



SMARTER BODIES

The Official Newsletter of Smart Bodies Personal Fitness Center

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Editor Jim Rabic

You Can Help Smart Bodies Become the 2015



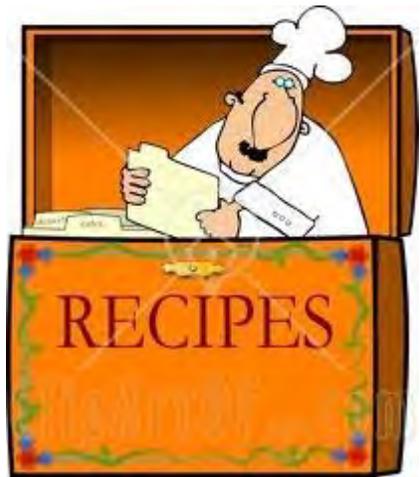
To vote for **Smart Bodies**, go to:
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Vote for **Smart Bodies** as the
Best of the Best "GYM / WORKOUT CENTER"

The Readers' Picks will be tabulated and the top vote-getters will appear in South Jersey Magazine's Best of the Best issue in July. Entries must be received by May 4.

VOTE FOR SMART BODIES!

SMART RECIPES



Make Your Own Carrot Chips



1. Peel carrots into thick slices
2. Toss slices in olive oil & salt
3. Bake at 350° for 12 minutes
4. Cool & enjoy

The complex block contains four small images illustrating the steps: 1. A person peeling a carrot with a peeler. 2. A pile of sliced carrot sticks. 3. A tray of carrot sticks in an oven. 4. A small white paper cup filled with finished carrot chips.

Warm up before lifting weights!



Much evidence points to the value of a proper warm-up. Not only will it increase your body's readiness to start an exercise session, but it will also help your mind prepare for the hard work ahead. The first part consists of a general warm-up of the whole body by doing 10 to 15 minutes of cardio exercise. A college athlete can warm up in five minutes, whereas a person who is 50-something might require 15 or 20 minutes to feel ready for an intense workout. Only you can subjectively evaluate when you are sufficiently warmed up.

The actual time will vary depending on your age, level of conditioning and even the temperature of the gym.

Start with a general warm-up of a low-intensity activity. Walk on the treadmill or hop on a bike to get your blood moving and warm up your muscles and joints. Also, remember that the first set of the initial exercise for each body part should be considered a warm-up set. Go lighter and higher in reps than you do in subsequent sets.

A cardio warm-up should consist of a gradual build-up in intensity and heart rate. Start slowly and take the first 5-7 minutes of your session to efficiently warm up. Add this to the total amount of time you spend doing cardio.

The objective is to get blood flowing vigorously throughout the body and give yourself a few minutes to mentally focus on the lifts you will be doing and the goals you want to achieve.

Don't underestimate the value of "psyching" yourself up before a weightlifting workout. Productive strength training comes from progressively overloading your muscles. That means today's workout needs to be better than your last workout.

And like anything else in life, making improvement requires focus and a sense of purpose. Use your time on the treadmill to do both



Healthy Heart: Preventing (Another) Heart Attack

To lessen the chances of a recurrence, heart attack survivors need to take charge of their lifestyle. Diet and exercise are key components of a successful recovery, and the following tips will benefit anyone at risk for a second (or first) heart attack.

- Manage the big risk factors. Quit smoking. If you have diabetes, high cholesterol or high blood pressure, talk with your doctor about getting them under control, and follow his or her advice about appropriate medications.
- Eat a healthy diet. For the heart, this includes a diet low in trans- and saturated fats, and high in vegetables, fruits, soy, legumes, whole grains, omega-3 fatty acids and monounsaturated fats.
- Get active. Moderate physical activity helps keep the heart muscle strong and the arteries flexible, lowers cholesterol and blood pressure, increases overall energy and helps elevate and stabilize mood.
- Take supplements. CoenzymeQ10 (CoQ10) is a natural substance that acts as a powerful antioxidant and helps enhance the energy production of heart-muscle cells. Try 100 to 200 mg per day - talk with your doctor to rule out possible interactions with other drugs, especially blood-thinners

Smart Golf Tips

The Vital Signs of an Effective Short Game

Golf is a difficult sport. It's not classified information. The game takes calculated technique that is developed and maintained through perfected repetition. This is a main reason that golf has blossomed into a global sport. It's challenging for people and it's hard to master, even as a professional.

