

1-rep maximum (1RM) - the highest resistance you can handle for 1 repetition in proper form for a particular exercise.

1RM is useful for determining your working resistance.

Absorption Rate – often used to compare sources of protein, this is a measurement of how quickly the body can digest and absorb the nutrients. Certain protein sources, like whey isolate, are absorbed quickly, while others are absorbed over a longer period of time.

Activation exercises – not to be confused with static stretching, these dynamic moves are done at the beginning of a workout to prepare your joints and muscles for action.

Additives – various chemicals that are added to food products in order to serve some kind of business purpose. Some additives reduce spoilage (preservatives). Others enhance taste – make foods more craveable.

Most additives are not subject to rigorous testing before they are put into the food supply, and many have been found to be harmful, years after they were first introduced.

If you don't know what a particular chemical in your food is, don't eat it. Research it first, or choose another food instead.

Aerobic exercise – also known as cardio or endurance exercise, aerobic exercise strengthens the heart and increases the muscles' ability to stay active for long periods of time.

After-burn – a spike in energy demands that occurs after a training session. As your body rebuilds and recovers after a workout, it burns more calories than usual.

The degree of afterburn depends on the intensity and duration of the workout.

- Most forms of aerobic (endurance) exercise do not contribute significantly to the afterburn effect
- Strength training and High Intensity Interval Training (HIIT) *do* contribute significantly to afterburn and can raise calorie expenditure by as much as 7% in the 24-hours following a workout

Alignment – when you align your everyday actions with the physiological processes that take place in your body, fitness becomes automatic. You no longer need to struggle and tap

willpower to get into shape. Everything you do and everything you eat support a strong, lean, and healthy body.

Amino Acids – the constituents of protein. When protein is digested, it is turned into amino acids, which are used to repair and rebuild various tissues in the body.

Anabolic State – the metabolic state that occurs during an energy surplus. When the body is in the anabolic state *all* excess fuels are moved into storage:

- Excess glucose is moved into glycogen silos
- Excess Free Fatty Acids are moved into fat cells
- Excess amino acids are moved into muscle tissue.

In the anabolic state, growth happens; muscles get bigger and we gain fat.

ATP (Adenosine Triphosphate) – fuel used by the muscles. Glucose and Free Fatty Acids (FFA) are first converted into ATP before muscles can use them for energy.

The nature of the exercise determines how this conversion takes place.

- Maximum effort for very short duration (1-20 seconds): uses the small amounts of ATP that are already stored in the muscle
- High effort for 20-60 seconds: Muscle glycogen converted into ATP
- High effort for 1-10 minutes: Muscle glycogen and blood glucose converted into ATP
- Low effort for 10+ minutes: Free Fatty Acids (FFA) converted into ATP

Autophagy - a waste removal process in which the body hunts down and disposes of toxins, damaged cell parts, and other unwanted matter. Autophagy helps your body to naturally stop cancerous growths, dampen inflammation, optimize biological functions, and slow the aging process. It is activated during intermittent fasting.

Baseline – In measuring progress, the baseline is the starting point; a snapshot in time that says, “You are here.”

Bioavailability - how much of the protein (or other nutrient) your body can utilize from a particular source. Even though 2 foods may each have 40 grams of protein, your body may be able to use the entire 40 grams from one food but only 15-20 grams from the other.

Various charts, available online, provide bioavailability numbers for protein and other nutrients.

Body Composition – a breakdown of your total weight into fat mass and lean mass.

Body Composition Testing – various tools, such as the BodPod, DEXA (Dual-energy X-ray Absorptiometry) and underwater weighing, designed to provide accurate measurements of your fat mass and lean mass.

Body Fat Percentage – the ratio of Fat Mass to Total Weight. Lower body fat percentage typically corresponds to better health and longevity.

CAFO – Concentrated Animal Feeding Operation. Another name for factory farming, where animals are confined in small spaces by the thousands, or even tens of thousands, to be raised quickly and sold for high profit.

