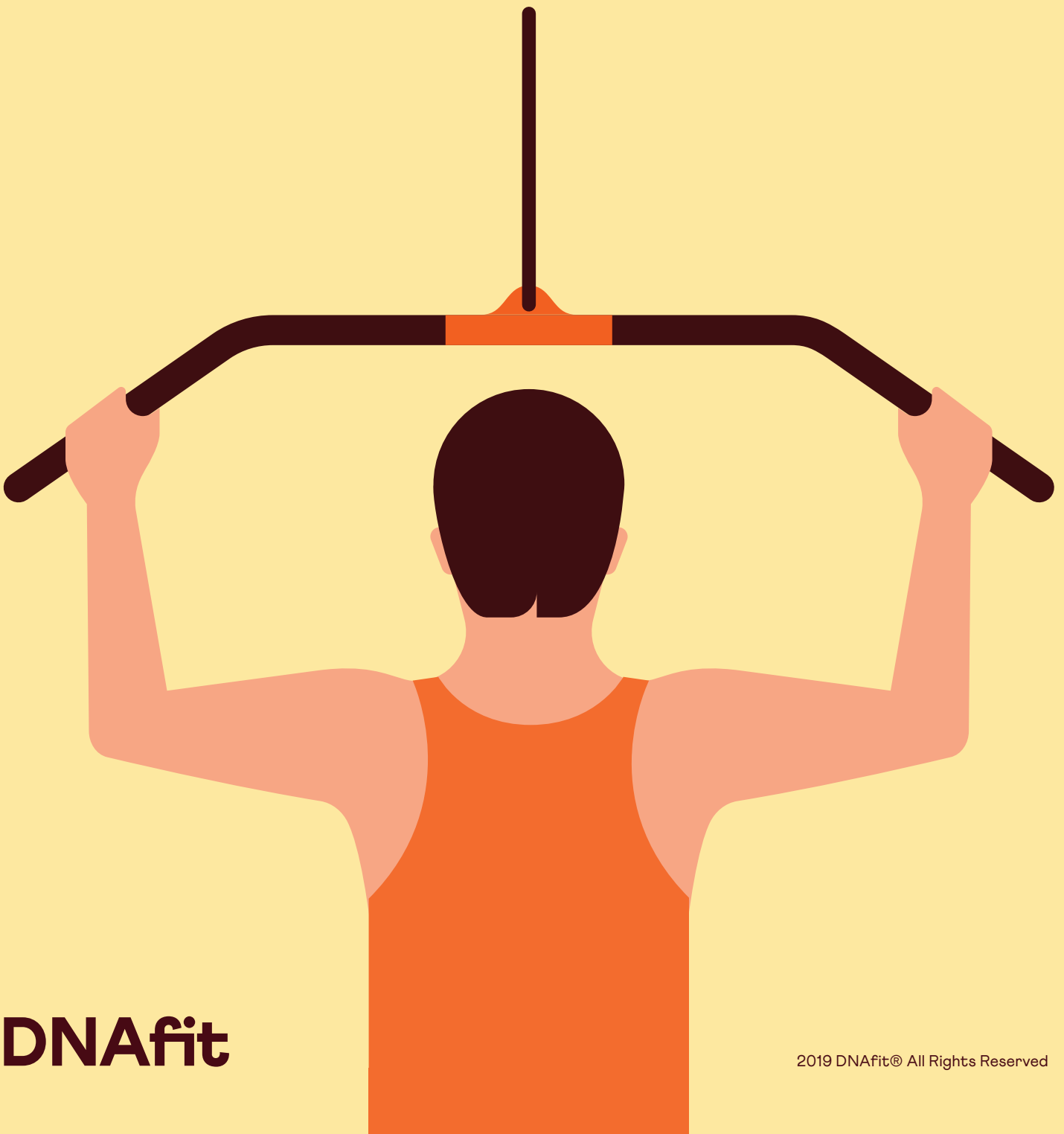


Optimising Your Gym Workout

Expert advice from pre-workout tips and what to do after you exercise, to supplements, diet and nutrition.



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Sometimes, you struggle to reach your fitness goals despite working out every day and following a strict exercise routine. This can be extremely frustrating after hours of blood, sweat and tears in the gym.

Often, a lack of results can be fixed with a few small lifestyle changes. Perhaps you're not getting the right nutrition to build muscle and bulk up, or maybe you're doing the wrong exercises to lose weight.

Whatever your fitness goal, you want to get the most out of your gym workout - and we can help!

We've put together this guide, with the help of our sport scientists and dieticians, to help you optimise your entire process from pre to post workout. By following these simple tips, you can achieve the results you've always wanted.



Chapter 1

The truth about fitness fads

Visions of the ideal and illusions of the real. Fads usually come and go at an alarming rate. It's important to know the difference between a fad and a trend.

A trend is an approach to fitness and exercise that works. It changes the way we approach fitness and exercise. "The core-conditioning example shows perfectly the relationship between fitness fad and fitness trend," writes Breaking Muscle.

But, along with this trend, there was also a rise in fads which appeal to people's need for instant gratification. Many people want results right now.

They're often unwilling to accept that, especially when it comes to fitness, progress takes time and results don't come with a lack of effort. They are duped into believing that "8 Minute Abs" and equipment like the "Ab Roller" are as effective as doing crunches or a yoga class. This is the epitome of how a fad branches out from a trend.

So, what works and what doesn't?

We've put together a few more examples to help you distinguish between trends and fads.

What works?

First, we'll take you through a few examples of fads that became trends. These things work because the people who created them were (and still are) dedicated to helping people and expanding the industry.

