What do my

fit20 workouts do for me?



fit20®

Fit in 20 minutes per week



Every fit20 session sends the same message to your body: “Everything needs to get better!”

Good news! You have already completed about twenty fit20 sessions. Every week, you give your body a stimulus to improve your health, strength, energy, vitality and efficiency. At fit20, the effects go well beyond your muscles. Your bones, liver, brain, heart and blood vessels, hormone profile, fat and glucose metabolism, and cellular energy production all respond positively. Every fit20 session sends the same message to your body: “Everything needs to get better!”

fit20 is much more than simply getting moving. It gives your body a weekly health stimulus that you can feel in everyday life. It is easy to do and easy to keep up.

We believe this kind of training will increasingly be recognised as the best health stimulus you can get without a prescription. This booklet explains exactly how it works. You will find plenty of new and sometimes technical information, so you can take a look under the bonnet.

English translation of the Bulgarian Loyalty 2 brochure

How have my muscles changed?

Muscles are made up of different fibres. Your body recruits them at different times depending on how much force and power are needed. They use different fuels, from diesel to rocket fuel, drawing on both aerobic and anaerobic metabolism.

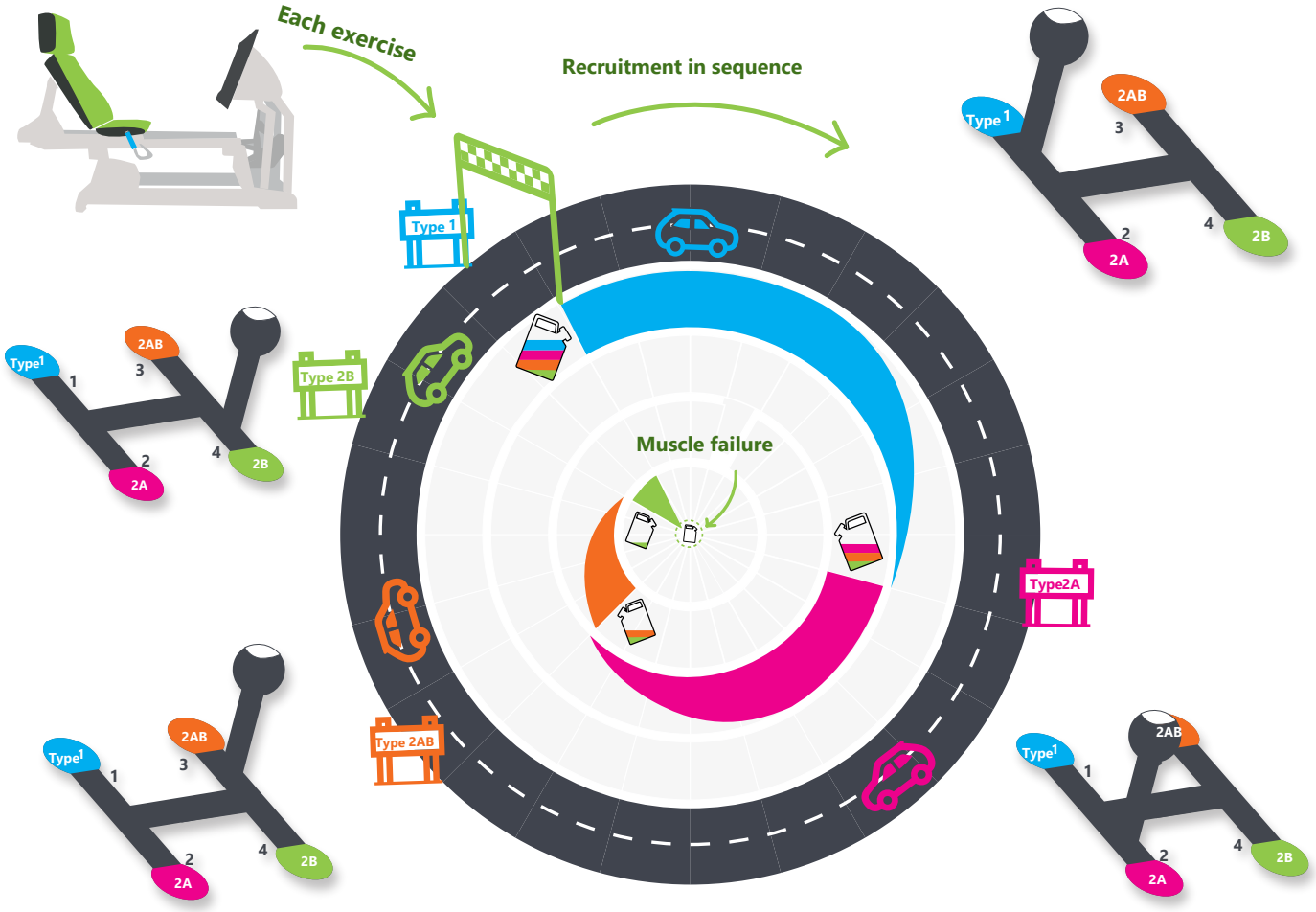
The fibre types are numbered 1, 2A, 2AB and 2B. We all have these types, but the proportions vary from one person to another.

