physiology*,[ii] researchers recruited a group of extremely fit older men. All of them were members of the 100 Marathon club, meaning athletes who had completed a minimum of 100 marathons. If running marathons provided cardiovascular benefit this would certainly be the group you would want to seriously examine. So what did they find?

Half of the older lifelong athletes showed some heart muscle scarring as a result, and they were specifically the men who had trained the longest and hardest.

Research has also revealed heart scarring after elite cardio training. Published in the journal *Circulation*,[iii] an animal study was designed to mimic the strenuous daily exercise load of serious marathoners over the course of 10 years. All the rats had normal, healthy hearts at the outset of the study, but by the end most of them had developed "diffuse scarring and some structural changes, similar to the changes seen in the human endurance athletes."

Yet another study showed that long-term endurance athletes suffer from diminished function of the right ventricle of the heart after endurance racing.[iv] They also had increased blood levels of cardiac enzymes, which are markers for heart injury, and 12 percent of the athletes had detectable scar tissue on their heart muscle one week post-race. So it is more than likely that if you over-exercise you will do your body great harm.

Ideally, to get the most benefits you need to push your body hard enough for a challenge while allowing adequate time for recovery and repair to take place. It turns out that one of the best ways to do this is to follow a fitness regimen that mimics the movements of our hunter-gatherer ancestors, which included short bursts of high-intensity activities -- but not long-distance running such as is required to complete a marathon or even an hour on the treadmill.

Short Bursts of High-Intensity Exercise Gives You More Benefits in Less Time

Earlier I mentioned an incredibly efficient workout that you can complete in just 20 minutes. I was referring to Peak Fitness. After a three-minute warm up, you raise your heart rate up to your anaerobic threshold for 20 to 30 seconds (this can be done by sprinting, using an elliptical machine, recumbent bike, etc.), followed by a 90-second recovery period. Then repeat that cycle for a total of eight repetitions, as shown below.

Download Interview Transcript

According to fitness expert Phil Campbell, author of "*Ready Set Go*," getting cardiovascular benefits requires working all your muscle fibers (you have three different types) and their associated energy systems. Curiously enough, this cannot be achieved with traditional cardio... Your heart has two different metabolic processes:

1. The aerobic, which require oxygen for fuel
2. The anaerobic, which do not require any oxygen

Traditional strength training and cardio exercises work primarily the aerobic process. High-intensity interval training, such as Peak Fitness, on the other hand, work your aerobic AND your anaerobic processes, which is what you need for optimal cardiovascular benefit. As an added boon, when you perform Peak Fitness exercises properly, you will also increase your human growth hormone (HGH), which increases your muscle growth and effectively burns excessive fat. Naturally enhanced HGH release also plays an important part in promoting your overall health and longevity.

When you work out, it is wise to push as hard as you possibly can a few times a week, but you need to wisely gauge your body's tolerance to this stress, and give your body time to recuperate. In fact, you should not do Peak Fitness more than three times a week. If you do, you may actually do more harm than good -- similar to running marathons. I personally do them about once a week if I am doing strength training as this give me enough time to recover.

You Can Also do High-Intensity Super-Slow Weight Training

Dr. Doug McGuff, M.D., an emergency room physician, is a proponent of high-intensity interval training using weights, which is purposed to achieve many of the same results as Peak Fitness using cardio equipment. If you watch the interview you will see he advocates even LESS exercise and recommends only using a very intense program once every 7 to 10 days. I am not convinced that this is ideal but it may be, so I still do three workouts a week, two strength training and one Peak Fitness.

In the interview above, he discusses both high-intensity anaerobic-type training, and high-intensity super-slow weight training. He believes you only need 12 minutes of Super Slow type strength training once a week to achieve the same growth hormone production as you would with Peak Fitness! Intensity is key, and, according to Dr. McGuff, when the intensity is really high, the frequency may need to be reduced in order for it to be really productive.

These exercises can be done using either free weights or machines. The benefit of using a quality machine is that it will allow you to focus your mind on the effort, as opposed on the movement.

Dr. McGuff recommends the following five movements:

1. Pull-down (or alternatively chin-up)
2. Chest press
3. Compound row (A pulling motion in the horizontal plane)
4. Overhead press
5. Leg press

Here's a summary of how to perform each exercise:

1. Begin by lifting the weight as slowly and gradually as you can. The first inch should take about two seconds. Since you're depriving yourself of all the momentum of snatching the weight upward, it will be very difficult to complete the full movement in less than 7-10 seconds. (When pushing, stop about 10 to 15 degrees before your limb is fully straightened; smoothly reverse direction)
2. Slowly lower the weight back down
3. Repeat until exhaustion. (Once you reach exhaustion, don't try to heave or jerk the weight to get one last repetition in. Instead, just keep trying to produce the movement, even if it's not 'going' anywhere, for another five seconds or so. If you're using the appropriate amount of weight or resistance, you'll be able to perform four to eight repetitions)
4. Immediately switch to the next exercise for the next target muscle group, and repeat the first three steps. When done in this fashion, your workout will take no more than 12 or 15 minutes.

The Importance of Recovery

You exercise because it makes you feel better, and for most, it helps keep your weight at an optimal level. It's also one of the best treatments for insomnia and reducing insulin resistance, as well as being a wonderful aid in the treatment of depression. So the reasons to exercise are many. If you start slow, and most importantly, listen to your body, you shouldn't run into the problem of exerting yourself excessively.

If you're a serious athlete, however, you may want to reconsider how you train. From my perspective you can train for two goals, either to maximize athletic competitiveness, or train for longevity and increased fertility (especially for women). In my view, it is not possible to do both as they have conflicting workout patterns.

As I've discussed before, research has shown that replacing those long cardio sessions with shorter, high-intensity burst-type exercises, such as Peak Fitness, actually produces GREATER results in far less time! But recovery is crucial...

This includes not only resting your body in between workouts but also giving it the proper nutrients it needs in the recovery phase, as your post-workout meal can support or inhibit the health benefits of exercise. For instance, fast-assimilating protein such as high-quality whey protein, eaten within 30 minutes of your workout, will essentially "rescue" your muscle tissue out of the catabolic state and supply it with the proper nutrients to stimulate repair and rejuvenation.

References:

- [i] Am J Cardiol. 2001 Oct 15;88(8):918-20, A9
- [ii] J Appl Physiol. 2011 Jun;110(6):1622-6
- [iii] Circulation. 2011; 123: 13-22
- [iv] European Heart Journal December 6, 2011 [Epub ahead of print]

This Exercise Mistake Can Give You a Heart Attack

January 27 2012 |
By Dr. Mercola

Many people wonder whether it is safe to exercise outdoors during cold weather, especially below freezing.

As a general rule, it is; but you do want to make sure you take certain precautions, and pay attention to signs and symptoms of specific cold-weather dangers.

Additionally, there are likely better and safer options than exercising outdoors during very cold temperatures.