You may remember Billy Blanks, who generated excitement in the housewife community with the introduction of Tae Bo. It may seem like a gimmick, but there's no denying that it is a full body workout that makes cardio fun. It also teaches you a few basic fighting skills that you hopefully won't ever have to use.

Video games have been criticised for contributing to the sedentary lifestyles that many people lead. Wii Fit, however, got people off the couch and actively involved in their games. Perhaps it isn't too effective as a workout, but it coerced even the laziest of people to get moving.



You can't go wrong with wearable technology. Sure, there are questions about their ability to track everything perfectly but, they keep wearers motivated. These devices encourage people to dedicate themselves to reaching their goals. As the technology progresses, we'll see wearable technology become more precise.

The group training movement culminated in the boot camp-style training, CrossFit. You may have heard stories about how tough it is, how it challenges you and how it gets you in shape. The truth is, none of it is a lie. It's an extremely tough, physical challenge but the results and rewards are unparalleled. And, by the looks of it, it's very addictive too.



Anti-Gravity Yoga may seem like a bit of an “out there” concept but don't be fooled... This is taking yoga to the next level (literally). People use a sturdy piece of material and their innate body strength to mix yoga, acrobatics, gymnastics, and pilates. It's an all-in-one type workout, for an insurmountable level of core strength.

What Doesn't Work?

Fads that don't work often correlate to a trend, offering the easy way out. Unfortunately, fads have a limited shelf life because after a while they get found out, people move on to the next big celebrity-endorsed thing.

Forbes highlight Curves as an example of a fad that had the possibility of working, if only it had a stronger business plan. Unfortunately for Curves, they didn't look further forward than attracting people who had never trained before. It's considered a fad because it didn't have an answer for people after they got themselves fit and active. There was no next step, no levelling up, and no progression – which is the point of fitness. So, a fad can be fun but it can also distract you from the point of exercise and fitness.

The Shake Weight may have caused a few laughs, but loads of people have bought it. It's lightweight and offered no real resistance training, and therefore disappointed people when they realised they couldn't build muscle.

Power Balance bands were hit with a lawsuit in 2011 when it came to light that the holographic visuals were all a ruse. These omniscient bands were, in fact, cheap gimmicks that preceded the wearable technology boom.

It may feel weird and jiggly, and like something is happening, but there is no evidence that vibrating platforms offer any value in terms of toning or losing weight. If anything, the most you'll get out of them is an injury, when your legs turn to jelly and you lose your stability.

More often than not they can actually be counterproductive. Whenever you're about to buy the latest fitness product, you should speak to a trusted professional or do your own research. This is the best way to determine whether or not it will be worth your time and money.

The problem with these fads is that they masquerade as helpful ways to improve your workout.



Chapter 2

How to reach your peak performance

What do athletes do in terms of their fitness and nutrition, to reach their peak performance level and stay on top of their game?

We asked one of our DNAfit sports scientists for some advice.



Fitness testing

Most athletes use fitness testing to gain insight into their strengths and weakness. This is done by comparing your results to other successful athletes in your sporting code. Not only can you spot which areas you can improve, but it also helps monitor your progress over a period of time. For non-athletes looking to measure their own results, this is important for continuous improvement, which is critical for success.

Conditioning

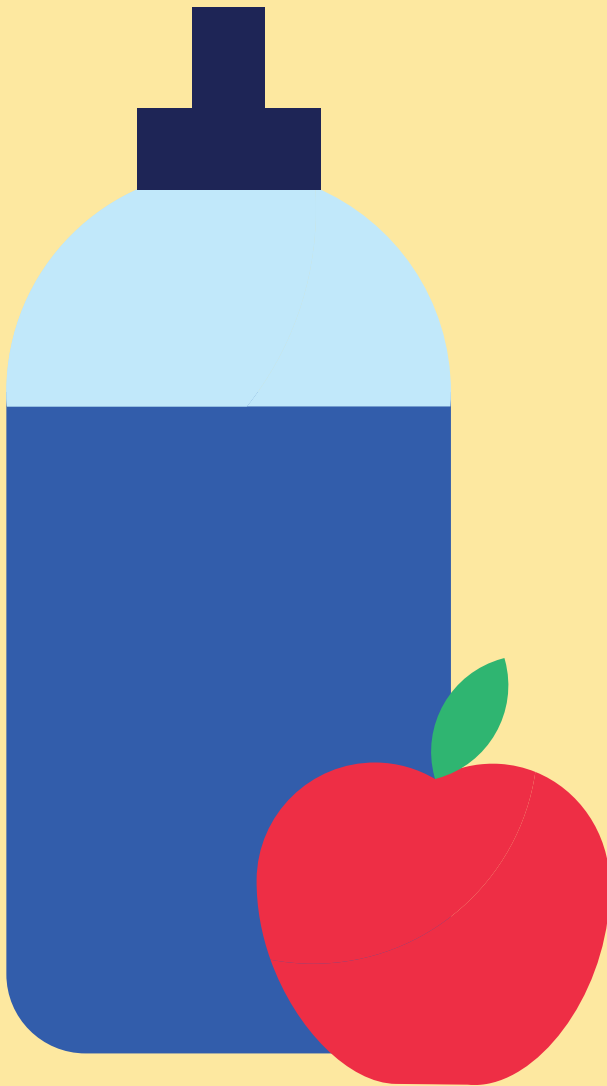
It's important to have a proper training plan in place. This gives you control over your training, and helps you improve your performance. For example, amateur footballers often focus on skills and endurance performance. They tend to neglect other fitness elements such as strength, speed, power, agility and flexibility, all of which contribute to becoming an elite footballer.