Each stroke in golf is critical. The finesse shots close to the green and steady putts on it are far from an exception. Below are the key components of an effective short game, and how you can improve on them individually going forward. If your game struggles in this area it might be wise to consider these ideas before you tee it up again.

Being comfortable with varying lies

Oftentimes people struggle with their short game because of the constant unnatural lies they have to handle with irons. Everyone who's played golf understands that the ball doesn't always land on a surface like the artificial grass mat at the driving range. It's imperative to consider this if you want to have an effective short game.

Short Game: Take it to the course

It's crucial to respect that a course is never perfect. Each lie will be unique to the next. A successful short game is built from practice in all different scenarios. Not to discount the driving range and how important it can be to this facet of the sport, but it's important to increase the scope of training to account for the lack of uniformity on different courses and different holes. Try sloping park areas or chipping ranges for preparation.

Having precise distance expectations with each iron

Selecting the wrong iron when gearing up for a pitch shot can immediately compromise the other shots you've taken on the hole. Similarly, lacking a solid understanding of which iron will provide a certain distance is equally damaging on the scorecard. An integral part of anyone's short game is familiarity with club capabilities.

Select the Correct Club: Take it to the course

The precision required in golf doesn't leave much margin for error, particularly when the short game is considered. Each yard counts when pitching a shot towards the green, and a few yards long or short diminish the chance of playing a complete hole. Being familiar with how your clubs perform for you individually is necessary for effective iron play.

Being able to sidestep impulsive play

Professional golfers are some of the most poised athletes in the world. They understand that when it comes to excelling on the golf course,

specifically the short game, impulsive decisions lead to costly results. A hurried shot on the links is bound to be a bad shot. Regardless of the level you play it, it's important to avoid trying to make the game changing shot when your short game is concerned. Strokes are too precious to take risks, and your final score will reflect your patience if you can reel in the urge to take a risk.

Don't Hurry Your Shots: Take it to the course

It's hard for players to harness confidence in golf. The shot through the two trees usually looks doable until after it's hit. It's usually more efficient to go for the short shot into the fairway that sets up a nice pitching wedge to the green. Same goes for putting on dangerous greens and pitching out of a sand trap. Take a deep breath and avoid impulse to go after the round-saving shot. It'll boost your overall performance.

Having the ability to overemphasize putting importance

Putting is crazy hard. It's also incredibly significant to your score. It can be really frustrating to hit two shots 400 yards to a green before then three putting from six feet for bogey. There's nothing like it. Having a legitimate short game is heavily influenced by a golfer's ability to fine tune putting performance. Being successful on the course usually means avoiding three puts at all costs. This should be a stringent goal of yours, even if it can't be avoided once in a while.

Golf Putting: Take it to the course

Putting is difficult for a number of reasons. The fact that it takes extreme focus and a soft touch are a couple explanations. Try and make it a point to warm up on the putting green before every single round. Many golfers try to do so, but because of time constraints and other matters they don't realistically do it each time. It can and will take your short game to a new level, even if it's only a few strokes here and there.

The sport of golf is a swirling complex of technique, consistency and fundamentals. An effective short game is a serious bonus for any golfer, namely those who struggle off the tee box. Take these ideas and mold them to your individual style and routine. You'll see improvement immediately

Treadmill Tricks to Get the Most for Your Effort



Its by far the most popular piece of equipment in the gym and at home. And studies have shown that running on the treadmill is one of the highest calorie-burning workouts out there.

But are you really getting the most for your effort?

Consider this: When you go for a walk, you walk faster on some days than you do on others. Does it make a difference in the calories you burn? It sure does! When you walk on a treadmill, the speed is constant, so you feel like you get a better, more consistent workout than you would walking around your neighborhood. Thats a perk of the treadmill.

On the other hand, when you walk outside, you might walk uphill and downhill, which acts as interval training.

In a nutshell, the speed of your walk doesn't matter as much when you walk outdoors or on a track, since you're propelling your weight with every step. On the treadmill, however, the belt is moving and helps to bring your foot back. You may have noticed that you feel a bit more tired after a walk off the treadmill.

We're not putting down the hottest piece of fitness equipment out there, but we would like to make it a more effective workout for you.

