EN

THE FREIBURG STUDY

MELALEUCA'S DEDICATION AND INVESTMENT IN SCIENTIFIC RESEARCH DELIVER.

Melaleuca
The Wellness Company

Astounding Results of the Freiburg Study

Powerful nutrition products deliver excellent health benefits.

Melaleuca is firmly committed to only offering high quality products with the best ingredients and innovative formulas. Many of our formulas are put to the test by conducting scientific studies to prove their efficacy. We have spent thousands of dollars while conducting studies in pursuit of our commitment to the quality and efficacy of our products. Melaleuca's dedication and investment in scientific research has led to patented formulas that are exclusive to Melaleuca. The most recent study of our products was conducted in Freiburg, Germany.

The results are in.

The Freiburg Study was conducted with 48 healthy human subjects of various ages. To be included in the study, participants were evaluated on their cholesterol measurements, triglycerides, blood pressure, blood glucose, and weight. As with the general population, many exhibited slightly elevated numbers.

The testing was conducted **before** taking the nutritional products, **one hour after** taking the products, after taking the products for **6 weeks** consistently, and after taking the products for **12 weeks** consistently.

Some of the indicators measured before and after light exercise included the following:

- Free radical activity
- Cholesterol
- Blood fat
- Blood pressure
- C-reactive protein
- Heart rate
- Glucose levels
- Inflammation

The Freiburg Study showed improvements across several key measures. Improvements were seen after 6 weeks of taking the products, and greater improvement were observed after taking the products for 12 weeks.

First-of-its-kind research.

The Freiburg Study protocol measured more than 25 key health markers in humans, including difficult-to obtain data like resistance to induced inflammation, circulating free radicals, mitochondrial free radical activity, and rate of oxygen consumption by blood cells. All of which paint a more detailed picture of what effect supplements can have in a live human body.

Why Freiburg?

Freiburg, Germany, is home to one of the oldest and most esteemed scientific communities in the world. Ten Nobel laureates hail from Freiburg. And its history of scientific excellence stretches back to 1457 with the establishment of Freiburg University – which today remains one of the most distinguished and leading-edge research universities in multiple areas, including biomedicine.

It was only in Freiburg where Melaleuca found the specialised instruments, facilities, and expert scientists necessary to evaluate the in-body benefits of supplementing with these products. In fact, Melaleuca commissioned the pioneering researcher who invented the scientific device capable of measuring free radicals in a live human body – Dr. Bruno Fink. Although not a Freiburg University study, the expertise of the area and labs associated with the university were necessary for the clinical analysis of the research.

Advanced Scientific Research:

In April 2014, Melaleuca commissioned the Freiburg Study to determine the measurable impact of the products on the human body.

Though the results of the Freiburg Study are remarkable and represent increased understanding in nutritional science, the study was performed only on subjects considered in the healthy range according to their health markers. The products were not designed to treat or cure any illness or disease. Those under a doctor's care should not discontinue using prescription medications unless under the direction of their physician.

A closer look at the long-term effects caused by OXIDATIVE STRESS.

Like a single free radical, a single raindrop seems to do little damage.

The effect of trillions of raindrops over time.

The oxidative stress created by free radicals throughout the body is random. Trillions of molecules are affected every second. But the stress caused by any single free radical is minimal.

While a single raindrop on the rock face of a mountain is not stressful – and even a single rain shower is not perceived as stressful – a million rainstorms begin to take a toll. Come back a million years later and you can see that over time, raindrops have begun to change the landscape. Several million years later, the mountain is totally eroded away and ceases to exist. So it is with free radicals. A single free radical is not perceived as stressful, but trillions of free radicals – over time – cause the ageing process and other health issues. By reducing the amount of free radicals, we can greatly improve our health and slow down the ageing process.

