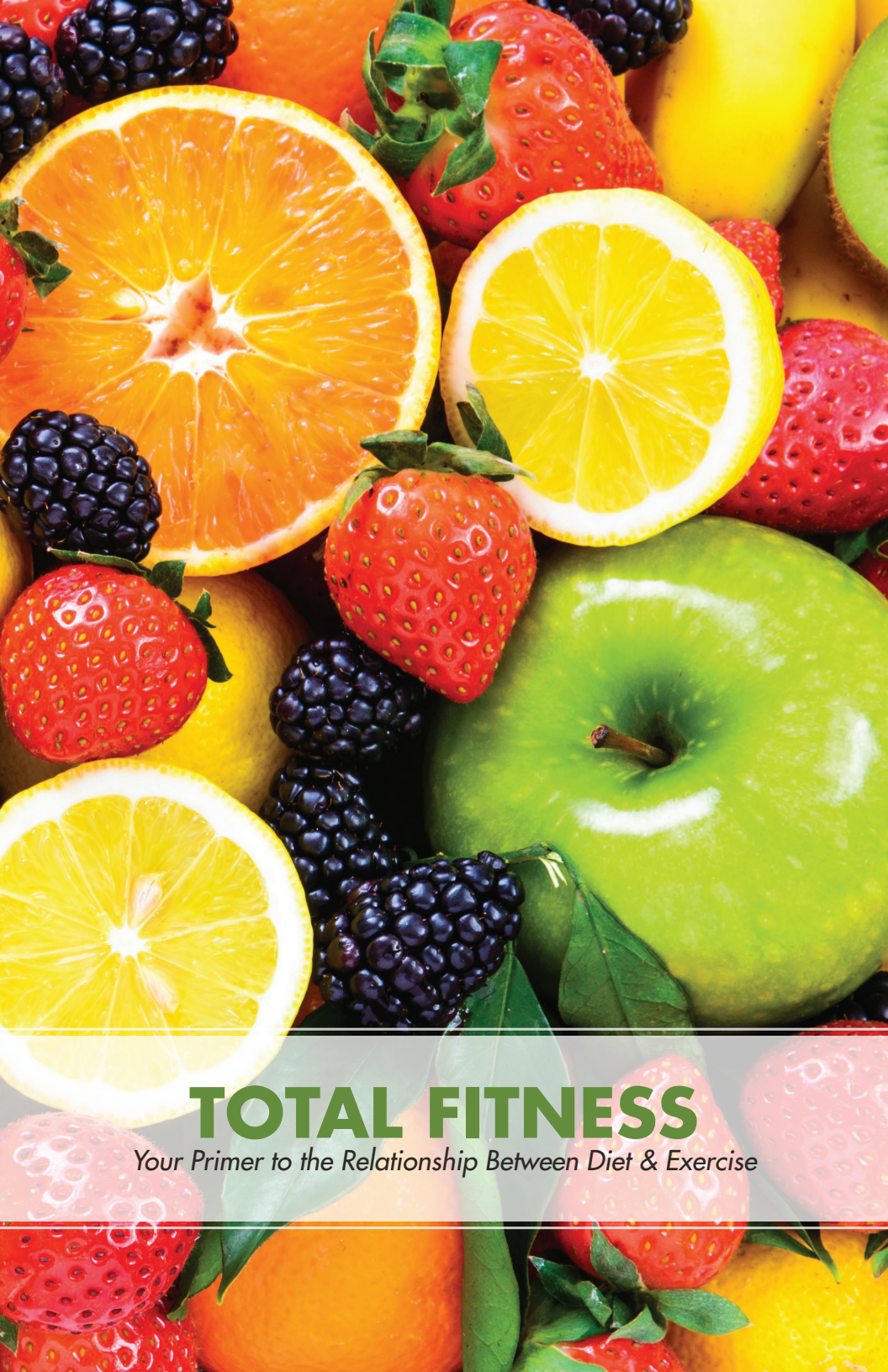