To approximate walking outside, a tread-

mill requires two-degrees of incline to compensate for the movement of the belt -- so crank it up. Better yet, choose a program that adjusts the incline and speed. You'll begin to notice a difference in your program very quickly!

If you've ever reached a plateau in your fitness program, where no matter what you do, you seem stuck at a particular weight or cardio fitness level, this will come in handy here, too. Variety is the spice of your treadmill workout!

In addition, if you're using a treadmill during every one of your workouts, it's a good idea to take a step off the belt from time to time. Get on a bike, an elliptical trainer, a rowing machine or a stepper.

Muscles adapt to the same routine fairly quickly, so find two-pieces of equipment that you like and mix up your program. How can this help? When you're on a treadmill, your body interprets the walking motion as a linear movement. When you get on a bike, upright or recumbent, however, the movement becomes rotary.

Muscles don't have eyes -- they can't see. Muscles can only interpret movement.

When you go back to the treadmill after switching things up, the body says, "We're not doing a rotary thing, this is linear." The changes are subtle but the results can be great.

Add variety and mix up your workout. Don't become attached to a single piece of equipment. Keep your body guessing as to what's coming next!

Smart



Running

A Walk a Day



The popularity of walking as a fitness activity is growing by leaps and bounds. Low risk and easy to start, walking has proved its health benefits in numerous studies.

An eight-year study of 13,000 people found that those who walked 30 minutes a day had a significantly lower risk of premature death than those who rarely exercised.

A regular walking program can help:

- * Reduce blood cholesterol
- * Lower blood pressure
- * Increase cardiovascular endurance
- * Boost bone strength
- * Burn calories and keep weight down

Get ready

A walking program is simple to start. All you need are comfortable clothes and shoes. Layer loose clothing, keeping in mind that exercise elevates the body's temperature. Shoes specifically designed for walking are best.

Every workout should begin with a brief warm-up and a few simple stretches. Walk around the house or in place for a few minutes to get the blood flowing to the muscles before you attempt to stretch them. Although walking primarily works the major muscles of the legs, don't forget to stretch your back, shoulders and arms. This will help to loosen up any tension you may be carrying and make your walk more enjoyable as well as more effective.

Get moving

Beginning walkers can make their workouts less strenuous by limiting how fast and far they walk. Keep in mind the following:

Walk short distances

Begin with a five-minute stroll and gradually increase your distance.

Forget about speed

Walk at a comfortable pace. Focus on good posture, keeping your head lifted and shoulders relaxed.

Swing your arms naturally

Breathe deeply. If you can't catch your breath, slow down or avoid hills.

Be sure you can talk while walking

If you can't converse, you are walking too fast.

Get fit!

Walking is one fitness activity that allows you numerous options. Once you have reached a point where you can walk a few miles with relative ease, you can start to vary the intensity.

Walking hills, in addition to increasing your cardiovascular endurance, is a great way to tone the legs. Concentrate on lengthening your stride or increasing your speed. And don't forget to reward yourself after each workout with a few minutes of relaxing stretches to help prevent sore muscles.

Listening to lively music while you walk is also a great way to energize your workout. But if you wear headphones, keep the volume down and watch out for traffic that you may not hear.

Keep track of your progress. Many experts recommend that you walk a minimum of 20 minutes a day. But there are no hard and fast rules. Fit walking into your schedule whenever you can. That may mean two 10-minute walks each day, or even hour-long walks two to three times a week. The best schedule is one that keeps you walking and keeps you fit.



Smart Vegetarian



How to Pick, Prep, and Cook with Parsnips

Except for their ivory color and generally wider girth, parsnips look a lot like carrots. Nutty and slightly sweet tasting, these root veggies are at their best when the weather turns chilly. The cool temperatures concentrate the sugars in their cells, making them sweeter.

Pick

Check that parsnips are free of cracks, and avoid any that bend or show soft spots. A fresh parsnip will have an herbal fragrance,. Despite what you might hear, smaller parsnips are not necessarily sweeter and better tasting than larger ones. Parsnips can last up to three weeks when kept in cool conditions with high humidity, such as a plastic bag placed in the refrigerator crisper.

Prep

Raw parsnips tend to have a tough, woody texture; cooking makes these veggies more palatable. Roasting really enhances their sweetness. Peeled and sliced parsnips quickly turn dark when exposed to air, so cook them right away, or store them in water with a touch of lemon juice. To avoid mushy parsnips, add them to soups and stews toward the end of cooking.