In CAFOs, animals are typically denied access to their natural environments, given GMO feed, and dosed with all sorts of drugs to promote growth and stave off illness.

Caloric Density – a measure of how many calories are in a given amount of food. A cup of spinach contains less than 10 calories, while a cup of Skittles contains a remarkable 830 calories.

By eating too many calorie-dense foods, we run the risk of spending our entire calorie allowance before we get the nutrition we need. See also: *Nutrient Density*.

Calories – a measurement unit that quantifies how much energy is used or how much energy is contained in a particular food.

Note: calories are not a source of energy. The source of energy is the various fuels that our bodies run on. Calories simply *quantify* the amount of energy coming from these fuels.

Catabolic State – the opposite of anabolic state, this is the metabolic state that occurs during an energy deficit. When the body is in the catabolic state *all* excess fuels are broken down and taken out of storage:

- Glycogen is depleted
- Muscle protein is broken down
- Fat is burned off

In the catabolic state, we lose fat, but may lose some muscle tissue as well.

Cellulose – a plant fiber that comes from wood. It is added to boost fiber content in many packaged food products, bread, processed meat, and ice cream.

Unlike the fiber in fruits, vegetables, legumes, and whole grains, that comes packaged with lots of vitamins and minerals, cellulose provides no other nutrition except for the fiber itself. Essentially, it's the equivalent of eating sawdust.

Cholesterol – a waxy, fatty substance found in all cells in the body. Cholesterol is vital to countless functions, including hormone production, brain function, and muscle movement. Without cholesterol, we would die.

Excess cholesterol, often the result of unhealthy lifestyle and processed-food diets, leads to an increased risk of cardiovascular disease.

Circadian rhythms – a natural, internal process that regulates the sleeping-waking cycle.

These rhythms respond to light and dark, and affect your energy levels – higher energy during light hours and lower energy during dark hours.

By matching your daily schedule to natural circadian rhythms in your body, you can maximize your productivity and get the most benefit from your resting hours.

Comfort foods (as in response to stress) – foods that are high in sugars and fats. They stimulate pleasure centers in the brain, eliciting a 'feel-good' response.

Unfortunately, these foods tend to be calorically high and cause us to gain weight.

Rather than turning to comfort foods whenever you're stressed, try to perform some sort of fun physical activity, visit with friends, and set aside some time to mediate and work through the underlying issue.

Commercial fitness information – a marketing tool, usually in the form of articles, that is purposely designed to look helpful and credible, but is really intended to bias the reader in favor of purchasing certain products and services.

Commercial fitness information is not objective. It is designed to promote a business interest, but it does so in a way that flies under most people's radars. As a result, it is easy to be persuaded by it to buy solutions that we don't really need.

Compatibility – the first of five tests in evaluating our food. Many food products originate from the same raw materials, yet take on different forms after processing. Some of these forms are compatible with our bodies, while others are not.

Complex Carbohydrates – carbohydrates that have multiple sugar molecules chained together. They require more energy and more time to digest than simple carbohydrates.

They are also known as starches.

Compound exercises – exercises that engage multiple muscle groups at the same time (i.e. squat-thrusts, pullups, pushups, deadlifts).

These exercises are key to developing maximum strength and conditioning. They also build useable, real-world strength.

Performing compound exercises results in high energy expenditure and high levels of after-burn.

Confirmation bias – Seeking out information that confirms our beliefs, while ignoring bits of information that run contrary to our beliefs. This is a crippling practice where we cherry-pick studies, articles, expert opinions, and even rumors that support our imperfect views just because we want to feel right.

A far more effective approach is to be objective and to collect information from a variety of sources; even those that contradict our views.

De Novo Lipogenesis – the body's own fat-making process, where it takes excess carbs and turns them into fat. This happens when glycogen silos are full and cannot accept any more carbs.