Stronger muscles?

- More energy
- Less muscle soreness
- Greater sprint power
- Quicker reflexes
- Better oxygen supply
- Better nutrient delivery
- More efficient waste removal

The fit20 method recruits each type of muscle fibre in sequence. Think of it as changing gears in a car. The different fibre types engage in order, a distinctive feature of the fit20 training programme.

Just before muscle failure, when you think, "I can't do any more," the final type, 2B, kicks in. That rarely happens in daily life or in other forms of exercise and sport. Type 2B is reserved for the most urgent situations, such as running for your life. fit20 training reaches the intensity needed to recruit it. We lose this type of fibre relatively quickly as we age. We rarely use it in everyday life, and what we don't use, we lose.



"In a fit20 session, you train each muscle fibre type in sequence."

Recruiting type 2B fibres brings benefits at cellular level. Your mitochondria, the powerhouses of your cells, become much more efficient at producing ATP, your muscles' units of energy. With more ATP, your body can use energy more smoothly and efficiently. Your metabolism speeds up, your everyday energy levels rise, and you are better prepared for situations that demand a quick reaction.

Type 2AB fibres respond a little differently. When fit20 recruits those fibres, you become better able to tolerate the build-up of lactic acid, which the brochure associates with muscle soreness. A fit20 session is short, so you spend little time in the phase when acidity rises. Lactic acid does not build up as it does in endurance sports such as long-distance running or cycling. The brochure links this to minimal soreness, or soreness that disappears after a few sessions.

Training type 2B fibres lets your muscles contract much faster and with more power. People who train with fit20 notice this in their sprint power and quicker reflexes. You get faster by training more slowly!

You have also trained the other types of muscle fibre. This all-round training improves oxygen transport, nutrient delivery and waste removal. Your muscles gain more mitochondria: more powerhouses producing more energy. The result is a higher, steadier level of energy throughout the day.

"You get faster by training more slowly!"

What else has improved in my muscles?

More and varied myokines

- Protected your brain cells
- Countered inflammatory reactions
- Repaired muscle damage
- Improved glucose metabolism
- Improved fat metabolism
- Helped fight pathogens more effectively
- Allowed cells to die at the right time
- Improved your ability to recover