Try This!

- Shred parsnips, and add to baking batters as you would carrots or zucchini.
- Boil or steam parsnips, and mash with an equal amount of potatoes, plus milk, butter, grainy mustard, smoked paprika, and fresh sage for a savory take on mashed potatoes.
- Combine whole, peeled parsnips with pearled onions and rosemary on a roasting pan; toss with olive oil and sea salt, and roast at 400°F until tender.
- Toss grated parsnips and carrots with flour, eggs, chopped chives, and salt and pepper to taste; drop batter by the scoopful into an oiled skillet to make parsnip patties.
- Simmer sliced leeks, parsnips, and potatoes in vegetable stock; purée, and garnish soup with crumbled feta and toasted pecans.
- Pair them with carrots: we love steamed, glazed parsnip and carrot sticks and roasted carrots and parsnips.

In Defense of Salt

SALT

COMMON TABLE

HIMALAYAN PINK



- "Purified," a process that involves a re-crystallization at over 1,200°F
- 97.5% sodium chloride, 2.5% additives
- Depleted of its natural minerals
- Includes anti-caking compounds
- Likely contains iodine and/or is fluoridated (particularly in non-US countries)

- Contains 84 essential minerals required by the human body
- 85% sodium chloride, 15% trace minerals
- A good source of magnesium, in which 80% of all individuals are deficient
- Promotes a healthy pH balance of the cells
- Helps regulate blood sugar levels
- Helps regulate the body's natural sleep cycle

Smart Tennis



Tennis rackets: A buyer's guide

Categories

With three distinct racket categories, first decide which one suits your ability...

Improver rackets: Designed for improvers and recreational players who are quite new to the game or have returned to tennis after a lengthy break - think Justine Henin or Kim Clijsters for enthusiasm on return to the courts, except err, lacking anything remotely resembling their ability.

Intermediate rackets: Aimed at the club-standard player who is no longer a beginner, but by no means Roger Federer in disguise either. The larger head sizes provide a greater sweet spot and the moderate weight makes the racket more comfortable to use.

Advanced rackets: Tournament and performance frames play best when used by highly skilled and physically fit players who have the ability to generate a fast racket swing speed through the ball.

What are you looking for in a racket?

There are five key factors to consider before choosing your next racket:

- 1) Head size:** Typically between 95-110 square inches. Larger heads, generate more power and have a larger sweet spot. Smaller head sizes offer more control.
- 2) Length:** Adult rackets can be anything from 27-29 inches long, though most are nearer the lower end of the scale. Longer rackets are generally lighter than standard frames, and offer more reach and more power on serve.
- 3) Weight:** Heavier rackets (320g and beyond) are more powerful than lighter rackets (310g and below), but are less maneuverable and can wear a player out. Strings add around 30g to the weight of a racket.
- 4) Balance:** Head-heavy rackets are often lighter, offering added power on groundstrokes, while head-light rackets are generally heavier but more maneuverable.
- 5) Stiffness:** The racket flex on impact affects power and comfort. The stiffer a frame, the less energy is lost when hitting the ball, but sends more impact shock to your hand and arm.

OBEESITY WORLDWIDE

1.5 BILLION
ADULTS ARE OVERWEIGHT

65%

OF THE WORLD'S POPULATION LIVE IN COUNTRIES WHERE THEY ARE MORE LIKELY TO DIE FROM OBEESITY THAN MALNUTRITION

25%

HIGHER HEALTH CARE COSTS COMPARED TO A PERSON OF AVERAGE WEIGHT

BY THE NUMBERS:

200 & 300
MILLION MEN WOMEN

ARE OBESE.