Scientists have known about free radicals for some time. Free radicals are a result of metabolism; in other words every living person and every living animal produces free radicals. One can compare free radicals that living beings produce to the exhaust produced by a combustion engine. As long as a combustion engine is running it is producing exhaust; similarly, as long as we are living we will be producing free radicals.

A free radical is any atom or molecule that has a single unpaired electron as an outer shell. Technically a free radical is a molecule or atom that is missing an electron and, since it is missing an electron, its chemical make-up demands that it find an electron to fill the void. Electrons are easy to come by. They are available anywhere in adjacent molecules or adjacent tissue. It literally takes a millionth of a second to solve the problem.

To solve their problem, free radicals reach out and grab an electron from a surrounding molecule, usually from within the same cell or from a surrounding cell. When it steals that electron from the adjacent molecule, it causes oxidative stress to the molecule. It's just a little oxidative stress – but it's oxidative stress nonetheless; and when the stressed cell reproduces itself and forms a new cell, the new cell is not quite the same as the old cell. It's a little less robust, it's not quite the same. And that is how the ageing process works.

It is estimated there are approximately four new free radicals created in every cell in our bodies every second. Since our bodies have approximately 36 trillion cells, that means there are hundreds of trillions of free radicals being produced in our bodies every minute – a constant barrage of free radicals that can stress our bodies over time.

The life of a free radical is about one millionth of a second. It takes about that much time for one molecule to rob another molecule of an electron. As soon as the robbery is complete, the original molecule is no longer a free radical, but the molecule from which the electron was robbed is now missing an electron and has become a free radical and will reach out and steal an electron from an adjacent molecule. Then that molecule will steal an electron from an adjacent molecule and so forth, creating a cascading chain reaction until a free radical meets up with an antioxidant.

An antioxidant molecule sacrifices itself to stop the chain reaction. When a free radical steals an electron from an antioxidant, the antioxidant molecule does not steal an atom from an adjacent molecule, and so the chain reaction stops. That's why nutritionists constantly advise us to make sure there is an adequate supply of antioxidants within our blood at all times.

We will never be able to shut down all free radical activity; that is simply not possible. Metabolism, digesting food, and breathing all produce free radicals. But if we can stop the chain reaction, if we can stop that first free radical from creating a second and a third and then thousands and ultimately trillions of free radicals, we can hope to slow down the oxidative stress that free radicals cause.

In Freiburg Study, the products deliver powerful results.

Though further research is in progress, the *products* already demonstrated significant, measurable benefits in the key categories of holistic health: heart health, metabolic health, and cellular health.

RESULTS OF THE FREIBURG STUDY:

CONTRIBUTES TO ▲

Heart Health

Cholesterol and **triglyceride** levels dropped, especially in those studied with slightly elevated levels of cholesterol, documenting that the products help:

- Maintain healthy cholesterol levels
- Maintain healthy triglyceride levels

Blood pressure – both systolic and diastolic – remained stable for those already in a healthy range and dropped for those studied with slightly elevated levels. The major metabolite responsible for maintaining healthy blood pressure levels – nitric oxide, a known vasodilator – nearly doubled. This leads us to conclude that the products help:

- Maintain healthy blood pressure
- Boost the healthy production of circulating nitric oxide in the blood

CONTRIBUTES TO ▶

Cellular Health

As participants continued taking the products, their ability to efficiently produce **energy** increased. To exert the same amount of physical effort to perform physical activity, the heart did not need to beat as fast, and all cells were able to produce the required amount of energy without demanding additional oxygen. At the same time, we observed that the spike of **free radicals** that typically accompanies physical exertion was **decreased dramatically!** Additionally, inflammatory activity decreased while resistance to **inflammation** was significantly improved. Therefore, the products also:

- Help support efficient cellular energy utilisation
- Help maintain healthy free radical balance in the body
- Promote a healthy inflammatory response
- Boost the healthy production of circulating nitric oxide in the blood

CONTRIBUTES TO ▶

Metabolic Health

The spike of **blood glucose** after a high-carbohydrate meal was significantly lower after participants started taking the products and the body's insulin response was lower. We may now conclude that the products:

- Help support normal insulin response
- Maintain normal blood glucose levels

Results increase our responsibility for accuracy in our message.