Detox program – a short-term respite from the typical diet, where you consume fresh, organic smoothies, water, and possibly some raw fruits and vegetables.

A detox is not a substitute for a proper weight-loss diet and exercise plan. It is designed to give your body a break from processed foods, reset your palate, and supercharge you with essential vitamins and minerals, which may be severely lacking.

Digestible Carbohydrates – There are 3 types of carbohydrates: sugars, starches, and fiber. Sugars and starches are both digestible carbohydrates as they can be converted into energy and used by the body. They also affect blood glucose levels.

The third type of carbohydrate – fiber – is not readily digested and passes through the body without having much of an effect on blood glucose or energy levels.

Empty Calories – refers to foods that contain calories, but little or no nutrients. Examples include sugar, candy bars, soft drinks, potato chips, popcorn, white bread, artificial fats, and alcohol.

When we eat empty calories, we are essentially wasting our calorie allowance on foods that provide none of the vital nutrients that our bodies need for good health.

End Point – the desired health and fitness goal you are looking to achieve. This is best defined as combination of your:

- target body composition
- ideal health metrics
- desired performance

Endurance exercise – performed with little or no resistance, but engages the muscles for a long period of time (i.e. jogging)

Energy Balance – when the amount of energy that comes in from the foods you eat matches the energy demands of your body. When this equilibrium is achieved, the body is neither storing energy nor pulling energy from storage.

Energy Requirements of Activity (ERA) – The energy needed for physical activity, whether walking, running, lifting weights, or doing the dishes. The more strenuous your activities, the higher your ERA.

Failure (as in pushing to failure) – The point when you can no longer perform another repetition of an exercise in proper form.

Research shows that pushing yourself to failure is not absolutely necessary. You can perform an exercise to the point when you have enough strength left to do 1 or 2 more repetitions, and still get the same benefits.

Fast Carbohydrates – Carbohydrates that digest and break down into glucose quickly. They typically come from processed sources like refined grains, white bread, fruit juice, and sugar, but can come from whole, natural foods as well.

Fast carbohydrates have a high Glycemic Index.

Fast muscle fibers - one of the three muscle fiber types. Fast fibers produce large amounts of force but can be active for only short periods of time. For this reason, they are also known as Power Fibers.

Fast muscle fibers use primarily glucose for energy. They have high growth potential.

Fasted state – occurs when all available energy from your meals has been used up and immediate storage areas (glycogen silos) have been emptied.

Fat Mass – the total weight of fat reserves in your body

Fed State – occurs after a meal. At this time, body is using some of the available nutrients to meet its immediate energy demands, while storing away any excess.

Fiber – A unique carbohydrate that comes from plant sources. Fiber is seldom broken down completely; hence it has no appreciable effect on blood glucose levels.

There are 2 forms of fiber – soluble and insoluble. Soluble fiber has a gel-like consistency. It absorbs other nutrients and releases them slowly over a period of time. Insoluble fiber works like a bristle brush, scrubbing the digestive system of various waste products.

Food chain – a series of links showing which organisms depend on each other for food. Food chains typically start with a plant and end with a predator species.

GRASS → WORM → CHICKEN → FOX/WOLF/MAN

Food-like products – refers to the thousands of items developed by the Food Industry. These items may be made from natural ingredients, but the way they are processed removes most of the vitalizing nutrients and often introduces harmful chemicals.

Food-like products, such as candy bars, sodas, ice creams, chips, and countless other snack foods, may taste delicious but they are not a substitute for real, natural foods that our bodies are designed to run on.

Free Fatty Acids (FFA) – come from the breakdown of fat. These can provide fuel for most tissues in our bodies, but not all. The brain, central nervous system, red blood cells, and certain muscle fibers cannot use Free Fatty Acids.

Fructose – fruit sugar. Present in varying amounts in fruits and vegetables, this natural sugar is perfectly healthy when it comes in the form of whole foods.