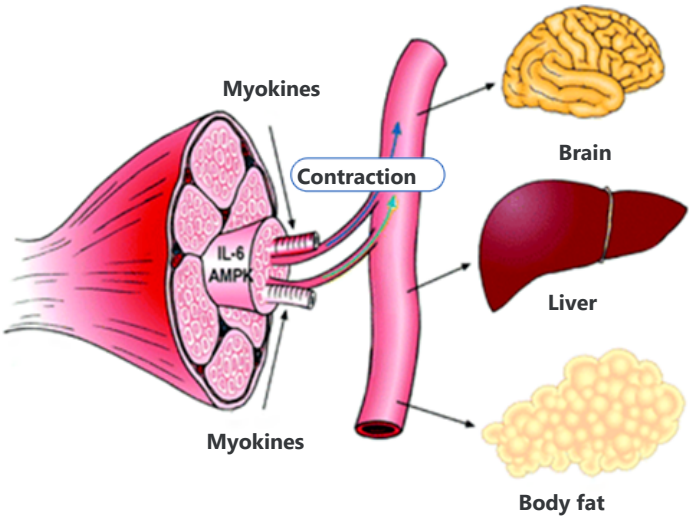
To understand what else has improved, it helps to look at what muscles are and what they do. We normally think of muscles in terms of strength: they contract and make movement possible. It is easy to think of them as doing only what they are told. Breakthrough research has shown that muscles also display considerable endocrine activity during and after exercise. In other words, they release hormones and hormone-like substances.

Hormones are vital messengers that start or stop processes throughout the body with great precision. Muscles help direct what happens as well as carrying out instructions.



Muscles send powerful signals to every organ system. They shape our health at a deeper level than we might expect. They work best when trained properly and consistently.

Muscles communicate with tissues and organs through myokines.



Myokines are molecules that act as intermediaries in many vital cellular processes, including metabolism and the functioning of the nervous system and liver.

The four muscle fibre types release different myokines. They help regulate fat metabolism by lowering insulin in the blood and increasing insulin receptors on cells. They also counter inflammatory reactions linked to excess body fat, help repair muscle damage, fight pathogens, and help trigger programmed death (apoptosis) in certain cancer cells.

Because fit20 trains all muscle fibre types, it prompts a substantial release of myokines. This may help explain why fit20 members report fewer colds and milder hay fever symptoms.

Myokines exert specific endocrine effects on the brain, liver and body fat.

The brochure also links the release of myokines to reports from fit20 members with diabetes who have seen substantially better blood glucose levels and, in some cases, needed less medication.

The positive effect of muscle training on the brain has been known for years, and how it works is becoming clearer. Strength training increases a myokine called brain-derived neurotrophic factor (BDNF) in muscle tissue and the brain.

BDNF protects neurons and helps new ones form. It plays a crucial role in processes linked to protection against neurological conditions such as Alzheimer's and Parkinson's disease. It may also help prevent or alleviate depression.

BDNF acts like fertiliser for the brain, helping it work at its best and stay healthy. The brochure links fit20 training to mental clarity and notes that some members report better concentration. Members with neurological conditions such as Parkinson's disease or multiple sclerosis have also reported a marked reduction in their symptoms.

Researchers have identified around 600 different myokines. They may help explain why moving more, and in particular why doing intensive strength training, has such a positive effect on overall health and may help counter some effects of ageing.



As well as releasing myokines, fit20 training prompts the muscles to produce an important type of protein called heat shock protein (HSP). These proteins help muscles recover after exertion and protect against injury.

HSPs also appear to play an important role in recovery after severe burns, infections or other injuries. They protect cells from damage and are involved in many of the body's signals for repair.

Through fit20 training, you strengthen your ability to recover from unexpected injuries. This may help explain why fit20 members with back pain or other longstanding complaints often report improvements they had not thought possible.

"I'm learning how to push myself safely and in a controlled way towards new limits."

So I've improved more than just muscle strength?

Yes, definitely. Evidence increasingly points to crosstalk between muscles and bones, body fat and bones, muscles and the liver, body fat and the liver, and the liver and bones. Training your muscles properly can have positive effects elsewhere in your body. You improve your muscles, and your muscles improve you!

fit20 training has also made your bones stronger and healthier. Research suggests there is more to this than the mechanical force muscles exert on bone.