Look at your current training plan. Identify where your efforts are wasted and where you can improve. Remove drills or exercises that don't lead to any steady or incremental improvements in your performance.

Are you eating quality, beneficial food or consuming things that interfere with your performance? A balanced diet is crucial in maintaining performance levels.

Food provides you with nutrients to achieve your optimal performance. Choose whole foods which help fuel your body, rather than processed foods that delay your recovery time or have a negative impact on your performance.

Healthy nutrition should provide you with enough micro and macronutrients to meet the demands of training and exercise. It should also enhance your adaptation and recovery between training sessions.



Include a wide variety of foods like whole grain breads and cereals, vegetables (particularly leafy green varieties), fruit, lean meat and low-fat dairy products. You'll also need to drink adequate fluids to ensure maximum hydration before, during and after exercise.

Cross training

Have you seen cricket players play football or volleyball? That's a bit weird, right? Maybe on the surface, but cross training can be beneficial to your performance.

Cross training allows you to vary the stress placed on specific muscles. This conditions your muscle groups to react in different ways, to different training methods. It also allows you to develop a new set of skills and reduce the boredom which occurs after months of the same training plan.

Adaptation can also benefit your cardiovascular system and aerobic capacity. A runner, for example, who uses swimming and cycling to help improve his overall fitness and aerobic capacity, builds strength and prevents overuse injuries. These activities train different muscle groups in a different manner than running would do. So don't box yourself into one type of training plan. Try new things and expand your skill set, to maximise your success.

Injury management and prevention

Monitoring your training load is crucial to see what works best for you. It will also help you avoid and even prevent injuries. Most athletes have a trainer or sport scientist who helps monitor their training loads, fatigue levels and recovery time. This helps them reduce overtraining or burnout, which might increase injury risk and affect the athlete's performance.

You can monitor your own training through athlete monitoring apps or software such as FITSTATS performance. By effectively managing your loads, you'll be more likely to find your optimum training method.

Exploring your genes

Genetically-matched training is three times more effective than traditional, mismatched training. It's used by professional athletes around the world, including Olympian Greg Rutherford and Barcelona FC football players.

Genetic tests for fitness and nutrition help you find a nutrition and training regimen that's suitable to your genes.

By understanding your genetic response to diet and exercise changes, you'll be in a better position to leverage your body's strengths to your advantage. It can also help with injury prevention and recovery.

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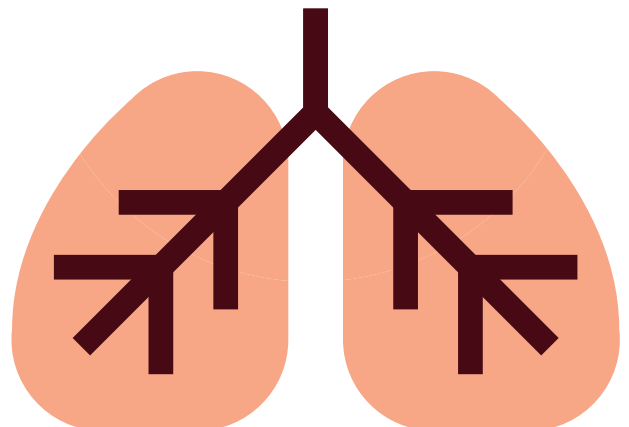
A simple DNA swab test can tell you things such as:

- What nutrients you can and can't digest
- How you absorb and metabolise macro and micronutrients
- How you process toxins
- How your body reacts to different types of exercise
- Your tendency to gain weight
- Your VO2 max potential
- Your injury risk
- Your recovery response

Following a personalised diet and exercise plan, which helps you eat and train right for your genes, will unlock your health potential. This helps you achieve your fitness goals faster in the short-term. It also leaves you healthier (and better equipped to fight disease) in the long-term.

Start my genetic journey today

Discover Body Fit



Chapter 3

How to reach your peak performance



You're training hard and doing a great job. Increasing your athletic ability, building muscle fitness and focusing heavily on training - but you're seeing minimal gains. Why is this happening to you? We all get discouraged when a heavy training regime brings us little to no results.

Well, fear no more because we're here to teach you some common mistakes which could be sabotaging your muscle building efforts.

Not eating enough

Nutrition plays a massive role in training. It takes time, but you need to prioritise eating. No, you aren't going to get fat...

When you're training, the nutritious food you're eating isn't going to be converted into fat. Instead, it becomes energy to burn during those intense sessions, which helps you build lean muscle. Increasing the size and frequency of your meals, with a diet that's conducive to muscle growth, helps you achieve your goals faster.

Doing too much too early

Aim for slow, steady progression. This ensures that you see gains at every stage of your muscle building journey. You'll also be less likely to pick up injuries, which are extremely damaging to your fitness goals.

Be patient. Don't try to do too much, too early.

Not doing the right exercises

You need to do the correct exercises to build muscle across the board. The most important exercise to do is squats. Squats work the entire body and, if you manage your loads correctly, they'll become your best friend (even though you'll be a little stiff the next day). Other important exercises to do, when your goal is building muscle, are deadlifts, leg presses, bench press, dips, rows and chin-ups. These all test the body's limits and make it stronger, from your core outward.

Lazy gym sessions

Don't fool yourself, at some point or another even the most dedicated fitness fanatics can lose their motivation. As obvious as it may seem, to continue to build muscle you need to stay dedicated. If you need some inspiration, try a new programme (and stick to it), meet like-minded people and include rest days in your routine. Staying focused to your goal is the only way you're going to achieve results.

Too many supplements

Taking a course of supplements which focus on building muscle is fine. However, don't underestimate the value of real, whole food. You need to take understand the role of a balanced diet in relation to your fitness goals. Consult a dietician to find out what will work for you.