Three primary dangers of cold weather exercise are:

- Frost bite
- Hypothermia
- Increased heart attack risk

Better Options than Exercising in Cold Weather

There are several concerns about exercising in cold weather and the colder the weather the more serious the concern.

It is unclear the damage you can do if you are rapidly ventilating large amounts of frigid air.

Your lungs were not designed to breathe in large amounts of very cold air, which may also have very little moisture, and it's unclear whether you might cause some damage this way.

Fortunately most areas do not have many weeks or months of extremely cold temperatures, so this is something that would have to be moderated, typically, for only a few days or weeks until the weather improves.

I used to be an avid runner and would run year round in below zero temperatures. However the older I got the wiser I became and I gradually increased the minimum temperature I would run in. This was until I decided that after 42 years of running I had enough and switched to Peak Fitness exercises and strength training instead of running.

Another potential concern and danger is slipping and falling on an icy patch. Yes I did this too and actually broke one of my wrist bones (carpal navicular), which took about six months to heal, so I was in a highly inconvenient and uncomfortable cast for about a half a year. This wasn't a serious problem but older individuals can fall on the ice and break their hip, and a significant number of people actually die after breaking their hip as a result of a lung clot (pulmonary embolus) after long periods of immobilization.

So it would seem highly prudent to go indoors under extreme temperature conditions and do some high intensity training on a recumbent bike or elliptical, or do some strength training Peak Fitness exercises until the temperatures warm up. If you feel you need to or would like to exercise outdoors then I have listed some additional concerns and recommendations below.

Signs of Frostbite and Hypothermia

Once the thermometer dips down to 20 degrees Fahrenheit (-6.6 degrees Celsius) or so, you'll want to use extreme caution and make sure to protect your skin from exposure, as such subfreezing temperatures dramatically increase your chances of developing frost bite.

Your cheeks, nose and ears are the most vulnerable, but your hands and feet are also easily affected. Early warning signs of frostbite include a stinging sensation, numbness or loss of feeling. If you suspect you may be developing frostbite, you'll want to get out of the cold immediately, and slowly warm the affected area. You should NOT rub the affected area however, as this may cause skin damage.

If the numbness persists, you need to seek emergency care.

Hypothermia is when your core body temperature slips below 95 degrees Fahrenheit (35 degrees Celsius). Most of your body heat is lost through your skin, and as much as 50 percent of it can be lost via your head—which is why you should always cover your head during cold weather. As the air temperature gets colder, your body compensates by shivering. The increased muscle activity generates body heat. But if the heat loss is greater than your body's ability to generate it, then your core temperature starts to fall.

As it falls, your body compensates by shunting blood away from your skin and towards your vital organs such as your heart, lungs and brain. Of your organs, your brain and heart are the most cold-sensitive, and as your core temperature drops, the electrical activity in these organs slows. Eventually, if your temperature drops too low, heart- and brain activity ceases altogether, and you die.

If you suspect hypothermia, you need to seek immediate emergency help. Symptoms of hypothermia include:

- Intense shivering
- Slurred speech
- Loss of coordination
- Fatigue

Who Should Avoid Cold Weather Exercise?

Besides drawing blood away from the surface of your skin, in toward your vital organs, as described above, when you are in low temperatures outdoors, your cardiovascular system also tends to respond by increasing blood pressure and heart rate, which can promote a heart attack. Additionally, when you're cold, your airway tends to narrow, making breathing more difficult.

Therefore, exercising in cold weather may not be ideal if you have any of the following health conditions. If you do, I'd recommend conferring with your doctor prior to engaging in cold weather exercise:

- Asthma
- Exercise-induced bronchitis
- Heart condition
- Raynaud's disease (a condition that limits blood circulation to certain areas of your body, causing them to numb in response to cold temperatures or stress. This may not only make it difficult to determine whether or not you're getting hypothermic, the reduced blood flow may also increase your risk)

How to Stay Warm and Safe During Cold Weather Exercise

If, for whatever reason, you determine that you want to exercise outdoors then it would be prudent to exercise some caution. Dressing appropriately and paying attention to the following safeguards can help keep you safe and warm when exercising outdoors this winter:

- **Dress in three or more layers:**
    1. Use a lightweight synthetic material to wick moisture away from your skin. *Avoid* heavy cotton materials as these absorb sweat, trapping wetness close to your body, which can increase your risk of hypothermia
    2. Add another layer or two of wool or fleece for insulating warmth
    3. Top it off with a lightweight, water-repellant and wind-resistant material
- **Always wear a hat,** as you lose about 50 percent of your body heat from your uncovered head
- **Wear gloves** to protect your fingers from frostbite. Layering thin gloves with heavier mittens is a good idea so you can remove a layer if needed without exposing your bare skin to the frigid air
- **Cover your face with mask or scarf** when the temperature is below freezing to avoid frostbite. This can also help warm the air a bit before entering your lungs
- **Wear sturdy footwear with good traction** to prevent slips and falls on snow or ice
- **Check the temperature and the forecast.** Health risks increase when the combined temperature and wind chill falls below -20°F
- **Wear light and/or reflective clothing** as it gets darker sooner during the winter months. You want to make sure drivers can see you

- **Drink plenty of fluids.** Staying properly hydrated is just as important during cold weather as during hot weather. Drink before, during and after your workout, even if you don't feel very thirsty, as dehydration may be more difficult to notice during cold weather exertion
- **Tell someone what route you're taking, and when to expect your return**, just in case something goes wrong. If you slip and fall in the winter, hypothermia can get the better of you if no one knows to go looking for you

While staying warm is important, a common mistake people make is actually dressing *too warmly* when exercising in cold weather. Remember that exercise will generate body heat and sweating, even though it's cold outside. And once your sweat starts to accumulate in your clothes, it can have a significantly chilling impact. If it's really cold outside, it may even end up freezing close to your skin, which can lower your body temperature and increase your risk of hypothermia. Staying DRY is equally important as being warm—hence the importance of putting on a wicking layer closest to your skin, and dressing in layers so you can remove a layer or two if you're sweating profusely. Just remember to put those layers back on once you begin to cool down.

Keep in mind that wind chill can make exercising risky even if you dress warmly. As a general suggestion, I'd recommend taking a break from outdoor activities if the temperature dips well below 0 degrees Fahrenheit (-17.8 C), or if the wind chill factor is high, and opt to exercise indoors instead.

How to Find Time for Exercise

Aside from the question of safety, many people probably struggle more with finding the time to exercise... More than half of U.S. adults don't get the recommended amount of exercise, and 24 percent are completely sedentary. But exercise doesn't have to take up a lot of time, and it *can* be built into your everyday routine.