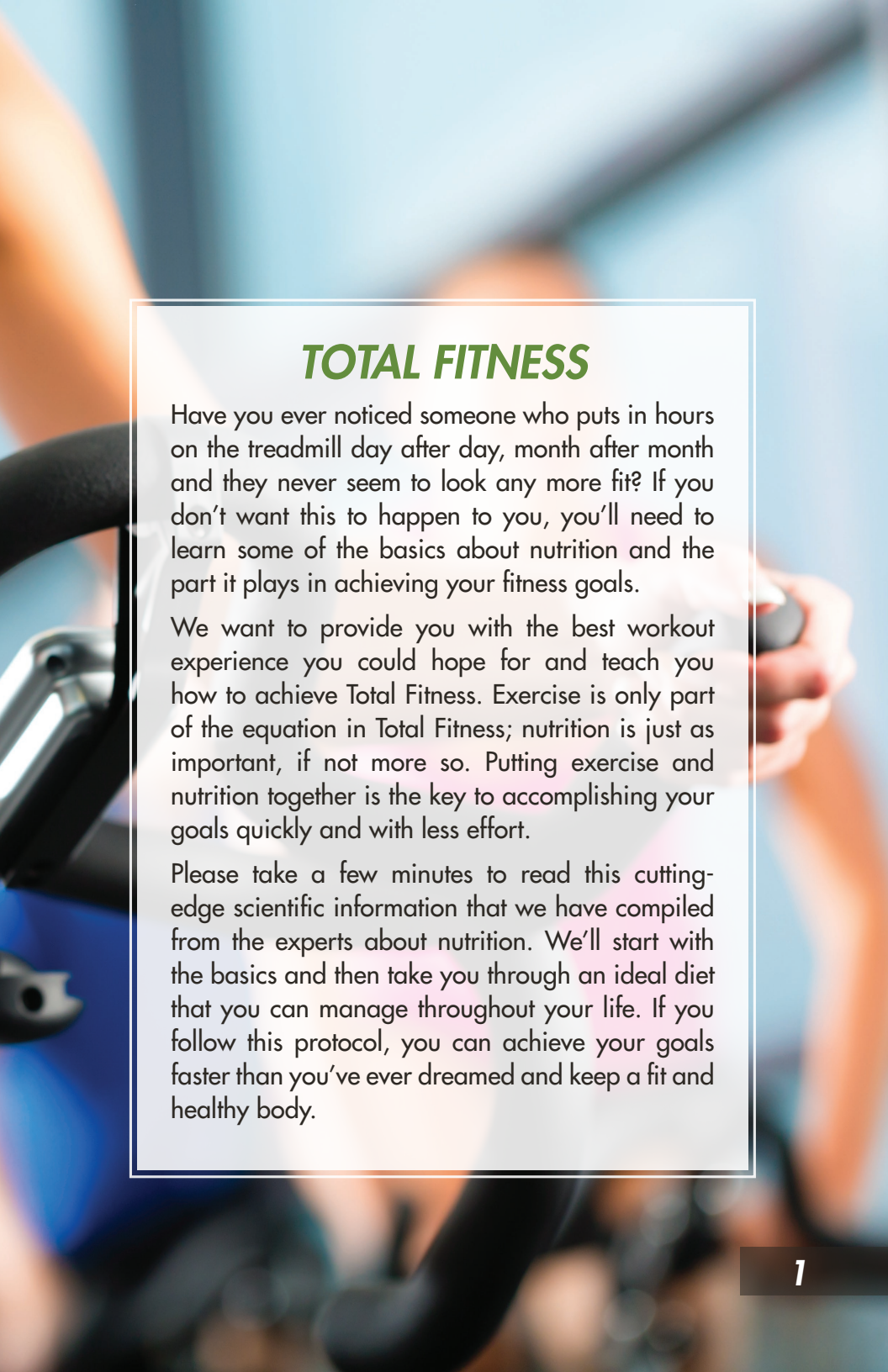