**Alcohol lowers metabolic rate of the body**

As relaxing as it may be, that Friday night out may be hindering your progress. Alcohol not only affects your testosterone levels after exercise, but it lowers your metabolic rate. This means that your body won't be able to use its energy the way it should and you won't see any significant results. It's also not easy to worry about optimum fitness and high level workouts if you're nursing a hangover, but that should go without saying.

Not pushing yourself enough

If you want to build muscle, but have reached a stage where you're moderately happy with your body, you may not be pushing yourself as much. This is where people tend to either plateau or kick things up a notch. If you're serious about building muscle, you need to take your workout to the next level. If you're comfortable with certain weights then you need to lift more. You shouldn't make yourself so uncomfortable that you put yourself at risk of injury. Just enough to challenge yourself, and push yourself closer to your long-term goal.

Following the crowd

Finding out what works for you is crucial if you want your training to be effective. There's no-one-size-fits-all when it comes to diet and exercise. Some of us gain weight just looking at a slice of pizza, others can snack on fast food and still be in the top shape.

Your body has its own needs. These could be vastly different to everyone else you workout with. You could need to eat more, or give yourself a longer recovery time between training sessions. Just because Joe Soap trains every day, doesn't mean that's going to help you reach your goals.

This depends on both your lifestyle and your genetics. Genetic testing for fitness and nutrition is popular amongst athletes as it can give valuable insights into your unique nutritional needs. It can also help you maximise your fitness potential.

Chapter 4

Should you eat before or after your workout?

It's often debated whether you should eat before or after a workout. Which gives you the best chance to reach your goals?

Exercise is only truly beneficial when coupled with a perfectly balanced diet. In order to balance your diet, you also need to know when to eat. This depends largely on your goals. If you have very specific goals (such as weight loss), consulting a dietician or nutritionist is the best way to establish the right eating plan for your needs.



For those simply looking to stay fit and healthy, while building muscle, here's a brief overview of the research around a nutrition plan to compliment your training.

Pre-workout meals

Eating something, especially if you need that energy boost, is fine, but it isn't 100% necessary. Many gym-goers use a method called fasted training. They train their bodies to rely on its fat stores to burn as energy. This is especially true for those of us who work out in the morning, and are just not that hungry when we wake up.

If you do prefer a bite to eat before your workout, it shouldn't be too heavy.

Studies show that having a pre-workout supplement can improve agility, reaction time, and performance, while reducing fatigue. This is especially important when it comes to the glucose, fructose, and caffeine that add to your endurance.

But it's not all about supplementation.

Food provides you with that much needed boost, without leaving you feeling lethargic and drained. Here are some foods which will positively impact your routine:

- Bananas and almond butter provide you with essential fats and carbohydrates to keep your energy levels high.
- Oatmeal with berries are a light meal that fill your body with antioxidants and give you a much-needed boost.
- Sweet potatoes (in a small amounts) provide you with an adequate concentration of vitamin C.
- Fruits and vegetables, which are formed of fibrous carbohydrates, are harder to break down and so don't spike our blood sugar too much.

Post-workout meals

Your workout depletes your energy stores. You'll need to refuel to help your body recover faster. This is especially true for morning workouts because your body needs energy to use throughout the day.

For the best results, try to include all of your macronutrients: protein, carbs, and fats.

Research shows that insulin (an anabolic shuttling hormone) also has an important role post-workout. It moves sugar and amino acids to your muscle cells, where they can be either stored or utilised. This means it's important to replenish your glycogen. Your post workout meal should therefore include a healthy intake of high glycemic carbs (fruits and vegetables).

Protein is the most important macronutrient when it comes to training, but it doesn't necessarily follow a dedicated timeline. Your protein intake over the course of a day (both before and after training), not specifically protein after exercise, is important. Muscle protein synthesis can be elevated for 48 to 72 hours after training, so your protein intake needs to be high for the duration of this time.

Inflammation is very likely to occur following an intense workout. To reduce this, it's important to get enough omega-3 fatty acids (found in oily fish, nuts and seeds as well as grass-fed meat). If you're training regularly, then your body might not be able to recover sufficiently from constant inflammation, without a little bit of help. You can take an omega-3 supplement if you're unable to get enough of it from your diet.

Inflammation and oxidative stress can also be counteracted by antioxidants. Berries (which contain antioxidants) are easy to mix into your post-workout shake, added to salads or even added to Greek yoghurt – which is rich in protein. Here's a few more foods to consider for your post-workout meal.

A whey protein shake, with banana, for those added recovery benefits from potassium

Steamed vegetables and skinless chicken breast

A bowl of quinoa with black berries (a great one for vegans!)

- Salmon with mashed potato

So there you have it, it's easy enough to follow. The key takeaways are:

- Don't eat too much before you work out. It'll leave you feeling bloated and may do some devilish things to your digestive system. Remember to eat something small – even if it's just an energy bar.
- When it comes to post-workout meals, there are different schools of thought.
- A healthy meal replacement shake (with adequate nutrients) followed by a balanced diet throughout the day, should help you achieve your fitness goals.