As we have seen, muscles release important substances called myokines, which appear to affect our bones too. One myokine, fibroblast growth factor 2 (FGF2), is released after the kind of exertion involved in a fit20 session. FGF2 stimulates bone formation and helps maintain bone density. New research suggests it may also protect the heart.

"You strengthen your muscles, and they strengthen you."

- **Stronger bones**
- **A healthier heart**



How has my cardiovascular fitness improved?

In short, there have been several cardiovascular improvements. Your heart and blood vessels work together to carry oxygen and nutrients in the blood to every tissue in your body.

"Train your muscles and your heart will follow."

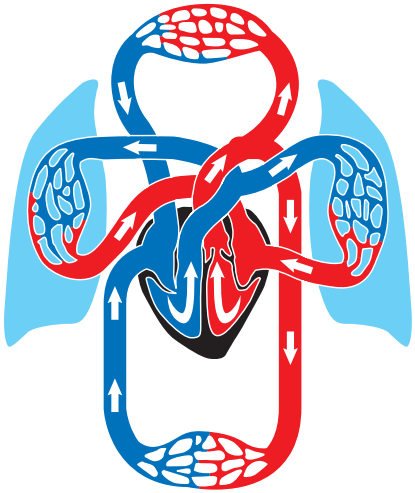
Cardiovascular benefits

- Improved endurance
- Greater strength
- Better aerobic and anaerobic metabolism
- Blood pressure closer to normal
- A healthier heart and blood vessels

The heart and blood vessels can be trained to work more efficiently. People often assume this means doing "cardio", as if the heart needs to be trained separately. It is part of your whole body, and its condition improves as your overall fitness improves. The fit20 workout trains your body as a whole.

As your muscles work harder to move the weights, your heart has to pump more oxygen-rich blood around your body. Train your muscles and your heart will follow. The amount of blood that the heart pumps depends on heart rate and stroke volume, the amount of blood it ejects with each beat. When arteries widen, the heart pumps against less resistance and its capacity can increase.

When more oxygen-poor blood returns to the heart, the heart can pump more oxygen-rich blood out. The intensity of fit20 training causes blood vessels in the muscles to widen, increasing the heart's capacity.



Blue = oxygen-poor blood
Red = oxygen-rich blood

When your muscles contract during exercise, they push oxygen-poor blood back towards the heart, since the muscles have used the oxygen it carried. This allows more oxygen-rich blood to reach the muscles just as their demand for oxygen rises. Your heart is a muscle. As it becomes stronger and more efficient, it can send more blood where it is needed with every beat.

fit20 training increases the amount of oxygen delivered to your muscle cells. It also improves aerobic (oxygen-using) metabolism within the cells, which you notice as better endurance.



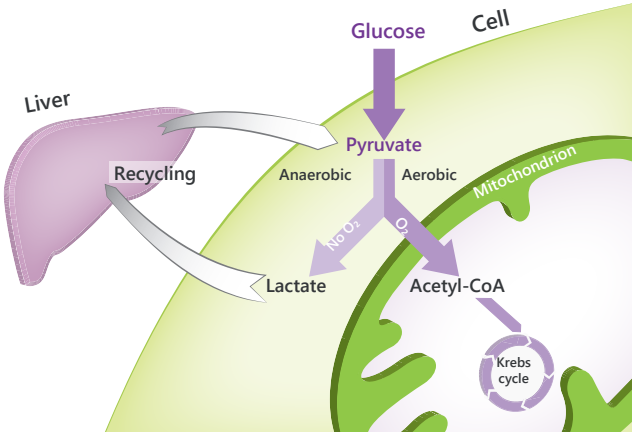
During a fit20 session, your cells produce large amounts of a molecule called pyruvate. It forms in the part of the cell where anaerobic metabolism (which does not require oxygen) takes place. The mitochondria, your cells' powerhouses, use it as fuel for aerobic metabolism (which requires oxygen).

During training, you produce more pyruvate than your mitochondria can use immediately. The cells convert the excess into lactate, which the liver recycles and converts back into pyruvate.