TOTAL FITNESS

Your Primer to the Relationship Between Diet & Exercise



TOTAL FITNESS

Have you ever noticed someone who puts in hours on the treadmill day after day, month after month and they never seem to look any more fit? If you don't want this to happen to you, you'll need to learn some of the basics about nutrition and the part it plays in achieving your fitness goals.

We want to provide you with the best workout experience you could hope for and teach you how to achieve Total Fitness. Exercise is only part of the equation in Total Fitness; nutrition is just as important, if not more so. Putting exercise and nutrition together is the key to accomplishing your goals quickly and with less effort.

Please take a few minutes to read this cutting-edge scientific information that we have compiled from the experts about nutrition. We'll start with the basics and then take you through an ideal diet that you can manage throughout your life. If you follow this protocol, you can achieve your goals faster than you've ever dreamed and keep a fit and healthy body.

THE MACROS

CARBOHYDRATES

Friend or Foe?

Carbohydrates (carbs) are one of the three macronutrients (macros) necessary for balanced nutrition along with proteins and fats. Carbs can come from whole grains, beans, fruits, legumes and vegetables. They represent the very foundation of our diets; they are nature's energy source. Depending on your goals, they should represent 45-55% of your daily calories.

Our body recognizes carbs as its first energy source and allows our body to use the other macros the way nature intended. Your body breaks down carbs and carries them through your bloodstream to be stored in your muscles and liver as glycogen (stored sugar). Throughout the day, your body calls on these stores of sugar to perform all the tasks it requires.

Fuel With a Limited Gas Tank

Carbohydrates are your body's primary source of fuel, but fuel storage is limited. The human body can only store between 200–500 grams of glycogen. At 4 calories per gram of sugar, the stored glycogen capacity is equivalent to 800–2000 calories. It is entirely possible to burn all of those calories in a 60–90 minute session of intense exercise. You can certainly burn these stores of energy daily, which is why you constantly need to eat and replenish your glycogen levels. To achieve optimal

performance, the types of carbs (fast/slow-digesting), quantities of each type, and the timing of ingestion are all critical factors.

Slow Carbs NOT Low Carbs

You've heard us mention slow-digesting and fast-digesting carbs, which is a reference to the Glycemic Index. The Glycemic Index (GI) is a measure of how quickly blood sugar levels rise after eating a specific food. The index is measured against the rate of absorption of pure glucose, which has a GI rating of 100. Generally speaking, carbs that are unprocessed, still full of fiber, and are as close to their original form when harvested are slow-digesting. Exceptions that are fast-digesting include processed grains, potatoes and white rice to name a few. Fruit, though it is primarily sugar, is slow-digesting because fructose is the primary sugar and it possesses soluble fibers.

Fast-digesting carbs raise your blood sugar level quickly and signal your body to stop burning (and start storing) fat. Instead of burning that fat, it uses the excess sugar in your bloodstream for energy. In contrast, slow-digesting carbs, such as fruits, vegetables and whole grains, keep blood-sugar levels more even, allowing your body to continue to burn fat. So, even though a high-sugar cookie and a big bowl of fruit may have the same number of calories, they have very different effects on your ability to lose body fat.

Now we don't mean to confuse you, but…fast-digesting carbohydrates aren't always bad. In fact, sometimes they're the smartest foods you can eat. The secret is timing.

TIMING IS EVERTYHING

Fast Carbs For Recovery

Whether your goal is fat loss, muscle gain or just maintaining, your body still needs to recover quickly following a workout. To achieve your goals, the first step is Recovery. Many people ignore this aspect of their workout, which can be a waste of their hard efforts. Now is the time to ingest fast-digesting carbs and here's why:

The Secret

The secret to weight management is simply to keep your body in an anabolic (muscle-saving) state. By refueling your

Did you know?

Glycogen must be present to burn fat; if there's none available, your body converts protein – your hard-earned muscle – into glycogen. So it is important that we are continually replacing our stored energy throughout the day, especially immediately following your workout.

body within 30 minutes of a workout with fast-digesting, processed, liquid carbs that are easily assimilated by your body, all the cells that once contained glycogen and water are now quickly reenergized. This keeps your metabolism humming. Muscle is saved and not used for energy. Having more muscle on your body is critical to a healthy metabolism and the more muscle you have, the more fat you'll naturally burn off!

How Many Carbs Should I Eat?

Contrary to what all the proponents of those wacky diets tell us, your body has evolved over thousands of years and is designed to use carbohydrates for energy. Carbs give us energy, while proteins and fats are used for tissue repair, cellular regeneration, hormone creation, insulation, and more. In a traditional American diet, you will consume approximately 45-55% of your daily calories from carbs. To make it simple, every time you eat, the majority of what's on your plate should come from a vegetable, fruit, legume, grain or starch. This percentage will vary slightly from person to person depending on your personal goals, metabolism and energy demands.

Common Myth About Sugar

Sugar is fattening - FALSE. Sugar has no special fattening properties. It is no more likely to be turned into fat than any other carbohydrate. Sugar, which is often present in foods high in energy and fat, may sometimes seem to be "turned to fat," but it's the total energy (calories) rather than the sugar in those energy-dense foods that may contribute to new stores of body fat. It's really just the over-consumption of these calories that can be fattening.

PROTEIN

Protein in the Body

Squeeze all the water out of your body and what's left? Mostly protein. Over 50% of the dry weight of your body is protein. Even the hemoglobin that carries the oxygen in your blood is protein. The structure of your genes and your brain cells is made of protein. All bodily functions from the blink of an eye to the creation of new muscle are controlled by thousands of different enzymes – and all enzymes are proteins.