Although we are very encouraged by the results of the Freiburg Study, it is important that Marketing Executives do not overstate or misrepresent the Freiburg Study results.

Greatly improves wellness, but not a cure.

None of the 48 subjects in the Freiburg Study had been diagnosed with any disease, although some (approximately half) did have specific health markers such as blood pressure, blood glucose, and cholesterol levels that were slightly elevated. While it is significant to note that the products appear to have helped bring those individuals closer to an ideal and more healthy range, we cannot and should not represent that it cured them of any disease. To do so would be irresponsible, wrong, and, in fact, illegal. Most governments, appropriately, do not, should not, and will not allow such claims.

There is no evidence that suggests the products will cure or prevent any disease. Again, to claim that it does would be irresponsible, inaccurate, and illegal. Persons who have been diagnosed with any disease or suspect that they may have a degenerative disease should consult with their doctor. They should take their doctor's advice. No one should ever suggest that the products should be substituted for any medication prescribed by a doctor.

Anyone who uses the powerful and valuable information from the Freiburg Study to suggest that the products will prevent or cure any disease will be found to be outside the bounds of our Marketing Executive Agreement, and the Marketing Executive will be disciplined, up to and including termination.

The Freiburg Study suggests that using the products will help our bodies operate at peak performance levels, without the effect of excessive free radicals, and could help us stay well.

The battle with free radicals.

There is simply no way that we can shut down all free radical activity in our bodies. Yet, reducing the total number of free radicals is a very worthwhile endeavour.

However, reducing the likelihood is just that. It is not absolute prevention. And it is not a cure.

We simply hope to lengthen our lives and stay well. We believe the Freiburg Study is the first time that it has ever been documented that a nutritional supplement has been shown to significantly reduce free radicals in humans.

The Freiburg Study provides significant evidence that the antioxidant and anti-inflammatory properties of the products can substantially reduce free radical activity in our bodies.

More studies to come.

The Freiburg Study was conducted on only 48 subjects. There is no guarantee that everyone will experience the same results as the test subjects did. Many more studies need to be done in order to get a more complete picture of how the entire population will respond to the products. In the next two years, Melaleuca will complete several additional studies, with many more subjects, in order to more fully understand the promising benefits of the products. We will continue to make that data available to the public.

For now, we know that through a balanced and healthy diet, proper nutrition (including supplements) and exercise, we can hope to slow down the ageing process and hope to reduce the likelihood of health challenges. But we should be careful not to suggest that the products will prevent, treat, or cure these diseases.

It's all about staying well!

We wish you well on your journey to good health!

The Freiburg Study

Preliminary Findings

In April 2014, Melaleuca commissioned the Freiburg Study to determine the measurable impact of nutritional supplements on the human body.

It was conducted with 48 healthy human subjects of various ages. To be included in the study, participants were evaluated on their cholesterol measurements, triglycerides, blood pressure, blood glucose, and BMI. As with the general population, half exhibited numbers which were elevated.

The test used a collection of Melaleuca's daily nutritional supplement products.

Testing was conducted before taking the products, one hour after taking the supplements, after taking the supplements for 6 weeks consistently, and after taking the supplements for 12 weeks consistently. The study showed very positive results.

Study Protocol

The Freiburg Study was conducted with 48 healthy human subjects of various ages. None of the test subjects had been diagnosed with any disease prior to the study. None were taking any type of medication.

However, according to their health markers, 24 of the subjects had blood pressure, cholesterol levels, or body weight that was slightly elevated.

The other 24 subjects had healthy markers closer to what would be considered ideal.

48 TEST SUBJECTS

24 had metabolic syndrome

24 had healthy markers

Results Key:

*

Indicates a statistically significant change from the baseline (higher than 95% confidence).