Refined fructose – found in table sugar, fruit juice, sports drinks, high-fructose-corn syrup, and other sweet food products – is not recognized as a suitable fuel by the body. It is processed in the liver (like alcohol) and large portion of it ends up as body fat.

People who consume fructose regularly have higher rates of visceral fat storage and a greater propensity for developing unhealthy liver function.

Glucagon – the opponent of insulin, glucagon is the ‘retrieval’ hormone. It tells the body to break down stored fuels during an energy deficit.

When blood glucose levels dip below an acceptable level, glucagon is released and instructs the body to retrieve stored fuels.

Glycogen is converted back into glucose. Muscle protein is broken down into amino acids. Stored fat is broken down into Free Fatty Acids.

Gluconeogenesis – literally: new glucose production.

When carbohydrates are restricted or absent from the diet, and the body’s glucose demands are not being met, this backup mechanism produces glucose from either stored fat or stored protein through a series of biochemical reactions.

Glucose – the most basic form of sugar, glucose is the only type of carbohydrate that our bodies can use for energy.

All carbohydrates (with the exception of fiber), break down into glucose, which can then be used by all tissues in the body.

Gluten – one of the proteins found in wheat. When mixed with water, gluten becomes strong and stretchy, giving structure to baked goods.

Because modern wheat has been hybridized so many times, tens of thousands of new gluten varieties have been created. Many of these gluten varieties are not recognized by the body and are treated as ‘intruders,’ triggering allergic reactions.

Glycemic Index – a system that ranks carbohydrates based on the extent to which they raise blood glucose levels.

Foods that score high on the Glycemic Index are typically simple carbohydrates, like white bread, sugary snacks, and cereals, which are digested very quickly, causing spikes in blood glucose levels. Low Glycemic foods, on the other hand, are absorbed slowly, providing a stable supply of energy for the body to run on.

The index can be found by visiting FitAFbook.com/glycemic

Glycogen – the storage form of glucose. When carbs are digested, they are turned into glucose to power the body. Any unused glucose is converted into glycogen and stored for later in the liver and muscles.

Hack – any of a number of gimmicks peddled by the fitness industry that promises to give you faster/cheaper/easier results than are otherwise possible.

More often than not, hacks lead you to waste time on things with no lasting results, which is why it is best to ignore them and to focus your efforts on proven principles.

Health Metrics – various health-related indicators, often measured with simple blood tests, such as cholesterol, micronutrient levels, thyroid levels, etc.

High fructose corn syrup – an artificial sweetener made by extracting fructose from corn. It contains roughly equal parts glucose and fructose. See also: *Fructose*.

High Intensity Interval Training (HIIT) – alternates short bursts (30-60 seconds) of all out intense activity with equal or longer periods of rest.

This sort of training activates afterburn and has a profound effect on fat loss. Because of the hormone changes it triggers, HIIT is particularly effective at burning the last few stubborn pounds.

Hypertrophy – when muscles are ‘stressed’ by intense physical activity, such as weightlifting, they develop small tears, which are then repaired during rest and recovery. The combination of stress and repair leads to muscle growth. This is known as hypertrophy.

Insulin – *The* storage hormone, insulin works like a messenger telling the body to store away excess fuels.

Insulin is triggered when blood glucose levels rise beyond an acceptable level. When that happens, insulin tells the body to move excess glucose into the muscle and liver storage silos.

As that’s happening, other nutrients are stored as well. Free amino acids (the constituents of protein) are assembled into larger protein chains and moved into muscle tissue. Extra dietary fat is moved into fat cells.

Insulin Resistance (as ties in to HIIT cardio) – When the body does not respond well to insulin, requiring more insulin to be released in order to move glucose from the blood into storage silos. Since insulin is the ‘storage’ hormone, high levels of insulin mean higher levels of fat storage.

Certain form of exercise, like HIIT cardio, improve insulin sensitivity; in other words, they lower insulin resistance. Since lower amounts of insulin are now needed to do the job, fat storage is diminished.