But, body proteins are not forever; they die continually. 98% of the molecules of the human body are completely replaced each year. Bits and pieces of all your structures are constantly being replaced with new proteins. In six months your biceps, your blood, your enzymes, even the structure of your genes, are all completely replaced. The body you have today is built almost entirely of what you have eaten over the last six months. The human system is ingenious at stitching and pinch-hitting, but it can't build premium tissue from garbage. A "Twinkies and coffee" diet will yield a "Twinkies and coffee" body.

Bio-Availability

The USDA lists the sources of protein from foods as including meat, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds. Just like with carbs, all proteins from food are not exactly created equal. Bio-availability describes the percentage of just how much our bodies can make use of proteins from a specific food source. Our bodies and digestive systems absorb some proteins better than others; plus, certain food sources will provide a higher amino acid profile (which is good). Your body requires essential amino acids present in protein to fully repair and rebuild itself. Some foods that are highly Bio-Available include whole eggs, filtered cow's milk and fish.

More About Whey Protein

As we mentioned above, one of the most bio-available forms of protein is filtered cow's milk. Whey is the name of the pure, natural, high-quality protein from cow's milk. Whey is a by-product of making cheese.

Not All Whey is the Same

There are two different forms of Whey Protein.

Whey Protein Concentrate (WPC) has anywhere between 29% and 80% protein, depending on the level of filtration. The lower the percentage, the less the Bioavailability (BV) and the cheaper the product. As the protein level in WPC decreases, the amounts of fat and/or lactose increase. Raw undenatured WPC has active immune enhancing compounds like lactoferrins and immunoglobulins. These are very beneficial to a healthy immune system and BV.

Whey Protein Isolate (WPI) is the most concentrated form of protein available. It contains up to 92% protein and very little fat and lactose. The process of making WPI involves hydrolyzation (or fermentation), which breaks down the larger peptides into smaller ones called Isolates. These very small peptides are easily absorbed by the body. This makes Whey Protein Isolate one of the most BV protein sources in the world. Unfortunately, because of the level of filtration, many or all of the active ingredients are removed.

Blends: Some products address the debate over whether WPC or WPI is better by blending the two.

Adding both of these sources to your diet as a supplement is an excellent and easy way to improve your nutrition. Whey protein is an excellent protein choice for individuals of all ages. It provides a number of benefits in areas including sports nutrition, weight management, immune support, bone health, and general wellness.

Facts About Protein & Weight Management

- The body requires more energy to digest protein than it does other foods (thermic effect) and as a result, you burn more calories after a meal that is rich in protein.
- High quality whey protein is rich in leucine to help preserve lean muscle tissue while promoting fat loss. Whey protein contains more leucine than milk protein, egg protein or soy protein.
- Protein helps to stabilize blood glucose levels by slowing the absorption of glucose into the bloodstream. This in turn reduces hunger by lowering insulin levels and making it easier for the body to burn fat.
- Whey protein supplies some of the highest amounts of BCAA's (Branch Chain Amino Acids) of any food. BCAAs play a critical role in maintaining and building muscle. The more muscle you have, the higher your metabolism and the more fat you burn…even while you sleep!

BODY WEIGHT	TRAINING CATEGORY/PROTEIN GRAM INTAKE		
LBS	CLASS 1	CLASS 2	CLASS 3
88	80	68	56
110	100	85	70
132	120	102	84
154	140	119	98
176	160	136	112
198	180	153	126
220	200	170	140
242	220	187	154
264	240	204	168

How Much Protein Should I Eat?

Most experts and nutritionists agree that a minimum of 12% of your daily calories should come from protein in a traditional American diet. But, if you have fitness or wellness goals, or put your body through physical or emotional stress, the number will be much greater – as much as 40%! To best understand the quantity of protein that you should be ingesting to ensure that your nutrition suits your personal goals, refer to the chart above. For the overall masses, protein intake of about 30% of your daily calories is a good target.

For the Atheletes, choose the Class that best fits your profile then align your body weight in pounds:

Class 1: Sports that demand strength first, then speed, then endurance (i.e. weightlifting, BodyPump).

Class 2: Sports demanding speed first, then strength, then endurance (i.e. functional training, tennis, boxing, wrestling, karate, judo, sprint swimming, ball games).

Class 3: Sports where endurance dominates (i.e. middle and long distance running, swimming, triathlon, cycling).