**

Indicates an extremely significant change from the baseline (higher than 99.9% confidence).

Methodology

The methodology of the study consisted of taking blood from each individual subject. Blood samples were tested for 25 different parameters, including free radical activity, cholesterol levels, blood lipid levels, C-reactive protein (which is a good indicator of heart health), glucose levels and insulin response, and inflammation.

Heart rate and blood pressure were also recorded.

Measurements were taken before and immediately after a specific prescribed amount of exercise. Subjects were asked to come to the laboratory having fasted for eight hours. The tests went on for a period of 12 weeks. Each subject was asked to not change anything about their lifestyle or diet during those 12 weeks, except to take the supplements given to them.

FIRST, to establish each person's baseline health metrics, extensive testing was conducted separately on each subject prior to taking the supplements.

The supplements were administered along with a small roll of bread in order to aid digestion and to evaluate the body's blood glucose.

SECOND, the same measurements were taken one, two, and three hours after the subject first took the supplements. This was done with all 48 subjects.

THIRD, subjects were asked to take the supplements every day for a period of 6 weeks and return to the laboratory, where the identical tests were repeated.

FINALLY, the subjects were asked to continue taking the supplement for an additional 6 weeks and then return again to undergo the same blood tests.

The results of these tests can be studied on the following pages.

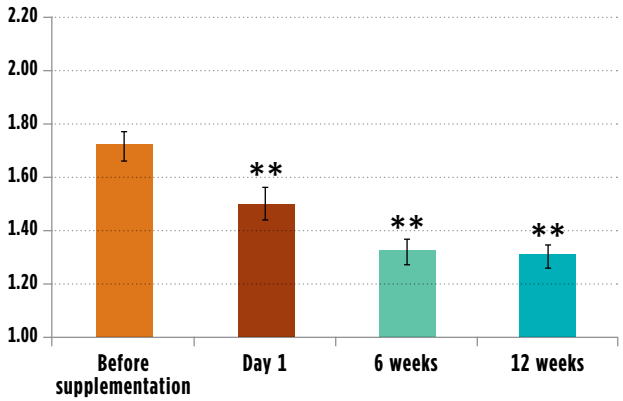
Free Radicals and Oxygen Metabolism: Resting vs. Exercise

In the study, free radicals were measured as Reactive Oxygen Species (ROS). After just one hour, study subjects recorded a 10% reduction in ROS during exercise. After six weeks of supplementation, the 48 subjects recorded an average of a 20.7% reduction in ROS while resting. This number dropped to an average 25.9% reduction in ROS during exercise.