BBC Health suggests a number of ways in which you can be more active at work and at home, such as:

- Talk to your employers about promoting health at work
- Walk or bicycle to and from work
- Walk your child to school, but recognize you will need far more intense exercise than walking to achieve any major benefits
- Be active in and around your home -- use the stairs to exercise, work in the garden, or install some gym equipment

These are all excellent recommendations. However, I recommend not settling there, but continuing and implementing a well-rounded fitness program to really optimize your health benefits. Of course, if you're just getting back into exercising, you'll need to work your way up slowly. Trying to do too much at once can lead to burnout and make you less likely to continue your program—which is why starting with the suggestions above can be such a great way to ease into a more regimented fitness program.

As your body grows more conditioned, you can then increase to a higher intensity workout.

To achieve the full range of benefits of exercise you need to exercise more intensely so you will want to tailor your fitness plan to include a variety of more challenging techniques. You should be getting not only

strength training and aerobics, but also core-building activities, stretching and, most importantly, anaerobic or high-intensity interval training-type exercises. Please don't make the mistake I did for decades by wasting your time logging in steady, hour-long cardio sessions on the treadmill as your primary form of exercise. It's actually one of the *least* effective forms of exercise there is...

High intensity interval training, on the other hand, whether you do it on a treadmill or a recumbent bike, or using weights, has been shown to be one of the most effective forms of exercise—even providing benefits you can't get any other way! For more information, please follow the hyperlinks provided.

Make Exercise a Non-Negotiable Part of Your Schedule...

Whenever you struggle with your time management, remember that exercise is every bit as important as eating, sleeping and breathing... It should not be viewed as an ancillary part of your day, but rather a *necessity*. Viewing exercise as a non-negotiable part of your day is really the trick to getting it done. Ideally, schedule it into your appointment book the way you would an important meeting or social event. Set the time for it and then make no excuses about keeping it.

Ideally it is something that you would schedule an appointment for even if you are doing it alone. You would certainly need to do this if you had a personal trainer, which is one of the reasons trainers are good as they help you keep your exercise commitment. But it is just as easy to make an appointment for yourself.

What you'll find is that the more you exercise, the better you'll feel and the more addictive it will become. Soon you won't want to miss your exercise sessions because you'll notice a dip in your energy or stamina when you back off for too long.

You just have to place a HIGH PRIORITY on it and schedule your day around the exercise, not the other way around... Also, please don't use your age as an excuse to avoid exercise, because no matter what your age, exercise can provide enormous benefits for your health. As a matter of fact, if you happen to be over 40, it's especially important to either start or step up your exercise program. This is the time of life when your physical strength, stamina, balance and flexibility start to decline, and exercise can help to counteract that dramatically.

So get up; get outside; and get going! Regardless of the season, you *can* exercise outside—or take it indoors if you prefer. The option is yours—the possibilities are just about endless!

Sources and References

- Boston.com January 4, 2012
- BBC Health December 2010
- Mayo Clinic

Simple Activity to Radically Decrease Breast Cancer Risk

January 27 2012
By Dr. Mercola

Breast cancer is a growing epidemic among women, with just under 12 percent of women developing an invasive form of the disease during their lifetimes.

This works out to about one in eight U.S. women!

Research suggests, however, that one of the most powerful ways to lower this risk substantially is through the simple act of exercise.

New research is underway to determine just how much exercise -- either 150 minutes or 300 minutes a week -- is best for cancer prevention, but it's safe to say that starting an exercise regimen, if you're not already participating in one, is a very wise strategy to optimize your health.

Exercise May Reduce Your Breast Cancer Risk by Up to 40 Percent

The notion that exercise may help prevent cancer dates back to 1922, when two independent studies observed that cancer deaths declined among men working occupations that required higher amounts of physical activity.

It wasn't until the 1980s that the topic received due attention once again, and since then a paper in the journal Medicine & Science in Sports & Exercise reported that "more than a hundred epidemiologic studies on the role of physical activity and cancer prevention have been published."

In the same paper, which reviewed published epidemiologic studies on physical activity and the risk of developing cancer, it's noted that:

"The data are clear in showing that physically active men and women have about a 30-40% reduction in the risk of developing colon cancer, compared with inactive persons … With regard to breast cancer, there is reasonably clear evidence that physically active women have about a 20-30% reduction in risk, compared with inactive women. It also appears that 30-60 min·d-1 of moderate- to vigorous-intensity physical activity is needed to decrease the risk of breast cancer, and that there is likely a dose-response relation."

More recently, two other studies echoed this finding:

- Women who were active at home during the day, engaging in heavy lifting or carrying rather than mostly sitting, had a 38 percent reduced risk of invasive breast cancer
- Strenuous activity in teens and moderate activity after menopause also lead to a reduction in breast cancer risk

Why Might Exercise be Useful for Cancer Prevention?

One of the primary reasons exercise works to lower your cancer risk is because it drives your insulin levels down. Controlling insulin levels is one of the most powerful ways to reduce your cancer risk. It's also been

suggested that apoptosis (programmed cell death) is triggered by exercise, causing cancer cells to die. Exercise also improves the circulation of immune cells in your blood. The job of these cells is to neutralize pathogens throughout your body, as well as destroying precancerous cells before they become cancerous..

The better these cells circulate, the more efficient your immune system is at defending itself against infections and diseases like cancer.

Unfortunately, many public health guidelines still focus only on the *aerobic* aspects of exercise, and this exclusive focus can lead to imbalances that may actually *prevent* optimal health. This is why it's so important to maintain a well-balanced fitness regimen, that includes not just aerobics, but also strength training, stretching, and most importantly, high-intensity interval training (which I'll discuss shortly).

Additionally, according to a 2000 study published in the British Medical Journal, which explored the relationship between exercise and cancer, exercise affects several biological functions that may directly influence your cancer risk. These effects include changes in:

Cardiovascular capacity	Energy balance
Pulmonary capacity	Immune function
Bowel motility	Antioxidant defense
Hormone levels	DNA repair

If You Have Breast Cancer, Exercise is Also Beneficial

Many health care practitioners advise their patients to avoid exercise during and after cancer treatment. But increasing evidence is showing that this outdated advice is actually causing cancer patients harm, as regular exercise can lead to a number of health improvements for cancer patients, including:

- Better aerobic fitness
- Increased muscular strength
- Improved quality of life
- Less fatigue

Harvard Medical School researchers found patients who exercise moderately -- 3-5 hours a week -- reduce their odds of dying from breast cancer by about half as compared to sedentary women, so this is a very powerful strategy. In fact, any amount of weekly exercise increased a patient's odds of surviving breast cancer. This benefit also remained constant regardless of whether women were diagnosed early on or after their cancer had spread.

Patients receiving the biggest boost from exercise were those most sensitive to estrogen, the most commonly recognized hormone-sensitive form of breast cancer. (Previous research has shown exercise

lowers estrogen levels, which can fuel the growth of breast cancer cells.) However, it's reasonable to assume that exercise would likely be beneficial for many types of cancer patients.

Often, you will be able to take part in a regular exercise program -- one that involves a variety of exercises like strength training, core-building, stretching, aerobic and anaerobic -- with very little changes necessary.