FAT

Surprisingly Important to Your Health

Believe it or not, fat is a necessary macronutrient and is essential for optimal health, but only the right types and in the right quantities. Fats or lipids are the most concentrated source of energy in your diet. When oxidized, fats furnish more than twice the number of calories per gram furnished by carbs and proteins. One gram of fat yields approximately 9 calories, as compared to 4 calories for carbs or proteins. In addition to providing energy, fats act as carriers for the fat-soluble vitamins, A, D, E, and K. By aiding in the absorption of vitamin D, fats help make calcium available your body tissues, particularly the bones and teeth. Fats are also important for the conversion of carotenes such as beta carotene into vitamin A. Fat deposits surround, protect, and hold organs in place, such as your kidneys, heart and liver. A layer of fat insulates the body from external temperature changes and preserves body heat. Fat prolongs the process of digestion by slowing down the stomach's secretion of hydrochloric acid.

Everyone benefits from the consumption of healthy fats, such as from plant oils or fish. These (and all) fats are broken down into fatty acids that are essential for the effective function of the brain, inner ear, eyes, adrenal glands, immune system and sex organs. In these very active tissues, special fats are essential for the high level of oxygen use and energy transformation required for optimum performance.

How Much Fat Do I Need In My Diet?

Every ounce of extra body fat that you carry increases the energy required to move your body. Additionally, every ounce of extra body fat increases body temperature during exercise, not only because of extra weight and insulation, but because you have less water for cooling. Body fat is only 50% water whereas muscle is 75% water.

ACE BODY FAT % CHART		
Description	**Women**	**Men**
Athletes	**14–20%**	**6–13%**
Fitness	**21–24%**	**14–17%**
Average	**25–31%**	**18–24%**
Obese	**32% +**	**25% +**

Keep fat intake between 15-25% depending on your goals.

The American Council on Exercise recommends the chart above as a guide for body fat % in men and women.

Fat and Cholesterol

Cholesterol is a lipid or fat-related substance necessary for good health. It is a normal component of most body tissues, especially those of the brain, nervous system, liver, and blood. It is needed to form sex and adrenal hormones, vitamin D, and bile salts. Bile is needed for the digestion of fats. Cholesterol also plays a part in lubricating the skin. Cholesterol is part of all cell membranes and is a precursor to steroid hormones.

Fat and Omega-3 Fatty Acids

Omega-3 fatty acids are unique long-chain polyunsaturated fatty acids. There are three types of Omega-3 fatty acids, and each type differs in its chemical structure and physiological role. The major types of Omega-3 fatty acids are:

- ALA – Alpha Linolenic Acid
- EPA – EicsaPentanoic Acid
- DHA – DocosoHexaenoic Acid

Omega-3 fatty acids are considered heart-healthy fats. They are highly unsaturated, and scientific studies show that unsaturated fats do not promote hardening of the arteries, high blood pressure, weakened heart or arterial tissue and strokes.

Most importantly, Omega-3 fatty acids are nutritionally essential. Humans lack the enzyme required to produce Omega-3 fatty acids from other types of ingested fats, so Omega-3 fatty acids must be acquired by the diet.

DHA and EPA – and ALA to a much lesser extent – are accumulated in the membranes of the heart, blood cells, and other tissues. These fatty acids help keep the membranes fluid, aiding in the normal functioning of cells and tissues. DHA and EPA levels are high in these tissues, but DHA is the most abundant Omega-3 found in the brain and retina, accounting for more than 50% of the total unsaturated fatty acids present.

Health Benefits

Omega-3 fatty acids are known to play important roles in health, specifically in:

- Preventing Cardiovascular Disease and Heart Arrhythmias
- Improving Immune Function
- Protection against Breast Cancer in post-menopausal women
- Relieving the symptoms of Chronic Disorders such as Depression and Arthritis
- Improving Kidney Function
- Supporting a Healthy Reproductive System
- Improving Cognition, Especially in Children
- Relieving Scaly Skin

Where Are Omega-3s Found?

It is important that we consume foods rich in DHA. DHA is found primarily in cold-water fish such as salmon, trout, tuna and halibut. DHA is not present in the plant kingdom but ALA is. ALA is naturally present in vegetables and plant foods. Humans are able to synthesize ALA into DHA and EPA. The best sources of ALA are flax seed, canola oil, sweet potatoes and walnuts.

Labels Can Be Misleading

Be careful when reading labels and nutrition facts panels on the foods you buy. Even though they may report that a product has low fat, it is really relative to the total weight of the product. This includes water, and they don't ever tell you that. This applies to meats as well as all processed foods that may contain moisture.