The brochure describes the 90 minutes after a fit20 session as a period of continued aerobic activity. Weekly sessions strengthen aerobic metabolism over time, improving the fitness of your heart, lungs and blood vessels and gradually building endurance.

fit20 training has improved both your cardiovascular system and your aerobic metabolism. We often hear from people with high blood pressure that it goes down shortly after they start fit20.

Some fit20 members who run marathons, play golf or ride mountain bikes notice gains in endurance and strength. Others find that everyday tasks such as gardening or sweeping the yard take less effort because their overall fitness has improved.



What else has fit20 training done for my health?

Hormones play a large part in your health. They are the body's messengers and regulators. Among the important ones are the sex hormones testosterone, oestrogen and progesterone. All three matter for both men and women, in different proportions.

"How fit20 influences hormone levels"

The effects on hormones

- More sex hormones
- Fewer stress hormones
- More DHEA
- Less insulin
- More growth hormone
- An anti-ageing effect through DNA protection

Sex hormones do much more than support reproduction. Testosterone helps build muscle tissue. Oestrogen and progesterone help repair damaged tissue and keep the gut working properly. They also support immune function. Very young children and older adults, who can have low levels of sex hormones, are often vulnerable to infection. Oestrogen and progesterone also partly influence sleep quality in women.

A Japanese study found that strength training raises testosterone levels in the blood of older men. This kind of training also increases DHEA, a precursor the body can use to make testosterone and oestradiol (oestrogen).

The brochure also describes an indirect effect on the balance of sex hormones through a reduction in the stress hormone cortisol.

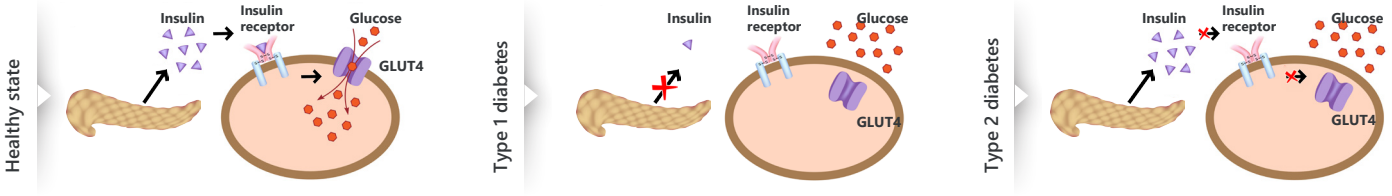
The fit20 workout activates cortisol stored in your muscles. This helps explain how relaxed you can feel after a session, which is favourable for sex hormone production. It may also explain why many fit20 members feel noticeably more relaxed after training, and why some report an increased sex drive.

Another hormone affected by fit20 is insulin, which helps cells take up glucose. Insulin directs blood glucose to where it is needed for fuel. Glucose enters our blood when we eat carbohydrates and sugar. Too much glucose in the blood is dangerous, so insulin has to "open the cell door" to move glucose from the blood into the cells.

Insulin can open the door only when cells have enough properly functioning insulin receptors. Think of a key (insulin) and a lock (the insulin receptor).

As people age, many still produce enough insulin, but their cells can have too few receptors or the receptors may no longer work as well because they have become less sensitive to insulin. As a result, too much glucose and insulin stay in the blood while there is too little glycogen inside the cells. The brochure describes this as type 2 diabetes.

fit20 makes your muscles use a large amount of glycogen, the form in which muscles store glucose. An intense fit20 workout draws down glycogen reserves in your muscles.



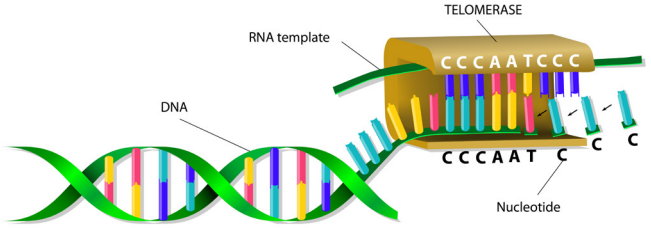
As these reserves fall, the insulin receptors on muscle cells have to work harder. They adapt and become more sensitive to insulin again. With receptors working better, blood glucose falls because it can be directed into muscle cells again. Blood insulin also falls, so less glucose is stored as fat.