However, you may find that you need to exercise at a lower intensity or for shorter durations at times. Always listen to your body and if you feel you need a break, take time to rest. Even exercising for a few minutes a day is better than not exercising at all, and you'll likely find that your stamina increases and you're able to complete more challenging workouts with each passing day. In the event you are suffering from a very weakened immune system, you may want to exercise in your home instead of visiting a public gym.

How to Optimize Your Exercise Program to Achieve the Most Benefits

As mentioned, ideally your fitness program should be comprehensive, providing activities that will improve your strength, flexibility, cardiovascular fitness and fat-burning capabilities with high-intensity "Peak Fitness" exercises.

During 'peak fitness exercises,' you raise your heart rate up to your anaerobic threshold for 20 to 30 seconds, followed by a 90-second recovery period. You repeat this cycle for a total of eight repetitions. Peak exercises are particularly beneficial because this type of interval training triggers the natural production of human growth hormone (HGH), also known as "the fitness hormone." HGH plays an integral role in maintaining youthfulness and strength. (For an in-depth explanation of my Peak Fitness regimen, please review this past article.)

Another boon of Peak Fitness exercises is the amount of time you save. Including a three-minute warm up and two-minute cool down, your total time investment is a mere 20 minutes as opposed to your regular hour-long treadmill session, and you are really only exerting yourself for four minutes.

Generally, a 20-minute session about three times a week is all you need to stay fit, along with your strength-training, flexibility, stretching and so on, on alternate days.

Other Important Breast Cancer Prevention Strategies

I recently interviewed Dr. Christine Horner, a board certified general- and plastic surgeon, who shared her extensive knowledge about breast cancer—its causes and its cures, and the pro's and con's of various screening methods. I suggest you listen to that interview now, in addition to learning about the many all-natural cancer-prevention strategies below.

In the largest review of research into lifestyle and breast cancer, the American Institute of Cancer Research estimated that about 40 percent of U.S. breast cancer cases could be prevented if people made wiser lifestyle choices. I believe these estimates are far too low, and it is more likely that 75 percent to 90 percent of breast cancers could be avoided by strictly applying the following recommendations.

- **Eat healthy.** This means avoid sugar, especially fructose, as all forms of sugar are detrimental to health in general and promote cancer. Also, focus on eating whole foods and fresh vegetables while avoiding cancer-causing foods.

- **Vitamin D.** There's overwhelming evidence pointing to the fact that vitamin D deficiency plays a crucial role in cancer development. You can decrease your risk of cancer by MORE THAN HALF simply by optimizing your vitamin D levels with adequate sun exposure. And if you are being treated for cancer it is likely that higher blood levels—probably around 80-90 ng/ml—would be beneficial. The health benefits of optimizing your levels, either by safe sun exposure (ideally), a safe tanning bed, or oral supplementation as a last resort, simply cannot be overstated.

In terms of protecting against cancer, vitamin D has been found to offer protection in a number of ways, including:

- Regulating genetic expression
- Increasing the self-destruction of mutated cells (which, if allowed to replicate, could lead to cancer)
- Reducing the spread and reproduction of cancer cells
- Causing cells to become more highly differentiated (cancer cells often lack differentiation)
- Reducing the growth of new blood vessels from pre-existing ones, which is a step in the transition of dormant tumors turning cancerous

To learn the details on how to use vitamin D therapeutically, please review my previous article,

Get proper sleep both in terms of getting *enough* sleep, and sleeping between certain hours. According to Ayurvedic medicine, the ideal hours for sleep are between 10 pm and 6 am. Modern research has confirmed the value of this recommendation as certain hormonal fluctuations occur throughout the day and night, and if you engage in the appropriate activities during those times, you're 'riding the wave' so to speak, and are able to get the optimal levels. Working against your biology by staying awake when you should ideally be sleeping or vice versa, interferes with these hormonal fluctuations.

According to Dr. Horner:

> *"If we, for instance, go to bed by 10, we have higher levels of our sleep hormone melatonin; there's a spike that occurs between midnight and 1am, which you don't want to miss because the consequences are absolutely spectacular.*
>
> *Melatonin is not only our sleep hormone, but it also is a very powerful antioxidant. It decreases the amount of estrogen our body produces. It also boosts your immune system… And it interacts with the other hormones. So, if you go to bed after 10… it significantly increases your risk of breast cancer."*

- **Effectively address your stress**. The research shows that if you experience a traumatic or highly stressful event, such as a death in the family, your risk of breast cancer is 12 times higher in the ensuing five years. So be sure you tend to your emotional health, not just your physical health.

Sources and References

- CBC News January 4, 2012

One of the Worst Forms of Exercise There Is

January 25 2012 |
By Dr. Mercola

A recent study looked at the heart function of 40 elite long-term endurance athletes after four endurance races of varying lengths.

By measuring cardiac enzymes and taking ultrasounds, the researchers were able to measure the acute effects of extreme exercise on the heart.

They found that:

- Right ventricular (RV) function diminished after races
- Blood levels of cardiac enzymes (markers for heart injury) increased
- The longer the race, the greater the decrease in RV function
- 12 percent of the athletes had scar tissue in their heart muscle detected on MRI scans one week after the race

The authors of the study concluded that, "*intense exercise causes dysfunction of the RV, but not the LV.*

Although short-term recovery appears complete, chronic changes may remain in many of the most practiced athletes."

Dr. John Mandrola, M.D. writes:

"I'm not an alarmist, but this study scares me ... RV damage is not good.

Diseases that affect the RV tend to cause electrical instability that may increase the risk of sudden death...

Exercise remains the most effective and safest means to prevent and treat heart disease. The overwhelming majority exercise far too little. In fact, I believe the US suffers from severe exercise-deficiency. That said, however, accumulating data suggest–at least–the possibility of an upper limit of what the human heart can sustain."

I agree. Although exercise reduces your cardiovascular risk by a factor of three, too much vigorous exercise, such as marathon running, actually increases your cardiac risk by seven, according to a study presented at the Canadian Cardiovascular Congress 2010 in Montreal. This is a powerful lesson to anyone who engages in large amounts of cardio exercise, because as it turns out, excessive cardio may actually be counterproductive.

The Marathon Myth

The answer is to exercise correctly and appropriately, and making certain you have adequate recovery, which can be as important as the exercise itself. Part and parcel of a healthy exercise regimen is variety, but beyond that, there's now overwhelming evidence indicating that conventional cardio or long-distance running is one of the *worst* forms of exercise there is. Not only have other studies confirmed the disturbing findings above, but they've also concluded it's one of the *least efficient* forms of exercise.