1. Example – Milk contains 87.6% water (0 calories), 3.8% fat (69 calories), and 8% carbs and protein (64 calories). That makes it more than 50% fat. Even low-fat 2% milk is over 25% fat.

2. Example – A turkey roll labeled 90% fat free, would have only 10% fat. Ingredients are given by weight. The real numbers for a 100 gram (3 ½ oz) serving are:

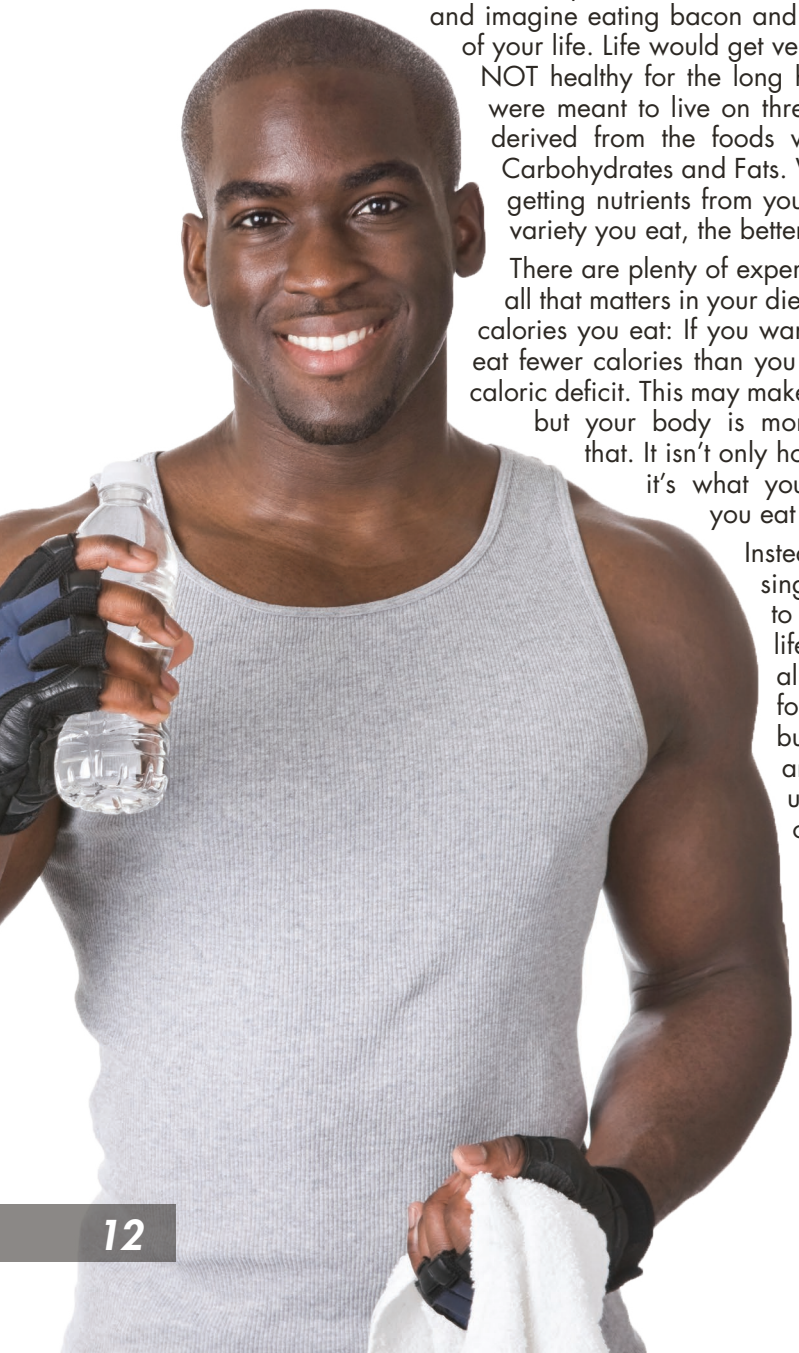
• Water weight	70 grams	0 calories
• Fat weight	10 grams	90 calories
• Protein weight	20 grams	80 calories
	Total	170 calories

The actual fat content is a whopping 53%!


"The body you have today is built almost entirely of what you have eaten over the last six months."