Muscle strength increases as the cells' improved insulin sensitivity helps muscles absorb nutrients again.

The brochure presents fit20 as a way to help prevent type 2 diabetes in people who are at risk and reports that regular participants living with type 2 diabetes often notice improvements.

Your levels of growth hormone also rise with fit20 training. Growth hormone is sometimes called the "youth hormone" because of its role in tissue repair, regeneration and renewal. It is naturally abundant in younger people and declines with age. Research suggests that intensive exercise such as fit20 can raise growth hormone levels naturally.

Recent Dutch research suggests that growth hormone also helps the brain work better and faster. It activates telomerase, an enzyme that helps keep DNA intact. The better preserved your DNA, the slower ageing takes place. Telomerase in turn activates growth hormone, creating what the brochure calls a positive anti-ageing feedback loop.




fit20

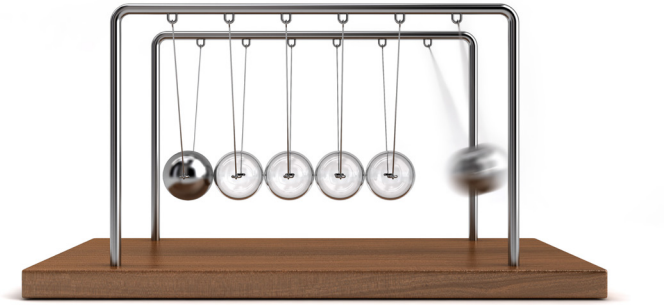
How can I keep improving my health?

fit20 training has done a great deal for you. Your overall health has improved in meaningful ways. Every week, training gives your body a strong signal to keep building strength and improving. fit20 aims to provide an effective training stimulus that is tailored to your individual needs.

Over time, as you train consistently, the weight you can move will eventually level off. What matters most is how well you can move a little beyond your previous limits in each session. The goal is the health stimulus. Weight is the tool you use to prompt your body to adapt.

You can improve your training results by having a small amount of carbohydrate, such as half a banana, before your session. The brochure suggests avoiding carbohydrates, including sugary snacks, for up to two hours afterwards. After training, have a source of quality protein such as meat, full-fat yoghurt or cottage cheese, fish or eggs. Drink water, rest and, above all, enjoy your free time!

"The goal is the health stimulus. Weight is the tool."



Glossary

BDNF	A myokine that helps protect brain cells.
Blood glucose	The concentration of glucose in the blood.
Cortisol	A hormone involved in the stress response.
DHEA	A precursor to the sex hormones.
DNA	The molecule that carries genetic information.
Endocrine	Relating to the release of hormones.
FGF2	Fibroblast growth factor 2, a myokine that helps strengthen bones.
Glycogen	The form in which glucose is stored in muscles.
Growth hormone	A hormone that stimulates growth and repair.
HSP	Heat shock protein. These proteins help protect other proteins.
Hormone	A chemical messenger.
Insulin	A hormone that regulates blood glucose.
Insulin receptor	The cell's "lock" that the insulin "key" fits.
Mitochondria	The cell's powerhouses. They produce ATP (adenosine triphosphate), the body's energy currency.
Muscle fibre type	A category of fibre that makes up muscle tissue.
Myokine	A hormone-like substance released by muscle.
Oestradiol / oestrogen	A "female" sex hormone, also present in men.
Progesterone	A "female" sex hormone, also present in men.
Pyruvate	A compound involved in cell metabolism, derived from pyruvic acid.
Telomerase	An enzyme that helps preserve DNA.
Testosterone	A "male" sex hormone, also present in women.