Intermediate muscle fibers - one of the three muscle fiber types. Intermediate muscle fibers produce moderate force and can be active for a moderate amount of time.

These fibers can use either Free Fatty Acids (FFA) or glucose for energy. They have moderate growth potential.

Isolation exercises – exercises that focus on a specific muscle or a small group of muscles (i.e. bicep curl, forearm curl, triceps extension).

These exercises are useful when you want to fine tune a particular area of your body.

Lean Mass – the total weight of everything that is *not* fat in your body

LISS (Low Intensity Steady State) Cardio – a form of endurance exercise done at lower levels of resistance and at a steady pace.

When LISS cardio is performed in the fasted state, it forces the body to burn stored fat for energy.

Long time perspective – taking the long-term future into account when making decisions. Research shows that this mental attitude is key to achieving success, and that the longer the period of time taken into account, the more likely a person will achieve greatly.

When it comes to health and fitness, long time perspective is one of the best philosophies you can adapt. Decide that you have a long time ahead of you, and take the sort of action that will benefit you in the long term. Ignore short-term promises and get-fit-quick schemes.

Macronutrients / Macros – the 3 energy-containing nutrients in our food: fat, protein, and carbohydrates.

Fat provides 9 calories worth of energy per gram

Carbs and protein each provide 4 calories worth of energy per gram

Metabolic Resistance Training (MRT) – an advanced form of training that High Intensity Interval Training with strength exercise.

These workouts are designed by stacking strength exercises back-to-back and adding short bursts of cardio in between.

MRT leads to high energy expenditure and is up to 9 times more effective at burning fat than traditional cardio. It also builds strength, develops muscle size, increases endurance, and strengthens the heart.

Micronutrients – vitamins and minerals which are needed in small amounts for healthy function

Neural factors - Synchronization between your muscles and the nervous system, which signals how your muscle should contract and which supporting muscles should be involved.

Neural factors are responsible for initial strength gains in beginners and untrained individuals. Subsequent strength gains come from an increase in muscle size.

Nitrosamines – form when nitrites combine with amino acids in meat products in the presence of high heat. Even without heat, nitrosamines can still form in the acid conditions present in the stomach.

These chemicals are carcinogenic and increase the likelihood of developing colon cancer.

Avoid them by minimizing or eliminating your consumption of processed meat products.

Nutrient Density – a measure of how many nutrients are contained in a particular food. Two foods can each have 150 calories, but one will be loaded with nutrients while the other is nutritionally worthless.

Nutrient density allows us to compare foods so we can maximize the nutritional value that we get from our daily calorie allowance.

Performance – a measure of your ability to perform various fitness-oriented activities (i.e. number of pushups you can do, how many flights of stairs you can climb).

Refined Food – a processed product created by extracting something from something else. See also: *Refining*.

Refining – a form of processing where something is removed from something else; removed from the whole. In the case of white flour, for example, the starchy carbohydrate is removed from the whole grain.

Refining concentrates things into small form and it also make products lighter. This makes it much easier to overeat and take in way more calories than we need.

Resting Metabolic Rate (RMR) – Also known as your Metabolism, this is the energy needed to keep you alive, even if sit or lay motionless all day long.

This energy powers your cells, organs, and all vital functions.

It makes up the greatest portion of your total energy expenditure, accounting for 60-60% of your daily energy needs.

Simple Carbohydrates – carbohydrates that contain only one or two sugar molecules, as opposed to complex carbohydrates, which can contain hundreds or thousands of sugar molecules strung together.

Simple carbohydrates are digested quickly and tend to raise blood glucose much faster than complex carbohydrates.

They are also known as sugars.

Slow Carbohydrates – Carbohydrates that take a longer time to digest and have a less drastic effect on blood glucose levels. These typically come from natural foods, like whole grains, legumes, and vegetables.

Slow carbohydrates have a low Glycemic Index.