DIETS COME IN MANY FORMS

There are so many diets out there – Low-Carb, High-Protein, Low-Fat, Grapefruit, Zone, Vegetarian, No Sugar – the list goes on and on. The trouble with ALL of these diets is that they are all temporary. Some of these diets do work in the short term, but are impossible to maintain for life. Just try and imagine eating bacon and eggs for the rest of your life. Life would get very boring and it's NOT healthy for the long haul. Our bodies were meant to live on three macronutrients derived from the foods we eat: Proteins, Carbohydrates and Fats. When it comes to getting nutrients from your food, the more variety you eat, the better the results.



There are plenty of experts who claim that all that matters in your diet is the number of calories you eat: If you want to lose weight, eat fewer calories than you burn, creating a caloric deficit. This may make sense on paper, but your body is more complex than that. It isn't only how much you eat; it's what you eat and when you eat it.

Instead of choosing a single diet, you need to learn to eat for life. Eating for life allows you to eat foods of all types, but in moderation and with the understanding of how the macronutrients in those foods relate to our fitness goals. Eating for life is the ideal diet.

Extra Morning Tip
If you catch your workout super early in the A.M. and eating a full meal beforehand is out of the question, eating half of a banana is a good substitute. Bananas are fast-digesting and replete with enough fruit sugar to kick your body into an anabolic (muscle building) state.

EATING FOR LIFE

Right After You Wake

Missing breakfast, or any meal, elicits an emergency response from your body. Believing it's on the brink of starvation, your body stores a larger percentage of what you eat next as fat, no matter what you just ate. Studies by researchers at Harvard University found that those who ate breakfast everyday were 44% less likely to be overweight and 41% less likely to suffer from insulin resistance (a precursor to diabetes) than those who ate no breakfast. There are a few reasons for this statistic.

First – the most obvious reason – skipping breakfast tends to cause binge eating later in the day. Second, while you sleep, your liver glycogen (stored sugar) levels drop, sending hormonal responses that tell your brain that you are starving. When your body is in a starving state, it cannibalizes its own muscles, converting that hard-earned muscle to glucose (active sugar) to feed the brain and maintain your metabolic rate. The next time you eat, your body stores more of the calories you just ingested as fat. If you eat within 30 minutes of waking up, you stop this vicious cycle and keep your metabolism revved up.

- **How to eat**: Fill your plate with high quality protein, slow-digesting carbs and healthy fats. Protein stops muscle breakdown and provides the raw materials for laying down new muscle. Carbs replenish energy stores without elevating blood sugar. Healthy fats assure your body that there's more fats coming in, giving it the green light to burn stored fat.

A Morning Pick Me Up

Stimulants like caffeine help to reenergize you by releasing adrenaline. For that reason, coffee can be a smart pick-me-up for a short-term energy boost, but only when consumed moderately.

- How to eat: Consume no more than one milligram of caffeine per pound of body weight daily, roughly the equivalent of two 8 oz. cups for a 200lb person.

Post-Workout Tip

1 hour after your post-workout meal, opt for solid food. This may be the best time to eat pasta and meatballs or even better, combine fast and slow digesting carbs with protein by choosing a lean meat, some green vegetables and some pasta, rice, or a potato.

Every 2 to 3 Hours throughout the Day

Breaking up your daily caloric intake into five to seven smaller meals, instead of three large ones, keeps your metabolism and your sugar levels stable throughout the day. Eating a large meal will initially raise blood sugar levels, triggering an increase in the release of insulin within the bloodstream. Insulin, in turn, tells your body to store excess calories as fat, rather than using them for energy. Waiting more than 4 to 5 hours between meals can also cause your blood sugar to bottom out at the end of that stretch of time, leaving you weak, irritable, and tired. To combat that weakness, your body secretes cortisol, a hormone that boosts blood-sugar levels back to normal. One of the ways it does this is by converting muscle protein into sugar (glucose), what exercise scientists call a catabolic (muscle wasting) state. The solution is to eat smaller, more frequent meals. Eating more often helps regulate blood-sugar levels, protecting your muscles from being broken down and used as energy.

- How to eat: Just like at breakfast, always include protein, along with either healthy fats or slow-digesting carbs (preferably both) in your meals. For each small meal, protein is the major player since up to 30% of its calories are burned during digestion (compared with 8% of the carbs and 2% of the fats).

Eating Before Your Workout

Timing the meal before your workout is key to staying fueled-up for the exercise. Your pre-workout meal should occur 2–3 hours prior. This gives your body ample time to digest and convert all of the carbs in this meal to glycogen. While working out, your body utilizes glycogen better than recently ingested carbs, fueling your workout more successfully. 60% (or more) of this meal's calories should be from slow-digesting carbs, 30% from protein and the balance from fat.