THAT'S MORE THAN

10%

OF THE ADULT POPULATION

YOU NEED TO BURN

3500
CALORIES

TO DROP A SINGLE POUND OF BODY FAT

That's about 9 hours on the elliptical

43
MILLION CHILDREN UNDER 5 ARE OVERWEIGHT
That's almost 7%!

WORLD'S FATTEST COUNTRIES

 NAURU 94.5% overweight	 FSM Palau, Marshall Islands, Micronesia 91.4% overweight
 COOK ISLANDS 90.9% overweight	 TONGA 90.8% overweight
 NIUE 81.7% overweight	 SAMOA 80.4% overweight
 PALAU 78.4% overweight	 KUWAIT 74.2% overweight
 USA 74.1% overweight	 KIRIBATI 73.0% overweight

AND THE PROBLEM IS GROWING

OBEESITY IN 1980
7.9%
OF WOMEN

4.8%
OF MEN

OBEESITY IN 2008
13.8%
OF WOMEN

9.8%
OF MEN

\$300 BILLION
ANNUAL HEALTH CARE COSTS FOR OBEESITY IN THE U.S. AND CANADA

SEVERELY OBESE PEOPLE DIE UP TO **10 YEARS SOONER** THAN THOSE OF NORMAL WEIGHT

Overweight and obese are defined as abnormal or excessive fat accumulation that may impair health.

PHOTOGRAPH BY GETTY IMAGES FOR ACTOSINURYLAWYERS.COM
DESIGNED BY SHREK88.COM

BMI=KG/M²

Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. To determine your BMI, divide your weight in kilograms by the square of your height in meters.

(For those that don't do metric, that's your weight in pounds x 703, divided by your height in inches squared, or 703Lb/T²)

WHAT'S YOUR BMI?	>25	>30	>35	>40
	Overweight	Class I Obese*	Class II Obese	Class III Obese

*As Asian populations develop negative health consequences at a lower BMI than Caucasians, some nations have adopted obesity for the Japanese, obesity is any BMI greater than 25. China uses a BMI of greater than 28.

In Japan, about **one-in-every-20** adult women is obese, compared to **one-in-10** in the Netherlands, **one-in-four** in Jordan, **one-in-three** in the United States and Mexico, and **up to seven-in-10** in Tonga.



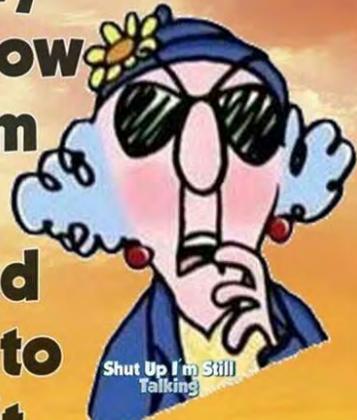
WEB TIPS

Do Yourself a Favor: Set Up These Custom Typing Shortcuts on Your iPhone Right Now

It seems Apple added text expansion to iOS 5 and decided not to mention it. This is a great, highly-desired feature that can save you tons of time typing frequent phrases and long words. Here's how to set it up and the phrases you'll want to add right away. In a regular day, most of us type the same things over and over again, wasting an enormous amount time.

<http://lifel hacker.com/5849229/how-to-configure-ios-5s-awesome-built-in-text-expansion>

My body knows How old I am but my mind refuses to believe it....



Shut Up I'm Still Talking



5 Tips to Get Your Stolen Bike Back

Record It

When you buy a new bike (or other expensive piece of equipment like wheels), keep copies of the original purchase receipts. It's a key way to prove ownership.

Register It

All bikes have serial numbers, right? These are useful in warranty situations, but also to record proof of ownership. Most municipal police departments have bike registries. You'll likely get a tamper-proof registration sticker to put on your bike, but the information will also be kept in a police database and can be used in the event of theft. You may have to visit a local precinct for this, but some bike shops are equipped to register your bike right there.

Rules of the Road

We should note that this is different than the hotly debated bicycle licenses you sometimes see proposed to ensure that cyclists pay "their share" of road maintenance (a canard we won't bother to debunk here). One of the best aspects of registration is there's no reason for the police not to pursue the case. If you ever sell the bike, make sure to give the buyer a receipt and tell them about the registration.

Insure It

Most homeowners' and renters' insurance policies cover theft of personal effects even outside the home. But check your policy for specific restrictions, like reimbursement limits. If you've got some fancy rides, you may need a special, additional policy called a "rider." As well, make sure the coverage is replacement value rather than actual cash value; a five-year-old bike will depreciate far below its replacement cost, especially when you take into account the standard deductible.

Label It

We'll be honest—many stolen bikes are never recovered. But there are some methods to help ensure what's yours stays yours. One old trick: Write "This bike belongs to" and your contact info on a small

piece of paper. Waterproof it (laminating or even covering it with packing tape works) then fix it to the inside of your seatpost so that it sticks out slightly. If the bike ever turns up at a shop, a sharp mechanic may notice the label doesn't match the name on the repair form. There are a few higher-tech solutions as well, like the Bike Spike and the Spy Bike; the Bike Spike uses GPS and cell technology, while Spy Bike relies on cell reception.