EVERYONE

20.7%
6 WEEKS

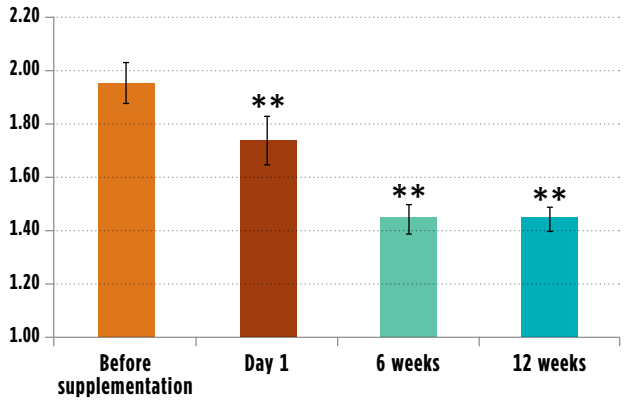
RESTING ROS



EVERYONE

25.9%
6 WEEKS

EXERCISE-INDUCED ROS



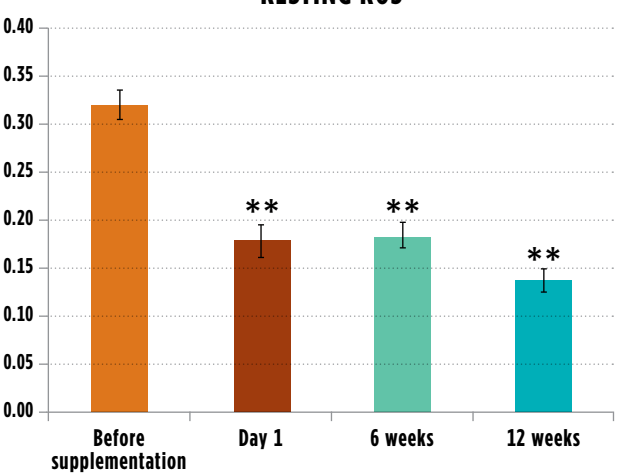
Mitochondrial Free Radicals: Before and After Exercising

Mitochondria are the energy centres of the cell. Free radicals interfere with mitochondrial function. A reduction in free radicals in mitochondria increases the efficiency of energy production.

EVERYONE

42.6%
6 WEEKS

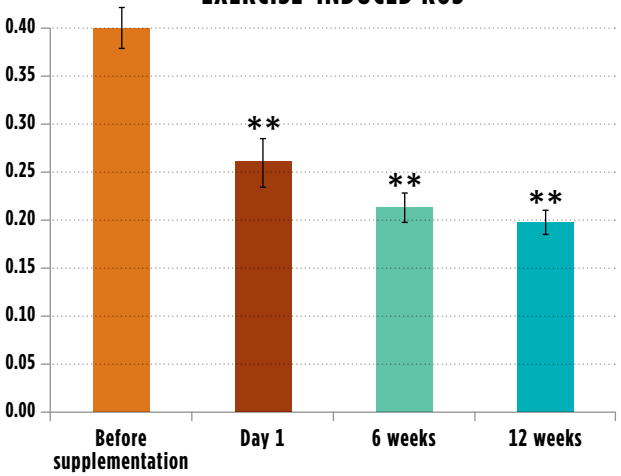
RESTING ROS



EVERYONE

44.9%
6 WEEKS

EXERCISE-INDUCED ROS



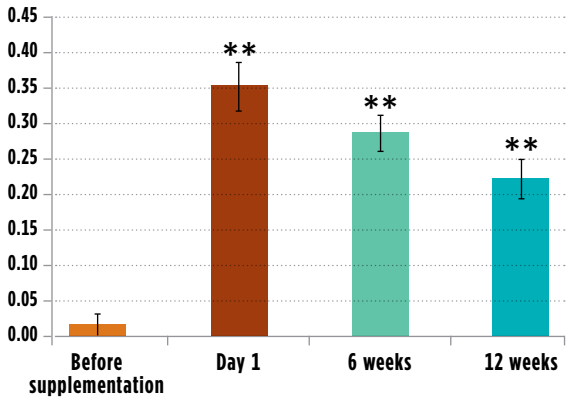
Inflammation

A 35.8% improvement in inflammation resistance was recorded just one hour after taking the supplements for the very first time.

EVERYONE

▲ 28.7%
6 WEEKS

RESISTANCE TO INDUCED INFLAMMATION



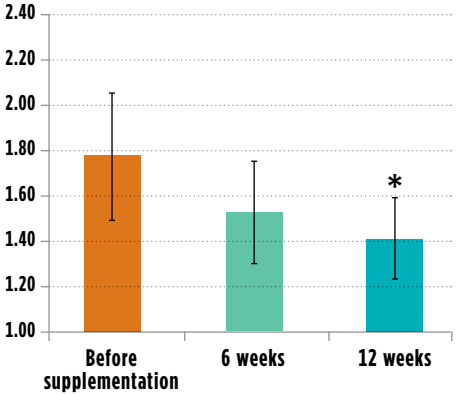
Inflammation: hs-CRP

After 12 weeks of supplementation, the reduction in inflammation response was much greater. Subjects who had higher hs-CRP, but within normal range, recorded a significant 34.1% reduction in hs-CRP.