- How to eat: As we just mentioned, this meal should be a combination of the three macronutrients with carbs representing 60% of the meal. The carbs should be the slow-digesting type.
    - o Extra Tip: If you need to eat closer to your workout, be sure to include faster-digesting carbs, preferably in liquid form. Liquids digest faster than solids.

Post-Workout

By most accounts, the post-workout meal is the most important meal of the day. Skipping this meal can skew your metabolism and effectively cause you to waste your efforts. Unlike pre- workout, fast-digesting carbs are better here than slow-digesting carbs, because an intense workout changes your body's priorities.

Exercise can exhaust your body's glycogen, causing your system to immediately want to restore its energy supply. The first place your body looks for energy is in your GI tract. If it can't find any protein or carbs there, your body begins to feed upon itself by converting muscle tissue into glycogen. A quick post-workout feeding can give your body the calories it needs to have enough energy to refuel itself. Additionally, consuming a fast-digesting liquid drink within 30 minutes of completing your workout takes advantage of your body's accelerated state of repair, since your body converts glycogen at twice the normal speed within that time period. A timesaving Recovery Shake with a ratio of three parts carbs and one part protein is a perfect choice. As a rule of thumb, immediately following your workout, take in ½ - ¾ of a gram of carbs per pound of body weight.

Example – 130 pound woman = 65 grams – 97.5 grams

- How to eat: Combine high-quality proteins with a fast-digesting carbohydrate – preferably in a liquid form – immediately after your workout. Remember to keep the portion in line with your 5-7 meals a day plan.

Dinner

This meal can be one of the most difficult to keep in line with the 5-7 meals a day plan. It can be a very social meal and an elongated meal. There are a couple of tips to keeping your caloric intake in check though, without sacrificing a good time. Start off with small salad or a low-fat soup 20 minutes before your meal. Don't be afraid to order an appetizer for your main course if you're dining out. Many appetizer portions, when paired with a soup or salad, hit that caloric sweet-spot and give you a balanced meal.

- How to eat: Dinner is the perfect meal to get a broad blend of proteins, vegetables and starches. Remember, variety in your food sources is a key component to good nutrition.
    - Tip: Eating 4–6oz. of spinach (or any water-laden vegetable such as cucumbers, tomatoes or zucchini) adds fiber to your meal and the inherent water helps you feel full. The more fiber you have during a meal, the faster that meal passes through your system. Speeding digestion leaves less time for calories to be absorbed and converted into fat.

After Hours

Despite its thirst-quenching reputation, alcohol is actually a diuretic, which increases urination and promotes dehydration with every drink. This excessive water loss can dramatically diminish your energy, concentration, and performance.

- How to eat: Drinking 16 to 24 ounces of water before heading to bed can help stave off some of the partial dehydration that alcohol can bring about.

Bedtime

The closer you eat to your bedtime, the greater your chances of storing those calories as fat, which is why nutritionists recommend eating your last meal three or four hours before you sleep. Sometimes, a little hunger can make it difficult to fall asleep. Eating carbohydrates (like fruit) before bedtime can ease your hunger, but it also drops a surplus of calories into your system at a time when your body isn't using enough energy to burn them. What's the answer?

- How to eat: Bedtime is a great time to have a protein shake or cottage cheese, which is a casein. It takes a very long time for your body to digest proteins and is the perfect bedtime snack. While you are sleeping, your body breaks down the protein molecules into the amino acids your body needs to repair muscle tissue. Since your body only repairs tissue while you are in a deep sleep, this is perfect timing. Add blueberries and flax seed oil or meal to either the shake or the cottage cheese. The blueberries send fructose to your liver and the flax delivers healthy fats to the cells.

Remember these simple rules:

Nutrition is essential for optimizing your workout and achieving your goals

- Always eat breakfast.
- Never skip a meal. Eat five to seven meals per day combining slow-digesting carbs, protein and healthy fats.
- Drink a high-glycemic (fast-digesting) post recovery shake after every workout.
- Eat one hour after your shake.

SETTING YOU ON THE RIGHT PATH

In an effort to set you on the right path early and help you achieve your performance goals quickly, we want to offer you a FREE Recovery Shake. Just redeem this coupon at the Juice Bar and let our staff build you the finest, personalized, 100% Crushed Fruit, NO sugar added Recovery Shake on the planet. WORKOUT AND EAT WELL!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