New research supports the concept that you are not maximizing your efforts when you're running marathons. On the contrary, the evidence is stacking up against conventional cardio. Here are several additional studies confirming the health-harming effects of long-distance running:

- A 2006 study screened 60 non-elite participants of the 2004 and 2005 Boston Marathons, using echocardiography and serum biomarkers. Just like the featured study above, it too found decreased right ventricular systolic function in the runners, caused by an increase in inflammation and a decrease in blood flow.
- Research by Dr. Arthur Siegel, director of Internal Medicine at Harvard's McLean Hospital, also found that long-distance running leads to high levels of inflammation that may trigger cardiac events.
- A 2006 study found that long-distance running leads to abnormalities in how blood is pumped into your heart.
- In a study published in the *Journal of Applied Physiology*., researchers recruited a group of extremely fit older men. All of them were members of the 100 Marathon club, meaning athletes who had completed a minimum of 100 marathons. Half of these lifelong athletes showed some heart muscle scarring as a result - specifically the men who had trained the longest and hardest.
- Recently published in the journal *Circulation,* this animal study was designed to mimic the strenuous daily exercise load of serious marathoners over the course of 10 years. All the rats had normal, healthy hearts at the outset of the study, but by the end most of them had developed "diffuse scarring and some structural changes, similar to the changes seen in the human endurance athletes."

Research Now Shows You Can Gain Greater Benefits in Less Time

Clearly, when it comes to exercise, more is *not* always better. As I've learned in more recent years, the opposite is oftentimes true. Granted, this warning does not apply to the vast majority of people reading this, as most people are not exercising nearly enough. But it's still important to understand that not only is it possible to over-exercise, but focusing on the wrong type of exercise to the exclusion of other important areas can actually do you more harm than good. Even if you don't end up dying from sudden cardiac death during a race, years of marathon running can take a toll on your ability to achieve optimal health.

Research emerging over the past several years has given us a deeper understanding of what your body requires in terms of exercise, and many of our past notions have simply been incorrect.

For example, there's compelling evidence showing that high-intensity interval training, which requires but a fraction of the time compared to conventional cardio, is FAR more efficient, and more effective. You can literally reap *greater* rewards in *less time*. The same can be said for the super-slow form of weight training, which mirrors many of the health benefits of high-intensity interval training. Research published in the journal Progress in Cardiovascular Diseases recently concluded that the *best* fitness regimen is one that mimics the movements of our hunter-gatherer ancestors, which included short bursts of high-intensity activities, but *not* long-distance running.

Interval Training - A Much Better Cardio Workout

According to fitness expert Phil Campbell and author of *Ready Set Go*, getting cardiovascular benefits requires working all your muscle fibers (you have three different types) and their associated energy systems. Curiously enough, this *cannot be achieved* with traditional cardio… Your heart has two different metabolic processes:

1. The aerobic, which require oxygen for fuel, and
2. The anaerobic, which do not require any oxygen

Traditional strength training and cardio exercises work primarily the aerobic process. High-intensity interval training, such as Peak Fitness, on the other hand, work your aerobic AND your anaerobic processes, which is what you need for optimal cardiovascular benefit. According to Campbell:

"Most exercise programs today are built based upon a very incomplete picture of the physiology of your body. For example, long slow cardio, "calories in, calories out," would be a perfect way to look at the body if it were all slow-twitch fiber … [but] there are three muscle fiber types: slow, fast and super-fast … both those types of fast-twitch fibers are essentially 50 percent of your muscle fibers that don't get recruited until you add a velocity of movement."

If you don't actively engage and strengthen all three muscle fiber types and energy systems, then you're not going to work both processes of your heart muscle. Many mistakenly believe that cardio works out your heart muscle, but what you're really working is your slow twitch muscle fibers. You're not effectively engaging the anaerobic process of your heart.

Fortunately, Peak Fitness type exercises do address these fibers and metabolic systems. As an added boon, when you perform Peak Fitness exercises properly, you will also increase your human growth hormone (HGH), which increases your muscle growth and effectively burns excessive fat. HGH also plays an important part in promoting your overall health and longevity.

In the case of Peak Fitness exercises, *less truly is more*, as you can get all the benefits you need in just a 20-minute session performed twice a week. In fact, you should *not* do Peak Fitness exercises more than three times a week. If you do, you may actually do more harm than good - similar to running marathons. Because while your body needs regular amounts of stress like exercise to stay healthy, it also needs ample recuperation, and if you give it more than you can handle your health will actually begin to deteriorate. So it is really crucial to listen to your body and integrate the feedback into your exercise intensity and frequency.

When you work out, it is wise to push as hard as you possibly can a few times a week, but you need to wisely gauge your body's tolerance to this stress, and give your body time to recuperate.

Super-Slow Resistance Training

While I've been recommending high-intensity anaerobic training (Sprint 8) using an elliptical machine or a recumbent bike, Dr. McGuff is a proponent of high-intensity interval training using *weights*. In a recent interview, he discussed both high-intensity anaerobic-type training, and high-intensity super-slow weight

training, which can achieve many of the same results using weights instead of a recumbent bike or elliptical. We also discussed the importance of recuperation.

I've been recommending doing Peak Fitness exercises three times a week, but after doing that myself for about a year, I gradually felt that the frequency was too much for me. I just felt too fatigued between sessions. Dr. McGuff's interview convinced me to make some changes to my routine, so I'm currently in an experimental phase. While I'm still doing Peak Fitness two to three times a week, I reduced the intensity by about five percent. I'm also incorporating McGuff's Super Slow strength training.

He believes you only need *12 minutes* of Super Slow type strength training *once a week* to achieve the same growth hormone production as you would with Peak Fitness! Intensity is key, and, according to Dr. McGuff, when the intensity is really high, the frequency may need to be reduced in order for it to be really productive.

How to Perform Super-Slow Weight Lifting

By aggressively working your muscle to fatigue, you're stimulating the muscular adaptation that will improve the metabolic capability of the muscle and cause it to grow. McGuff recommends using four or five basic compound movements for your exercise set. These exercises can be done using either free weights or machines. The benefit of using a quality machine is that it will allow you to focus your mind on the effort, as opposed on the movement.

Dr. McGuff recommends the following five movements:

1. Pull-down (or alternatively chin-up)
2. Chest press
3. Compound row (A pulling motion in the horizontal plane)
4. Overhead press
5. Leg press

Here's a summary of how to perform each exercise:

1. Begin by lifting the weight *as slowly and gradually as you can*. The first inch should take about two seconds. Since you're depriving yourself of all the momentum of snatching the weight upward, it will be very difficult to complete the full movement in less than 7-10 seconds. (When pushing, stop about 10 to 15 degrees before your limb is fully straightened; smoothly reverse direction)
2. *Slowly* lower the weight back down

Repeat until exhaustion. (Once you reach exhaustion, don't try to heave or jerk the weight to get one last repetition in. Instead, just keep trying to produce the movement, even if it's not 'going' anywhere, for another five seconds or so. If you're using the appropriate amount of weight or resistance, you'll be able to perform four to eight repetitions)

Immediately switch to the next exercise for the next target muscle group, and repeat the first three steps. When done in this fashion, your workout will take no more than 12 or 15 minutes. For more information about Super-Slow resistance training, please see my interview with Dr. McGuff.