Report It

If your bike is stolen, make sure to report the crime to local police (no, don't call 911 unless it's a theft in progress). If the cops don't know your bike is stolen, they can't get it back to you. Similarly, you can't make an insurance claim without proof of theft, which is most commonly a copy of the police report. When you file a report, ask for a specific officer's contact information for follow-ups; don't settle for calling the general line.

Watch It

Pawn shops are common places for thieves to sell stolen bikes. If your bike gets pinched, contact local pawn shop owners and ask if they've seen it. If not, give them specific info about your bike so they can report it as stolen if the thief does bring it in. They should call police if it shows up, not you.

Similarly, keep an eye on Craigslist and eBay. The latter site takes fraud seriously and is typically responsive about shutting down auctions of stolen goods, as long as you provide proof (another situation where the police registry is handy). Craigslist is more the wild west, but if you spot your bike on it or any local auction site, contact the police right away. While there are stories of folks recovering their bikes personally, it's dangerous; don't directly contact the seller or try to get your bike back on your own.



Whole Grains Help You Live Longer

- protect blood vessels,
- prevent DNA damage, and
- reduce inflammation throughout the body.

Diets that Recommend Avoiding Whole Grain

• The various Paleo Diets recommend avoiding all whole grains and were the world's most popular diets in 2013. The *US News and World Report* interviewed scientists who rated The Paleo Diet as dead last compared to other popular diets.

• Gluten-Free Diets recommend avoiding wheat, rye and barley. They substitute the gluten free grains such as rice and corn, and other sources of carbohydrates such as potato starch. Most gluten-free processed foods are made with refined grains, not whole grains. The November 2014 issue of *Consumer Reports* has a well-researched article showing that the majority of people on gluten-free diets:

- 1) could be missing treatment for another disease that they may really have,
- 2) are not eating a more healthful diet,
- 3) are paying more for their special gluten free foods,
- 4) are at increased risk for gaining weight,
- 5) are still getting gluten in foods that are labeled gluten-free, and
- 6) may be exposing themselves to higher levels of arsenic from rice.

The *Consumer Reports* survey showed that 63 percent of North Americans mistakenly think that a gluten-free diet improves physical or mental health, and 33 percent buy gluten-free products because they believe they will improve digestion and gastrointestinal function, help them lose weight and have more energy, lower high cholesterol, and strengthen the immune system. However, if you do not have celiac disease, a gluten-free diet is not likely to offer you any benefits at all.

The huge Health Professionals Follow-Up Study, which evaluated 74,000 women from the Nurses' Health Study, and 44,000 men from the Doctors' Study, shows that eating a one-ounce serving daily of whole grains for 25 years lowers a person's risk of dying from heart disease by nine percent and risk of dying from anything by five percent (*JAMA Internal Medicine*, published online Jan 5, 2015). Furthermore, substituting whole grains for refined grains reduced chances of dying by eight percent, and substituting whole grains for red meat reduced death chances by 20 percent. Both meat and refined carbohydrates increase risk for diabetes and heart attacks. Meat blocks insulin receptors to raise blood sugar levels, while refined carbohydrates increase absorption of sugars to raise blood sugar levels.

The study authors knew that people who restrict red meat and refined carbohydrates are likely to have many other healthful lifestyle habits, so they had to correct data for other factors that affect death rate: overweight, smoking, alcohol, exercise, use of vitamin pills, use of aspirin, family history of heart disease, cancer or diabetes, history of high blood pressure or high cholesterol, and having diabetes at the start of the study. They also corrected for the amount of fruits and vegetables people ate.

Why Whole Grains are Healthful

Unlike refined carbohydrates, whole grains contain bran from the outer coating of a grain and the germ from the inner part. Whole grains are richer than white flour or white rice in nutrients such as fiber, magnesium, vitamin E and other plant-based compounds called phytochemicals. They help to:

- regulate blood sugar, fats and cholesterol,

Marine oil supplement has positive effects on post-exercise muscle damage



There may be a greater connection between mussels and muscles than previously thought. A new study has found that taking a pre-exercise supplement of the omega-3

PCSO-524, a marine oil lipid derived from the New Zealand green-lipped mussel, has significant positive effects on post-exercise muscle damage.