Chapter 5

10 foods that help you get more out of your workout

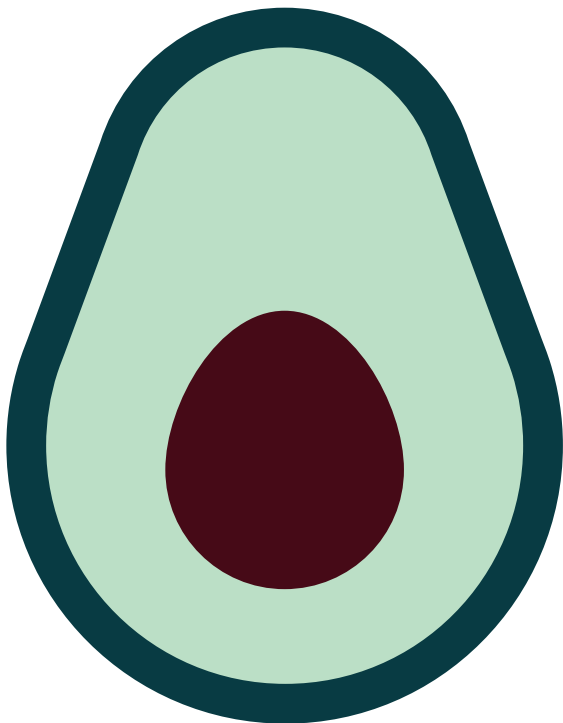
Complementing your workout with a healthy, balanced diet is the best way to achieve the results you want. We've compiled a list of nature's 'superfoods' to include in your diet on a regular basis.

These foods are packed with vitamins and minerals, and are essential for everyone's health and vitality.

Salmon

Bring on the sushi! Salmon not only tastes amazing, but satisfies our muscle-building protein and omega-3 needs which aid recovery. This oily fish also contains vitamins B12 and B6.

Salmon is perfect for athletes because it's light and doesn't leave that bulky feeling you get from the likes of steak. You can have it with any meal, as it can be prepared in a variety of ways.



Avocado

Avocados are nutrient dense, high in fibre, folate, potassium, vitamin E, magnesium and monounsaturated fats. They also taste divine.

They're easily integrated into your meals as either a main or supporting ingredient (guacamole is an excellent dip). It's creamy and can be spread over just about anything or eaten alone.

Nuts

Everybody's going nuts for nuts...and for good reason. Nuts (such as walnuts, Brazil nuts and almonds), are nutrient dense and contain essential fats, protein, fibre, vitamins and minerals. They're great for bone health and recovery. Nuts are an easy snack to have on the go, before or after workouts. You can snack on a handful of them during the day, with some dried fruit, or add them to your breakfast smoothie.

Sweet Potato

The sweet potato chip is taking the world by storm. They're a starchy vegetable (the good kind of carbohydrate), and work as a powerful antioxidant. Studies show that athletes load up on sweet potatoes as they're an excellent source of vitamins A, C and B. Healthy muscle functions also depend on manganese and copper, minerals that you'll find in a sweet potato.

Tip: Try adding salmon to rye bread with some avo, for a delicious and nutritious meal.

Spinach

Although Popeye may have exaggerated the immediate benefits of spinach, it really is a power food, packed with nutrients. It's still metabolically active and fresh, even under the lights of the grocery store, and not only fights inflammation but cancer, too. Spinach contains carbohydrates, fibre, protein, calcium, folate, iron, magnesium, phosphorus, potassium, thiamine and vitamins A, C and K. That's a long list of important macro and micronutrients wrapped into a single, leafy green.

Bananas

Bananas are the perfect workout snack, because they contain potassium. Potassium is one of the main electrolytes which are easily lost through sweat. They combat the build up of lactic acid in your body, and give you stamina to keep going and going! If that's not enough to convince you, bananas are convenient to have on the go. Marathon runners often eat bananas before and after the race!

Whether you eat them on their own, add them to your smoothies or slice them onto your nut butter toast, bananas are an athlete's best friend.

Eggs

Eggs are high in protein, vitamins and minerals. Both the egg yolk and whites are rich in nutrients, however, the whites in particular are very popular for bodybuilding. The egg white contains more than half of the protein in the egg, as well as vitamins B2, B6, B12, D, copper, iron and zinc. In the yolk, you'll find cholesterol and fat soluble vitamins A, D, E and K.

Eggs are inexpensive, simple to make, and very versatile. They can be eaten in salads, on sandwiches, toast or on their own. You can enjoy them boiled, scrambled, poached or fried. Some people even eat them raw!



Quinoa

Quinoa is a sprouted seed and, simultaneously, a whole grain. Grains fall into the category of unrefined carbohydrates (the healthier option). People who eat sufficient whole grains have a reduced risk of heart disease, diabetes, and cancer.

Quinoa contains all nine essential amino acids our bodies need to build lean muscle and recover from tough workouts. You can also eat it in nearly any form - from it being a breakfast cereal to a replacement for pasta.

Oats

Oats are often referred to as “the breakfast of champions” - so it’s no surprise that they made the list. You’ll probably remember eating oats as a child. This is because they are extremely nutrient rich. Children are highly active and need to be able to concentrate during the day. The same applies to athletes.

Like quinoa, oats are an amazing source of unrefined carbs. They’re also high in fibre. They keep you full for longer and have a low glycemic index that promotes a slow and sustained release of proteins into the bloodstream.

Chocolate Milk

Surprised to find chocolate milk on a list of superfoods? Don’t be. When you think of chocolate milk you, you probably think of sweet milkshakes that surely don’t pack that much power. However, chocolate milk acts as a recovery beverage. It provides minerals such as sodium and casein that are important when your body needs to recuperate spent energy.

This list of superfoods obviously excludes those of you who may be allergic to certain superfoods. This is where DNAfit comes in; to solve your problems. Our DNA test and reports speak to you on a more personal level, highlighting what your body requires. Your genes hold the secrets and DNAfit has the answers.



Chapter 6

Why aren't you bulking?

“Bulking” is when your primary goal is building muscle, gaining weight, increasing strength, or all of the above. During this time, your calorie intake is increased.