EVERYONE

21.3%
12 WEEKS ▼

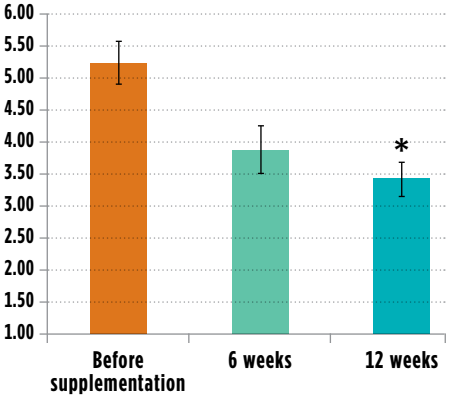
hs-CRP
EVERYONE



SLIGHTLY ELEVATED

34.1%
12 WEEKS ▼

hs-CRP
SLIGHTLY ELEVATED (>3.0)



Blood Lipids: Total Cholesterol

The 48 subjects recorded an average 7.5% reduction in total cholesterol in their blood, bringing the average down to within the ideal range. It's interesting to note that those subjects whose cholesterol levels were elevated recorded an even greater reduction of 8.5% in total cholesterol levels.

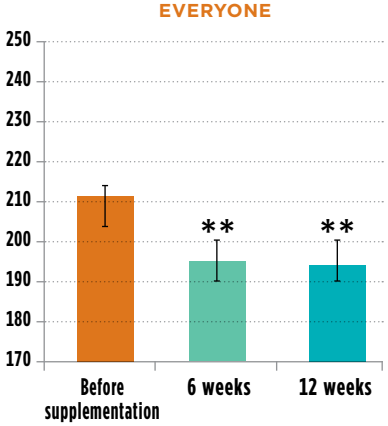
EVERYONE

7.5%
6 WEEKS ▼

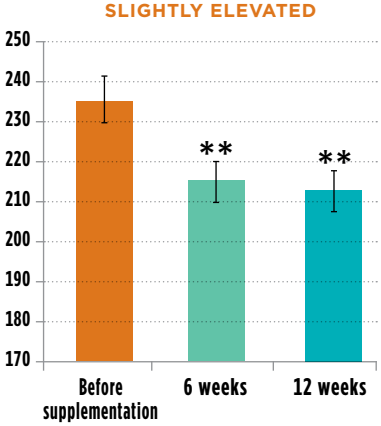
SLIGHTLY ELEVATED

8.5%
6 WEEKS ▼

TOTAL CHOLESTEROL
EVERYONE



TOTAL CHOLESTEROL
SLIGHTLY ELEVATED



Blood Lipids: HDL Cholesterol

Study participants all showed an increase in HDL (or good cholesterol). Those who began the study with less than ideal HDL cholesterol levels recorded the biggest increase, with an average 18.3% rise in HDL.