An Indiana University study has revealed that there may be a greater connection between mussels and muscles than previously thought.

The study, by kinesiology professor Timothy Mickleborough at the IU School of Public Health-Bloomington, found that taking a pre-exercise supplement of the omega-3 PCSO-524, a marine oil lipid derived from the New Zealand green-lipped mussel, has significant positive effects on post-exercise muscle damage.

The pharmaceutical name of the supplement is Lyprinol, or Omega XL in the United States, and it has previously been used to effectively reduce the effects of osteoarthritis, rheumatoid arthritis, inflammatory bowel disease and exercise-induced asthma. Pharmalink International LTD, which funded the study, develops it.

Mickleborough said his initial study of this particular marine oil supplement led him to further test its healing properties on other parts of the body.

"I've worked with Pharmalink before when they approached me to do a study with this particular oil and its effects on exercise-induced asthma and respiratory inflammation," Mickleborough said. "I thought if it can be used as an anti-inflammatory for lungs, perhaps it could reverse muscle inflammation as well."

For the study, lead author Mickleborough and his colleagues tested 32 "untrained male subjects" -- men who exercise less than three times a week for less than 30 minutes at a time -- who would elicit a greater muscle response than an athlete who is used to regular muscle damage. The subjects were randomly given either the marine oil supplement or a placebo for 26 days before a muscle-damaging exercise session and for 96 hours afterwards.

The exercise session consisted of running at fairly high intensity for 20 minutes downhill on a treadmill. The body's reaction to the muscle-damaging exercise regimen was tested immediately, and at 24, 48, 72 and 96 hours post-workout.

The men who were given the PCSO-524 marine oil supplement exhibited less muscle soreness, less muscle pain, less strength loss, less fatigue and even less inflammatory proteins evident in their bloodstreams. Overall, they experienced less bodily stress after their workout in comparison to the subjects who were given the placebo.

For people who are looking to start exercising again, or even for those who engage in intense workouts regularly, this discovery can have a variety of positive effects on how their bodies react to muscle damage, Mickleborough said.

"It might have positive implications for triathletes if they're doing several different types of exercises, and it could potentially help diminish soreness in multisport, recreational athletes as well," he said. "Essentially, for anyone who is engaging in unaccustomed exercise, it's a nice product."

Mickleborough's study "The effects PCSO-524®, a patented marine oil lipid and omega-3 PUFA blend derived from the New Zealand green lipped mussel (*Perna canaliculus*), on indirect markers of muscle damage and inflammation after muscle damaging exercise in untrained men: a randomized, placebo controlled trial" is featured in the Feb. 2015 issue of the *Journal of the International Society of Sports Nutrition*.



Sugar-Added Foods Increase Diabetes Risk

Sugar-added to foods, but not in whole fruits, increases risk for diabetes, heart attack and premature death, according to a new summary of animal and human studies, clinical trials in humans and epidemiological human population studies (*Mayo Clinic Proceedings*, published online January 29, 2015). The report shows that adding sugar to foods and processing foods appear to be the main reasons for the epidemic of diabetes that is expected to affect 40 percent of North Americans. However, sugar eaten in fruit is not associated with increased risk for disease and death. This excellent comprehensive literature review shows that even when people do not increase their caloric intake, sugar-added foods increase risk for diabetes and damage to nerves, kidneys, eyes, and heart. The authors conclude that “by limiting sugar to five to 10 percent of total caloric intake, the harmful effects of sugar, particularly fructose, on insulin resistance could be minimized.”

Too Much Sugar is Added to Processed Foods

The authors of the Mayo Clinic report that “Seventy-five percent of packaged foods and beverages in the United States have added sugar, and Americans eat up to 22 to 47 teaspoons of sugar a day, including hidden sugar in processed foods.” They write that current guidelines for sugar can damage your health. The American Heart Association recommends that we should restrict added sugars to no more than six teaspoons (24 g), or 100 calories, per day for women, and nine teaspoons (36 g), or 150 calories per day, for men and that sugar-sweetened beverages should be reduced to less than 36 ounces, or 450 calories, per week. The World Health Organization has proposed that added sugar should be restricted to less than five percent of a person’s daily calories. Both of these recommendations are far too high.