The trick to bulking is gaining as much muscle as possible, while still controlling your fat gain. If you start eating 6000 calories a day, for example, you may gain a little more muscle than eating 3500, however your fat gain would also be massive. Bulking is the art of eating just the right amount of calories for your body to build muscle, nothing more, nothing less.



Focus on quality over quantity

It's not enough to simply eat more because many of these calories will become fat. If you're having trouble bulking, the solution could lie in what you're eating as opposed to how much.

You should always aim for a balanced diet made up of mostly whole foods. Try to choose unrefined carbs, fats and protein. Avoid saturated fats (such as butter or coconut oil), refined carbs (such as white bread), junk food (such as crisps and sweets) and drinks that are high in sugar.

When bulking you should also adapt the way that you train. Bulking requires “old-school” workouts, where you perform every set of a single exercise before advancing to the next exercise. You should also rest for one to three minutes in between sets, so that your body is fully recovered before you go again.

Too much cardio

As healthy as it is, cardio isn't conducive to bulking. It's better suited to building a leaner, more cut physique, as you lose both fat and muscle when performing cardio. If weight loss is your goal then you should always include cardio into your workout, but it's not an important focus when it comes to bulking.

Training too much and not leaving time for recovery

Don't fall into the trap of thinking that you need to lift heavy weights all day, every day. Building muscle takes time. You need to be mindful that you won't be able to efficiently bulk if you are not recovering properly. Without rest, you eventually may not be able to train due to fatigue, injuries and DOMS (delayed onset muscle soreness).

It's also important to remember that muscle grows during the periods of recovery following training. Overtraining prevents this from happening. Try to support the recovery process by eating correctly, getting enough sleep, warming down and employing methods such as foam rolling or heat therapy to offset muscle soreness.

Not warming up before training sessions

Warming up may feel time consuming, but it's vital to your training. Performing dynamic stretches before you train prepares your muscles for the physical exertion to come. This reduces your risk of injury and allows you to train harder.

Approach exercising the same way you would approach sports. You can't perform at your peak going from stationary to highly active in the game. Instead, you need the correct preparation beforehand.

You aren't training to your genetics

Your genetics play a role in fitness. Every one of us falls on a spectrum, from responding better to power exercises, to responding better to endurance exercises (or a mix of the two).

People with a predisposition to power exercises benefit greatly from sets with a lower number of reps, but higher amount of weight. People with a predisposition to endurance respond better to a higher number of sets with lower weight. By discovering where you sit on this scale, and training accordingly, you'll see the best results.

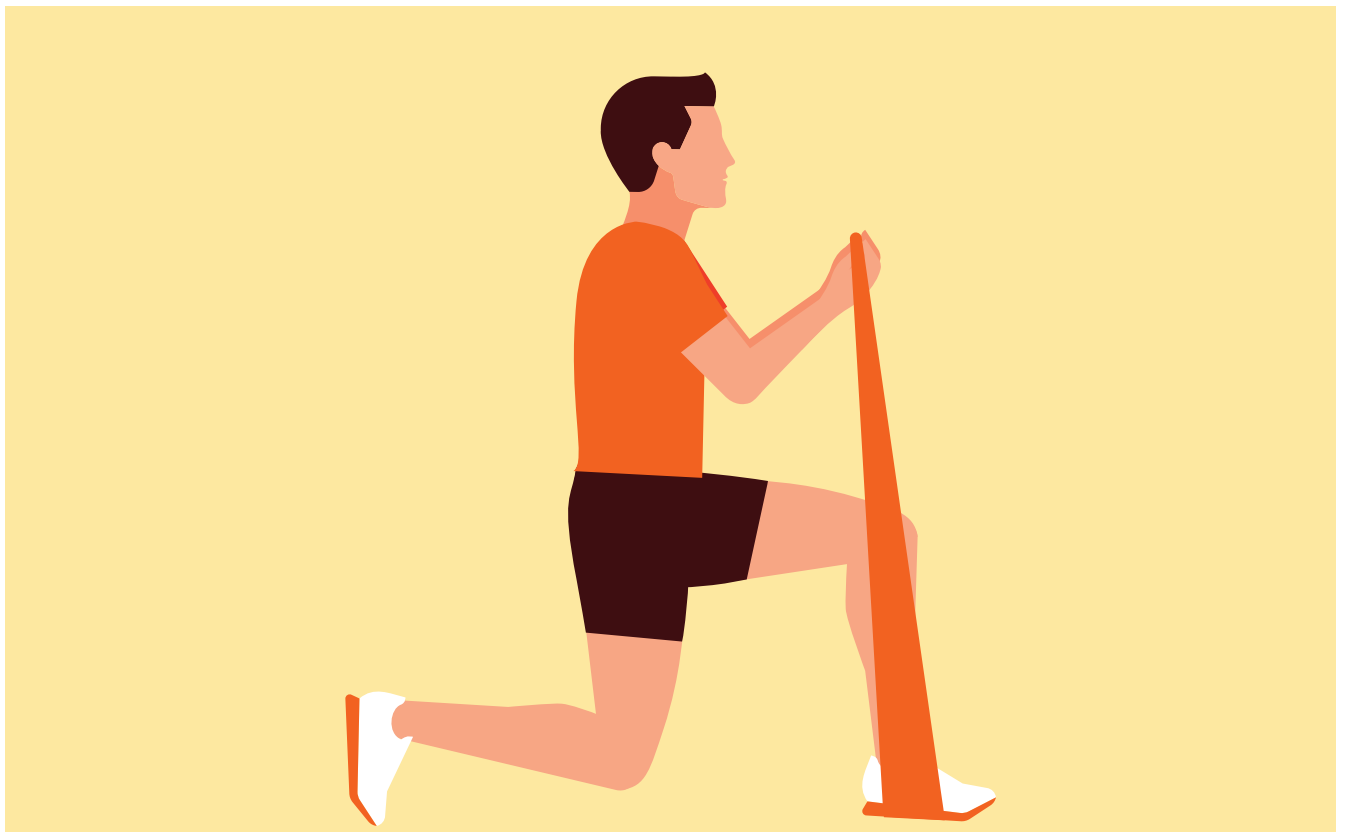
Forgetting to mix up your routine

You always need to keep your body guessing. To ensure that you don't plateau, you need mix up your routine occasionally, to train your muscles in different ways. Try "speaking" and "communicating" with your body in different ways by exploring different techniques such as:

- Bodyweight training
- Resistance bands
- Kettlebells

Not eating enough protein

Protein plays a major role in building muscle and yet, more often than not, when trying to bulk, we don't get enough of it. The truth is, when you're intent on bulking you need to keep increasing your caloric intake in order to build bigger muscles. Therefore, even if you've increased your consumption, you'll eventually plateau, and need to increase it even further in order to get bigger.



Chapter 7

The ultimate guide to supplements

You may have heard about various supplements you can take to increase your performance, recovery, and response to various types of exercise.

In fact, the supplement industry is worth billions. Companies are constantly marketing products in new ways that promise to activate new muscles, making you bigger and stronger than ever before.

But do these supplements actually work? Supplements have one of two purposes:

Allow you to produce more force to lift more weight.

Aid your muscles to rebuild themselves efficiently, forming new fibres. This is important when you consider the microscopic tears which take place on a cellular level when lifting weights or exercising at a high intensity.

According to ScienceDirect “it is clear that carbohydrate (but not fat) still remains king and that carefully chosen ergogenic aids (e.g. caffeine, creatine, sodium bicarbonate, beta-alanine, nitrates) can enhance performance in the correct exercise setting.”

People can maximize their training sessions and see faster progress by using supplements that work. As with everything though, there’s a lot out there that’s akin to snake oil. The trick is to know exactly what works, so that you can avoid wasting your money.

When it comes to merging training and nutrition, the “food first” approach is the absolute ultimate ideal. However, the following supplements can give you that extra boost, and are safe to use when taken responsibly. It’s easy to overdo it, so be careful! Overloading your body with supplements and not balancing it with adequate nutrition is one of the main reasons supplements can have negative, and sometimes even dangerous, side effects.

Supplements That Work

Caffeine

Caffeine is a powerful stimulant. It can be used to improve physical strength and endurance. Studies show that “it is classified as a nootropic because it sensitizes neurons and provides mental stimulation.” Caffeine is beneficial to our overall performance, promotes fat loss, and has positive psychological effects. It’s an adenosine receptor antagonist and modifier of muscle contractility. This means it reduces the perception of effort, fatigue or pain associated with exercise.

One of DNAfit’s genetic markers (in our nutrition report) is caffeine sensitivity. We provide you with your caffeine sensitivity, and show you how you can make appropriate modifications to use caffeine to your advantage.



Creatine

Creatine is probably the most popular booster supplement. It's associated with enhanced athletic performance. A study shows how it "stimulates protein synthesis, which can make you build muscle much faster. People who paired creatine with resistance training put on lean muscle mass anywhere from 15%-200% faster than people who did the same workouts with a placebo."

This is because creatine is made from three amino acids: arginine, glycine and methionine, which promote muscle building. If that wasn't enough, creatine is also a nootropic. Studies show that it "enhances memory and delays mental fatigue." This is an essential aspect of training as it helps you remain focused throughout.

Beta-alanine

Beta-alanine is known to increase your performance during a single competition. It can also support the training process. A study supports the "benefits of beta-alanine supplementation on high-intensity exercise and a potential additive effect when combined with bicarbonate supplementation."

Beta-alanine is often used by athletes who are looking for that edge, without intense side effects.

Whey

Protein is the macronutrient needed for you to bulk up. The best way to do this is with a whey protein shake post-workout. Most studies show that "supplementation of whey alone or with carbohydrates immediately after and possibly before and during resistance exercise can enhance the muscle hypertrophy response to resistance training in healthy adults."

Whey gives your body an adequate amount of nutrients in a short space of time. A whey protein shake aids recovery and helps you build muscle. It's highly recommended to people who train regularly and need an extra protein boost.

Vitamin D

Emerging evidence suggests that "vitamin D may play a regulatory role in muscle regeneration and subsequent hypertrophy following damaging forms of exercise." It regulates innate and acquired immune function, cardiovascular health and even muscle growth and repair. Vitamin D is part of DNAfit's panel of genetic markers. We're able to tell you whether you're getting enough of it, or if you require a supplement.

Beetroot juice

Evidence shows that beetroot juice can "enhance sports performance in moderate calibre athletes and individuals among elite athlete populations, with emphasis on adequate supplementation protocols and sports or scenarios which rely on the recruitment of the less-oxidative type II muscle fibres, and local or environmental conditions of hypoxia or acidosis." This is especially helpful for endurance athletes running at high altitudes or long distances.

When asked, Craig Pickering (Head of Sports Science at DNAfit), stated that apart from the supplements we've highlighted above, "pretty much everything else" doesn't.

Supplements that don't work**Glutamine**

An interesting article by Robertson Training Systems shows how "glutamine supplementation results in the glutamine being sequestered by the liver and intestines and released to the body on an as-needed basis." So, despite its popularity, it seems like a glutamine supplement won't help your workout. Robertson goes on to write "since the supplemental glutamine spike never reaches the muscles, the increased muscle protein synthesis effect associated with glutamine never actually occurs in people after supplementation."