Slow muscle fibers – one of the three muscle fiber types. Slow fibers produce little force but can be active for long periods of time. For this reason, they are also known as Endurance Fibers.

Slow muscle fibers use primarily Free Fatty Acids (FFA) for energy. They have limited growth potential.

Sodium nitrite – also known as E250, this additive is used as a preservative in meat products and other processed foods. It's tasteless and odorless, but when combined with amino acids, produces nitrosamines, which have been proven to cause cancer. See also: *Nitrosamines*.

Storage Silos – the body has a number of reservoirs, or silos, where it stores excess fuels. Extra carbs are converted into glycogen and stored in the muscles and liver. Extra Free Fatty Acids are converted into triglycerides and stored in fat cells. Extra Amino Acids are converted into protein and stored in muscle tissue.

Strength exercise – the type of exercise that requires you to exert a large amount of force, but for a brief period of time (i.e. weightlifting)

Sucrose – the scientific name for table sugar. Sucrose is a disaccharide, or double-molecule sugar. It contains one molecule of glucose and one molecule of fructose.

Tape Measurements – circumference measurement of specific parts of the body, such as biceps, thighs, and waist. These measurements help you track progress over time and see how various parts of your body respond to a diet or exercise program.

Thermic Effect of Eating (TEE) – This is the energy required to digest food. When we eat food, we don't get all the energy it contains; a portion is lost to digestion.

- Protein has a TEE of approximately 25%, which means that for every 100 calories of protein we eat, we only get about 75 calories worth of energy. The other 25 calories are burned to help us digest it.
- Carbs have a TEE of 15-20%
- Fat has a TEE of 3%

Your total daily TEE will vary based on the composition of your meals, but it is typically estimated at 10% of your Total Daily Energy Needs.

Timeline – The approximate amount of time it will take you to achieve your End Point (fitness goals).

An accurate timeline will keep you (1) from quitting too early, before any visible progress is made, and (2) from doing the wrong things for too long, without realizing they aren't working.

Total Daily Energy Requirement (TDEE) – The total energy that your body requires. It is the sum of 3 parts: Resting Metabolic Rate, Energy Requirements of Activity, and Thermic Effect of Eating.

TOTAL ENERGY REQUIREMENT = Resting Metabolic Rate (RMR)
+ Energy Requirements of Activity (ERA)
+ Thermic Effect of Eating (TEE)

Total Weight – your total weight is the sum of your Fat Mass and Lean Mass. This is the number you see on a typical scale.

Trans fat - artificial forms of fat, produced by infusing vegetable oils with hydrogen

gas. These fats, which are solid at room temperature, were developed by the food industry to replace butter.

Trans fats raise your LDL (bad) cholesterol, increase triglycerides (fats) in the bloodstream, and lower your HDL (good) cholesterol. This, in turn, increases your risk of coronary artery disease and stroke.

Often called margarine, shortening, hydrogenated oil, and partially-hydrogenated oil, trans fats are some of the most dangerous additives in the food supply.

Triglycerides - the storage form of Free Fatty Acids (FFA). When fats are digested, they are turned into Free Fatty Acids to power the body. Any unused Free Fatty Acids are converted into triglycerides and stored for later in our fat cells.

Vision board – a collage of photos, words, phrases and ideas that clarifies your goals and serves as a visual reminder of what it is you're after.

When your goals are clear and your reasons for wanting to achieve them are strong, it is much easier to persevere than when your goals are vague and your reasons are weak.

A vision board can be a powerful tool, propelling you towards the outcome you designed.

Whole Food – a food that has all of its edible parts still intact. An apple. A whole grain. A sweet potato. A mackerel.

Minimally processed items may still quality as whole foods, as long as nothing nutritious has been removed from them.

Working resistance/working weight – the level of resistance that typically engages all fibers in the muscle, leading to maximum muscle development, glycogen depletion, and after-burn.

It is calculated by multiplying your 1-rep maximum by 80%. See also: *1-rep maximum*.