Final Thoughts

The take-home message here is that one of the best forms of exercise to *protect* your heart is short bursts of exertion, followed by periods of rest. You can do this Sprint 8-style using an elliptical machine or recumbent bike, or you can do it using McGuff's Super-Slow resistance training strategy. Ideally, you'll want to do a little bit of both.

By exercising in short bursts, followed by periods of recovery, you recreate exactly what your body needs for optimum health. Heart attacks don't happen because your heart lacks endurance. They happen during times of stress, when your heart needs more energy and pumping capacity, but doesn't have it. So rather than stressing your heart with excessively long periods of cardio, give interval training a try.

Most importantly, during any type of exercise as long as you listen to your body you shouldn't run into the problem of exerting yourself excessively. And, with interval training, even if you are out of shape you simply will be unable to train very hard, as lactic acid will quickly build up in your muscles and prevent you from stressing your heart too much.

Sources and References

- Better Health December 18, 2011
- European Heart Journal December 6, 2011 [Epub ahead of print]

5 Diet Mistakes That Prevent Workout Results

August 05 2011 |

Sports nutritionist Cynthia Sass, writing for *Shape*, lists five diet mistakes that could interfere with getting the most out of your training time:

1. **Drinking a Protein Shake Before a Workout:** Protein is digested more slowly than carbs, so too much pre-workout can give you stomach cramps. Have them afterward instead.
2. **Exercising on an Empty Stomach:** This forces your body to break down its own muscle mass and convert it into blood sugar.
3. **Overusing Energy Bars:** Too many of these and you might "eat back" the calories you burned exercising.
4. **Not Eating Enough "Good" Fat:** The right kinds of fats are needed for your cells to heal and repair post workout.
5. **Buying Into the Afterburn Myth:** You will indeed burn more calories in the hours after a workout -- but for most it amounts to just 50 additional calories burned, not enough for a calorie splurge.

Interestingly, research has also found that exercise-related alterations to gut hormone signals could contribute to the overall effects of exercise and help manage body weight.

Exercise is already known to increase sensitivity to leptin, a hormone released from fat cells that inhibits food intake. A new study also looked at gut hormones that are released before and after a meal to initiate and terminate food intake.

According to Science Daily:

"The authors measured gut hormone release after a palatable tasty meal before and after rats exercised in running wheels. In rats with a lot of running wheel experience, consuming a tasty meal led to increased blood levels of an inhibitory feeding hormone, amylin. After the meal, the same rats showed a more rapid rebound of a stimulatory feeding hormone, ghrelin."

Dr. Mercola's Comments:

You're probably well aware that the food you eat has an immense impact on your health, but did you know that it also impacts how much benefit you get out of your workouts? What you eat can either *add to* or *take away from* your exercise benefits, and if you're devoting the time to workout, you want to know how to harness your meals to support your efforts, not detract from them.

I do agree with some of the tips sports nutritionist Cynthia Sass included in the *Shape* article above, namely that you need to include healthy fats in your diet and avoid eating too many energy bars. But there is a major food disaster that was not included in this list, which I'll detail below, and I also disagree with her assertion that you should not exercise on an empty stomach, as this, in fact, may be a key to keep your body biologically young.

Why Exercising on an Empty Stomach May be Key

There is plentiful research showing that exercising first thing in the morning may give you added benefits -- even counteracting poor diet and helping with weight loss. One reason for this is likely because when you exercise first thing, it means you're exercising on an empty stomach.

One of the explanations for how exercising on an empty stomach can prevent weight gain and insulin resistance despite overindulgence is that your body's fat burning processes are controlled by your sympathetic nervous system (SNS), and your SNS is activated by exercise and lack of food.

The combination of fasting and exercising maximizes the impact of cellular factors and catalysts (cyclic AMP and AMP Kinases), which force the breakdown of fat and glycogen for energy. This is why training on an empty stomach will effectively force your body to burn fat.

Alternatively, you can try intermittent fasting, which can help you build younger brain and muscle tissue. This calls for you to exercise in late morning or early afternoon and remain fasting (or eating only light raw foods, vegetable juice and/or whey protein or eggs) all day until 30 minutes *after* your workout. You can include 20 grams of a *fast-assimilating* protein like a high-quality whey protein concentrate 30 minutes before if you want.

Simply put, exercise and fasting yield acute oxidative stress, which keeps your muscles' mitochondria, neuro-motors and fibers intact. You may have heard of oxidative stress before in a negative light, and when it is *chronic* it can lead to disease.

But *acute* oxidative stress, such as occurs due to short intense exercise or periodic fasting, actually benefits your muscle. In fact, as fitness expert Ori Hofmekler shares:

"… it's essential for keeping your muscle machinery tuned. Technically, acute oxidative stress makes your muscle increasingly resilient to oxidative stress; it stimulates glutathione and SOD production in your mitochondria along with increased muscular capacity to utilize energy, generate force and resist fatigue.

Hence, exercise and fasting help counteract all the main determinants of muscle aging. But there is something else about exercise and fasting. When combined, they trigger a mechanism that recycles and rejuvenates your brain and muscle tissues.

Growing evidence indicates that fasting and exercise trigger genes and growth factors, which recycle and rejuvenate your brain and muscle tissues. These growth factors include brain derived neurotropic factor (BDNF) and muscle regulatory factors (MRFs); they signal brain stem cells and muscle satellite cells to convert into new neurons and new muscle cells respectively. Incredibly, BDNF also expresses itself in the neuro-muscular system where it protects neuro-motors from degradation. This means that exercise while fasting signals your body to keep your brain, neuro-motors and muscle fibers biologically young."

If You Can't Exercise on an Empty Stomach …

A number of individual factors can play a role in whether or not fasting before exercise is right for you, such as your age, when you last ate, whether or not you're pregnant, taking medications, your medical history, level of fitness, and the type of workout you engage in. For example, some people feel weak or nauseous while exercising on an empty stomach, and in this case a small meal before exercising may be appropriate.

The type of food you choose for that meal is incredibly important, and a muffin or bagel simply won't do. Your body needs a high-quality, fast-assimilating protein.

A recent study published in the journal Medicine and Science in Sports & Exercise demonstrated that consuming whey protein (20g protein / serving) 30 minutes before resistance training boosts your body's metabolism for as much as 24 hours after your workout.

It appears as though the amino acids found in high-quality whey protein activate certain cellular mechanisms (mTORC-1), which in turn promote muscle protein synthesis, boost thyroid, and also protect against declining testosterone levels after exercise.

In practical terms, consuming 20 grams of whey protein before exercise and another serving afterward will most likely yield the double benefit of increasing both fat burning and muscle build-up at the same time. Again, not everyone will need to eat something prior to exercise, but if you do, a high-quality whey protein is one of your best bets. It'll curb your hunger while still optimizing fat burning.