Table Sugar vs High Fructose Corn Syrup

Compared to glucose, fructose causes

- higher blood sugar and insulin levels,
- more fat to be stored in your body,
- more inflammation, and
- more high blood pressure,

However, most nutritionists believe that table sugar is no better for you than high fructose corn syrup (HFCS). They both contain the same two sugars, glucose and fructose, but table sugar has the two sugars bound together in a single molecule, while HFCS has them already separated. Once table sugar reaches your stomach, the glucose and fructose are separated so that both table sugar and HFCS are digested in the same way. In spite of its name, HFCS does not contain much more fructose than table sugar.

It has 55 percent fructose while table sugar is 50 percent fructose, which is not a significant difference.

The problem with HFCS is that it is cheaper than table sugar, so manufacturers use more of it. The authors recommend that the government should stop subsidizing corn, which drops the price of corn products (HFCS) to less than table sugar made from sugar cane or sugar beets. People should restrict all forms of sugar and not argue about which form of sugar is more harmful.

Diabetes Linked to Sugar and Refined Carbohydrates, Not Just Excess Calories

The authors state, “We need to understand that it isn’t the over consuming of calories that leads to obesity and leads to diabetes.

It’s refined carbs and added sugars that lead to insulin resistance and diabetes, which lead to high insulin levels, which drives obesity.”

Sugar added to foods and drinks cause the highest rises in blood sugar levels. When blood sugar levels rise too high:

- sugar is used for energy and a limited amount can be stored in muscles and the liver
- the rest of the sugar is rapidly converted to a type of fat called triglycerides (*high triglycerides*)
- high levels of triglycerides are deposited in fat cells to make you fat (*obesity*)
- your good HDL cholesterol clears triglycerides from the bloodstream by carrying it to the liver (*low HDL cholesterol*)
- the liver fills up with triglycerides (*fatty liver*)
- when blood sugar levels rise too high, insulin lowers blood sugar levels by driving sugar from the bloodstream into the liver
- fat in the liver prevents the liver from clearing sugar from the bloodstream and this drives blood sugar levels even higher (*insulin resistance and diabetes*)
- high blood sugar levels cause sugar to stick to surface membranes of cells throughout your body
- once sugar is stuck on the outside surface of a cell membrane, it can never get off; it is eventually converted chemically to sorbitol to destroy the cell
- this sequence explains why high blood sugar levels lead to dementia, impotence, heart attacks, strokes, kidney failure, osteoporosis, cancers, nerve damage and more.

Dangers of Added Sugars

All calories are not equal. The authors quote many studies that show that added sugars are much more harmful than starches in whole grains, fruits or vegetables. Added sugars caused higher insulin and blood sugar levels that precede metabolic syndrome, diabetes, and extensive cell damage; harmful fat storage, particularly in the belly, that causes diabetes; and inflammation and high blood pressure that cause heart attacks.

- The risk for diabetes is 11 times higher for each 150-kcal/person per day increase in sugar vs a similar increase in total calories (*PLoS One*, 2013;8:e57873).
- A diet with five percent sugar (rather than 18 percent or 33 percent) drops blood sugar levels to normal (*Am J Clin Nutr*, 1981;34:2477-2483; *Am J Clin Nutr*, 2009;89:438-440; *JAMA*, 2004;292:927-934; *Nutrients*, 2014;6:2088-2103; *Am J Public Health*, 2013;103:2071-2077).
- People who were fed just fructose had 25 percent less insulin sensitivity (harmful) compared to those who received just glucose (*Am J Clin Nutr*, 1980;33:273-278).
- Sugar added to food is associated with increased risk for high blood pressure (*Open Heart*, Jan, 2014;1(1)).

Sugared Drinks vs Sugar in Foods

Sugars are far more damaging to your health in drinks than in solid foods. You get higher blood levels of sugar after drinking sugar than eating it. A teaspoon of sugar in coffee is more damaging than the same amount in a cookie, and sugar in a soft drink is more damaging than the same amount of sugar in a piece of cake.

Recommendations

- Try to replace most of the processed foods in your diet with the same foods in their natural state: fruits, vegetables, whole grains, beans, nuts and other seeds
- Avoid sugar in liquid forms, including fruit juices
- Restrict foods that have had sugars added to them.