BCAAs

Another popular supplement is BCAAs - but are they necessary? Not if your protein intake is already good... A recent study investigated a seven-day supplementation of BCAA (at 5g per day), and found that it “did not increase the running performance during a marathon. Furthermore, BCAA supplementation was ineffective to prevent muscle power loss, muscle damage or perceived muscle pain during a marathon race.”

Betaine

Betaine is meant to have similar effects to choline and creatine. Livestrong explains how it is used to “induce cellular swelling and improve methylation status, respectively.” However, creatine is more effective and reliable than both betaine and choline. If you're interested in the “food first” approach, eating egg yolks can render betaine supplementation unnecessary.

Nitric Oxide

Nitric oxide is found in cruciferous vegetables. It's pretty pointless to supplement if you eat a healthy, balanced diet. According to Jim White, RD, Academy of Nutrition and Dietetics spokesperson, “I recommend making sure optimal NO is produced by consuming essential precursor vitamins and nutrients. This can be done by a healthy, well-balanced diet, with attention to some additional nutrients. Red beets, spinach and other leafy greens, for example, have a large amount of nitrates.”

Testosterone boosters

There's a school of thought which believes you'll perform better when testosterone is boosted. These people believe you can lift heavier weights and see big gains from a testosterone supplement. However, there are possible physical and psychological side effects that may make you think twice about using them.

Side effects include:

- Acne
- Aggression
- Anaemia
- Anxiety
- Depression
- Increases size but not strength
- Kidney damage
- Mood swings

Our Head of Sports Science, Craig Pickering stresses the importance of an individualised approach. He notes that supplements can be good, “although it obviously depends on your goals. Sprinters probably don't need much beetroot juice, whilst endurance athletes don't need much creatine (and carb gels would be a good idea for them). Whenever you encounter a new supplement, do your due diligence beforehand, ask yourself what your goals are, and make a decision based on this.”



Chapter 8

What should you do after training?

While training is important, there are steps you need to take after your workout. Training causes oxidative stress and muscle damage which allows your body to build additional muscle.

Recovery isn't just a case of doing a few stretches or eating right. There are a whole myriad of factors which you need to take care of, to ensure that you'll perform at your peak.

Post-Workout Exercise

Cool down instead of rushing out

With your blood pumping and heart rate up, it's always tempting to rush out of the gym as quickly as possible. Often we focus on getting those precious nutrients in, rehydrating and relaxing. However, it's important to allow for a period of cool down time, right after your workout. That, in itself, allows your body to relax and adapt to the changes that occurred.

Stretching

There are two types of stretching:

- Dynamic stretching (stretching in a smooth flow of movement)
- Static stretching (stretching and holding for a period of time)

Regardless of which you prefer, it's imperative to stretch before and after workouts. This helps keep your body flexible after workouts. It will also strengthen your muscles so that they don't suffer from DOMS or fatigue.

Foam roller

The foam roller is revolutionary when it comes to recovery. It's a simple tool that you can use to break up "knots" in soft tissue. These occur due to the muscle damage that accompanies intense exercise. Using a foam roller will improve your flexibility, blood flow and circulation.

Do a short stint of cardio

If you're lifting weights, doing squats, and "pumping iron" then a light session of cardio can help prevent stiffness.

Active recovery

If you're serious about training, then your mantra should be: "rest days aren't cheat days". Sure, rest is important, especially as your sessions get more intense, but on the days you aren't training, you should still do enough to stay active. You could try some of the following:

- A light session of yoga in the morning
- A few bodyweight exercises such as planks or push ups
- A relaxed jog outdoors

Stress-Reducing Measures

Get into an ice bath

An ice bath is momentarily uncomfortable, but it's effective for reducing pain and aiding recovery. This cold therapy helps combat the small tears that occur on a muscular level in your body. It'll reduce swelling, flush out toxins, and constrict blood vessels so that your body relaxes.

Adequate sleep

You may think you're only building muscle when you're pushing hard at the gym, but most muscle growth takes place when you're at rest. Getting enough sleep is vital to ensure your body repairs itself.

Hot/Cold Immersion

Forcing your muscle tissue to adapt to sudden changes in temperature helps you recover quickly after strenuous exercise. It stimulates your body without increased stress. You should be wary of how you do this. Always stretch your muscles out when your body is still warm, then finish off with the cold session.

Conclusion

Understanding your genetic profile can lead to better health and nutrition. By understanding your genetic response to diet and exercise changes, you'll be in a better position to leverage your body's strengths to your advantage.

A simple DNA swab test can tell you things such as:

- What nutrients you can and can't digest
- How you absorb and metabolise macro and micronutrients
- How you process toxins
- How your body reacts to different types of exercise
- Your tendency to gain weight

Following a personalised diet and exercise plan, which helps you eat and train right for your genes, will unlock your health potential. This helps you achieve your fitness goals faster in the short-term. It also leaves you healthier (and better equipped to fight disease) in the long-term. DNAfit teaches you how to get the most out of your workouts, reduce the risk of injury and recover more efficiently.

We'll help you unlock your body's secrets, using DNA sequencing. Whether you want to know how to lose weight faster, build muscle or just get in shape - your DNA holds the answers.

You'll be assigned a personal fitness coach to support you on your DNAfit journey. You'll also have access to DNAfit's Fat Burner and Muscle Builder training plans. Whether you prefer a home gym workout or joining fitness classes at your nearest gym, we'll help you find a training programme that fits in with your lifestyle.

Take a look at how DNAfit can help transform your wellness journey, with a healthy, balanced diet plan tailored to fit in with your lifestyle.

Start my genetic journey today

Discover Body Fit