What You Eat After Your Workout is Also Incredibly Important

If you decide to give intermittent fasting a try (and even if you don't), what you eat after your workout is crucial to stop the catabolic process in your muscle and shift the recycling process toward repair and growth. If you fail to feed your muscle at the right time after exercise, the catabolic process will go too far and can potentially damage your muscle.

So you MUST EAT within 30 minutes after your workout, and your meal should include fast-assimilating proteins, such as high-quality whey protein. Personally, I tailor my post-workout meals depending on the type of exercise I've done that day. My favorite post Sprint 8 meal is a Pure Power protein shake without anything added as that would tend to impair the absorption of the fast-assimilating whey proteins.

What Food to Avoid Before, During and After Exercise

To maximize the benefits of exercise, including the weight loss benefits, you'll want to *avoid* energy drinks, sports drinks, most energy bars and even "healthy" drinks like vitamin water. These and virtually all other processed foods and beverages contain sugar, including fructose, which will sabotage your exercise benefits.

Fructose tricks your body into gaining weight by fooling your metabolism, as it turns off your body's appetite-control system. Fructose does not appropriately stimulate insulin, which in turn does not suppress ghrelin (the "hunger hormone") and doesn't stimulate leptin (the "satiety hormone"), which together result in your eating more and developing insulin resistance.

Fructose also rapidly leads to weight gain and abdominal obesity ("beer belly"), decreased HDL, increased LDL, elevated triglycerides, elevated blood sugar, and high blood pressure -- i.e., classic metabolic syndrome.

Further, you may be aware that one of my top recommended forms of exercise are high-intensity exercises like the Sprint 8 program. Sprint 8 exercises boost your body's natural production of human growth hormone (HGH), which is a vital hormone that is key for physical strength, health and longevity.

However, as HGH Magazine explains, consuming fructose, including that from fruit juices, within two hours of your workout will decimate your natural HGH production:

"A high sugar meal after working out, or even a recovery drink (containing high sugar) after working out, will stop the benefits of exercise induced HGH. You can work out for hours, then eat a high sugar candy bar or have a high sugar energy drink, and this will shut down the synergistic benefits of HGH."

The reason why restricting sugar and fructose after exercise works is that they will prevent the production of the hormone somatostatin, one of the primary purposes of which is to inhibit the production of human growth hormone.

How Exercise Influences Your Meal Hormones

While we're on the topic of food and exercise, an interesting new study, presented at the 2011 meeting of the Society for the Study of Ingestive Behavior (SSIB), revealed one way that exercise may help control your body weight by altering the hormones released by your gut after a meal.

In rats that exercised, increased levels of an inhibitory feeding hormone, amylin, were released when a meal was eaten, and a more rapid rebound of ghrelin occurred after the meal. Further, exercised rats treated with a gut hormone called CCK, which limits meal size, decreased their food intake more so than sedentary rats.

As one of the study's authors told Science Daily:

"Our new results indicate that the beneficial effects of exercise to control body weight might occur by altering the way in which meals release gut hormones that regulate food intake, and also by changing the sensitivity of individuals to these gut hormone signals."

Exercise is already known to increase sensitivity to leptin, the "satiety hormone" involved in appetite regulation, providing even more reason to make physical activity a regular part of your life.

Two More Important Tips to Optimize Your Workout Results

While exercise is important and crucial for weight loss, about 80 percent of your ability to achieve an ideal body weight will be related to your food choices. So if you've been exercising for some time and are still not losing weight or achieving results, make sure you are:

1. Engaging in high-intensity exercises like my Sprint 8 exercises, which engage a certain group of muscle fibers that you cannot engage through aerobic cardio. Engaging these muscle fibers causes a cascade of positive health benefits, including improved fat burning.

2. Following the dietary advice available in my comprehensive nutrition plan. I am confident that if you adhere to the recommendations in this plan, you will be able to optimize your weight and your exercise results.

Sources and References

- Shape
- Science Daily July 12, 2011

Fail to do This AFTER a Workout and Your Whole Effort is Wasted

May 13 2011 |

By Jeff Spencer, MA, DC

I was talking with an acquaintance the other day and he remarked to me that ever since he started his new high intensity fitness program a couple of months ago he's been on this incredibly unpredictable and intense good and bad workout roller coaster that's driving him crazy. Some days he's sore, others not, then he'll have a King Kong workout day and do no wrong feeling like his "old self," and, then, the next day for no apparent reason be weak and unresponsive as if he's never worked out.

Sound familiar?

If there's ever a conversation I've had a zillion times in the fitness world it's about the good day/bad day fitness roller coaster. The origin of the fitness roller coaster is almost universally rooted in too much workout intensity too often.

The Epic Battle Between Mind and Body

Too much intensity too frequently is most often the product of the mind's false belief that more is better, and if the workout isn't felt it's not doing any good to improve fitness.

The mind is not always our friend in fitness matters and can do a pretty darn good job of making us think that more effort is better and working out harder more often will produce the best fitness gains in the shortest time.

This sounds completely reasonable and rational, the only problem being it has no basis in reality as your body isn't physically set up to perform hard day in and day out without sufficient recovery, and when pushed to do so it starts roller coastering to keep up with the demand as it begins to break down.

Finding the balance between too little, too much and just the right amount of training intensity is a challenge and it is the purpose of this article.

Even at the highest level of sport in the professional ranks there's an epidemic of misinformation and myth about how hard to workout to get the best results in the least time.

The Reality

It's well known in the world of peak performance that those that adopt the "more is better motto" are the ones that fail to progress, are frustrated at their inability to consistently perform at their best and most often have an endless string of nagging low-grade micro-injuries that follow them around day after day, endlessly that zapping their mental, emotional and physical strength.

What's so difficult about this for me is that a vast majority of these challenges are completely preventable by shifting the emphasis from "more is better" to balancing effort and recovery.

How Your Body Gains Fitness

As a graduate student at USC I had the honor of having Dr. Gene Logan as the chair of my masters degree thesis. Dr. Logan was a fabulous man, mentor and also co-developer of the SAID Principle.

The SAID principle stands for Specific Adaptation to Imposed Demands (SAID).

In fitness terms this means that to increase fitness in a specific area of the body, that area must be strained by specific exercises that stimulate the area to build itself back up to a higher level of fitness after the workout is completed. For example, if I want a bigger bicep I have to strain my bicep by doing bicep curls that stimulate the bicep to grow bigger. No strain, no change.

The important take home with the SAID Principle is that the body will adapt up specifically to the demand (training stress) placed on it. If you want a bigger bicep then do bicep curls, not triceps press downs. Specificity is the name of the game. How you exercise is what you'll develop.

In summary, it's during exercise that the muscle is physically stressed and "torn down", which prompts the body's natural recovery and repair mechanism to rebuild the exercised muscle back to a higher level of function and appearance.

The Key to Better Fitness is Full Recovery

No amount of training will reap beneficial long-term fitness gains unless the training is properly balanced with adequate recovery time allowing the body to rebuild itself back to its full functional level.

Achieving Ideal Weekly Workout "Total Training Load"

To achieve the most beneficial effects from your workouts in the shortest time it's essential to understand the concept of total load. Total Training Load refers to the total amount of training "strain" on the body over time. For example, one single super-hard workout can strain the body as much as several moderate intensity workouts done back to back can.

The Total Training Load can be increased by increasing the number of exercise repetitions, resistance, length of workout sets and by increasing the speed of repetitions and, also, by shortening the rest interval between exercise sets. If the Total Training Load is in excess too long, the body breaks down, and illness, over-training, burnout, and injury occur.

Your Body Can't Discriminate Between Stresses

The key to remember in the Total Training Load concept is that the body doesn't look at separate strains as distinct entities but rather as a single total load made up of all the stresses and strains it's exposed to day in and day out. For example, the strain of a hard workout, spending a hour in traffic, staying up late, or traveling between time zones are different stresses that the body looks at as all part of one giant stress on itself.

The mind may say these are different types of activities and not stresses but in the end the body looks at them all as stresses contributing to the total stress burden placed on it.

The challenge with total load is that over time it sets the stage for illness, injury and burnout.

A major item that helps in controlling the Total Training Load is to know how hard a workout is. Knowing that provides insight as to whether it's adding to, or taking away from the total load.

How Hard is Hard? Exercise Effort Grading

As a general rule "hard", as in how hard is my workout effort, is defined by perceived effort while exercising. The following three perceived effort levels are surprisingly accurate and are great tools to gauge your workout effort to get the most benefit from your workouts:

1. **Easy** – If you can maintain an easy conversation with someone when exercising then the intensity of the workout is considered easy.

   As a general rule you want to exercise easy twice for every hard workout.

   The 2/1 ratio is the magic number and in some cases a 3/1 ratio is a good idea to give your body an extra day to get the extra recovery when needed.

2. **Moderate** – When working out if you can speak in words, but not sentences, and don't really want to talk then that's the classic sign of a moderate workout.

   In a weekly training program one or two, moderate workouts separated by two days is a great training strategy.

3. **Hard** – The key sign of a hard workout is that it's impossible to talk during the workout.

   Hard workouts should only be done once or twice a week with three days in between.

In summary, the following are training intensity guidelines to help you control your weekly Total Training Load's effort-to-recovery ratio to reduce the risk of burnout, illness, and injury follow these ratio guideline:

1. Minimum 2/1 easy to hard workout ratio
2. 1-2 moderately hard workouts with two days in between
3. 1-2 hard workouts with 3 day's in between.

Make Your Hards Hard, and Easy's Easy

Before moving on I want to make a final point about the three different exercise efforts presented in the preceding section. To get the best value from your workouts, always follow the effort intensity guidelines by the letter and never, ever fool yourself into believing that you'll get more fit by making your easy workouts slightly harder and your hard workouts slightly easier as it doesn't work that way.

The reason why it doesn't work is that by making the hard training sessions easier and easier workouts harder makes all the workout's intensities more similar, and that can quickly lead to over training.

Classic Signs of a Workout with Ideal Intensity and Length

At the end of the day when you're workout intensities and training loads are within ideal range you'll find that your fitness will increase and maintain itself with less time and effort.

The following are the signs that tell you your workout program has the correct balance of hard and easy workouts and your Total Training Load is within normal range.

1. **Should have quick and full recovery after each workout -** After a workout you should rebound quickly from the effort and feel almost back to normal within 30-minutes. A prolonged rebound is a sign the workout was too difficult and you need to go easy for a couple of days.

2. **Ideal to feel better at end of workout than the beginning –** Successful workouts will leave you feeling better at the end of your workout than the beginning. This is a sign of well-trained body.

3. **Slight soreness on occasion is OK, but regular soreness isn't** - Slight muscle soreness is normal after starting to exercise, when new exercises are implemented into your workouts or when an increase in exercise intensity is done.

   If you feel sore then put two or more easy days into your program to let your body catch up with itself.

4. **Should be able to raise heart rate** – A cardinal sign of having the right training balance of effort to recovery is when your heart rate moves up and down nicely during a workout. If your heart rate fails to elevate during a workout you're over-trained from training too hard too often, and you need time off.

5. **Heart rate should drop immediately when the workout is completed** – Fitness buffs having ideal intensity variety in their workouts have heart rates that drop down to slightly above normal within 5-minutes of finishing a workout then drop back to normal levels shortly thereafter.

6. **Perspiration should stop shortly after the training is completed** – As a rule sweating associated with workouts should stop within a few minutes after exercise is stopped when workout intensity and overall fitness is within ideal range.

   If sweating continues 20-30 minutes after exercise it is the sign the workout was too hard, and requires a few easy days to recover from.

It's a Wrap

As I look back over the course of my career in fitness, health, and athletics there's absolutely no doubt in my mind that more people than not are over-trained from too much workout intensity, too often having fallen for the myth that the best way to get most fit in the shortest time is to train hard often.

I also have no doubt that high intensity training is the best way to get and stay fit if it's balanced, following the 2/1 easy to hard days ratio.

The challenge is to determine how hard to train how often to get to the ideal fitness level, and stay there.

Following the three "Can I or can't I hold a conversation?" rules to determine workout effort will help promote more effective and safe workout programs to take health and fitness results to higher levels.

When in doubt, do what the top pros do, workout hard once for every two or three easy workouts, you'll be glad you did.

About the Author

*Dr. Jeff Spencer**,** Olympian, ICA "Sports Chiropractor of the Year", and author is one of America's top builder of champions.*

"Dr. Magic", as Dr. Spencer's often referred to, has been directly involved in 40+ World, Olympic, National and Tour de France championships. He has worked with NASCAR champion Bobby LaBonte, World Series MVP Troy Glaus, rock legend U2, and most known for helping Lance Armstrong win all 7 of his Tour de France victories on site. Spencer has also worked his "magic" with PGA, WTA, and Supercross champions, ultra-successful entrepreneurs and business standouts, NFL, MLB athletes, as well as Motocross and Formula 1 drivers.

Spencer received his master's in physical education and his undergraduate degree from University of Southern California and his doctor of chiropractic degree summa cum laude from Cleveland Chiropractic College in Los Angeles. He has taught post-graduate sports rehabilitation courses and frequently lectures on health, fitness, and wellness.

Dr. Spencer is the author of the acclaimed book, Turn It Up! How To Perform At Your Highest Level For A Lifetime and audio program "The Top 10 Tactics From The Champions Playbook".

"Jeff is part doctor, part guru, part medicine man… we believed Jeff could fix all of our problems… while he fixed us physically, he also fixed us mentally… If you judged the most important man on the team by the foot traffic in and out of his door, then it was Jeff. Without him, we know we'd never make it to Paris."

-Lance Armstrong, Every Second Counts