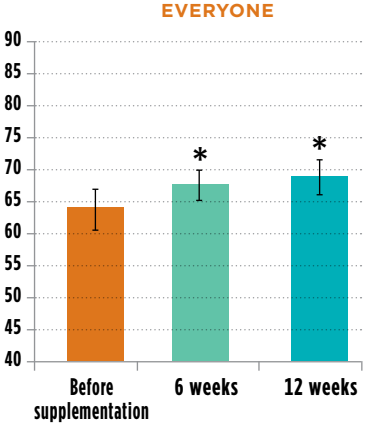
EVERYONE

▲ 7.1%
6 WEEKS

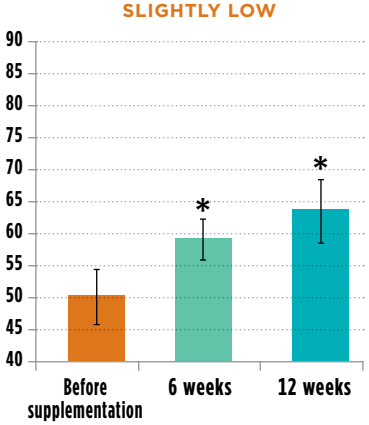
SLIGHTLY LOW

▲ 18.3%
6 WEEKS

HDL CHOLESTEROL
EVERYONE



HDL CHOLESTEROL
SLIGHTLY LOW

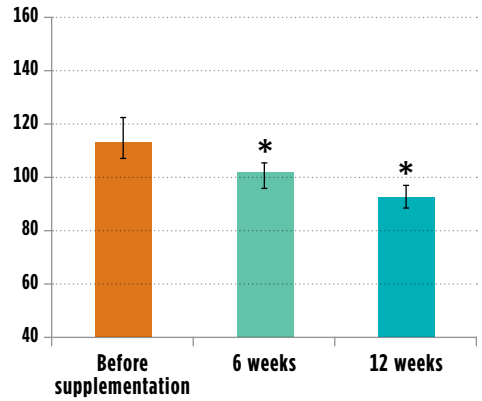


Blood Lipids: Triglycerides

An average drop of 8.8% was recorded in triglyceride levels among the total population of 48 subjects after six weeks. But this drop was notably greater for people with slightly elevated triglycerides. This group recorded an average decrease in triglycerides of 23.3%.

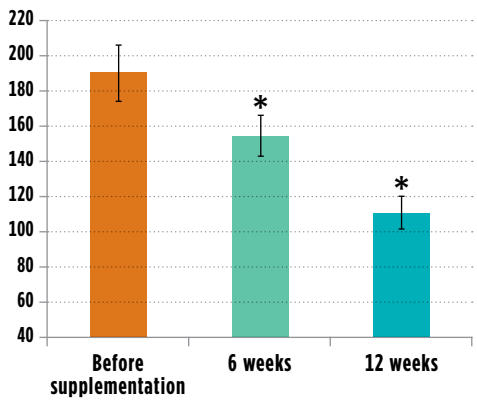
EVERYONE

8.8%
6 WEEKS



SLIGHTLY ELEVATED

23.3%
6 WEEKS



Blood Lipids: LDL Cholesterol

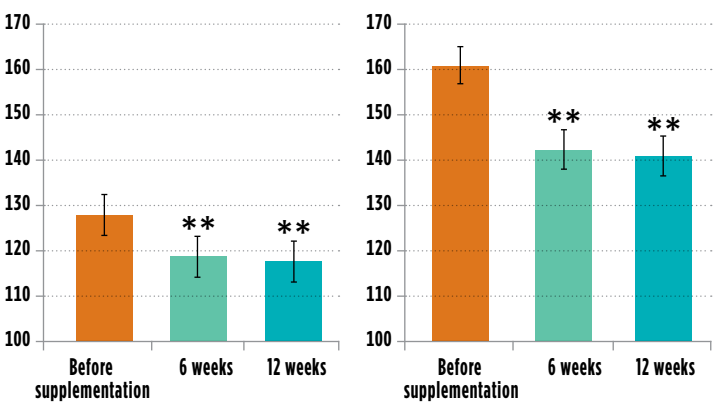
LDL (or bad cholesterol) dropped an average of 6.7% among the 48 subjects. In the elevated group, there was an average drop of 11.3% in LDL cholesterol levels.

EVERYONE

6.7%
6 WEEKS

SLIGHTLY ELEVATED

11.3%
6 WEEKS



Blood Lipids: VLDL Cholesterol

Very-low-density lipoprotein (VLDL) cholesterol was also measured in the Freiburg Study. VLDL contains the highest level of triglycerides, and high amounts in the blood can be an indicator of poor cardiovascular health. Participants in the study saw significant reductions in VLDL, especially over time.

EVERYONE

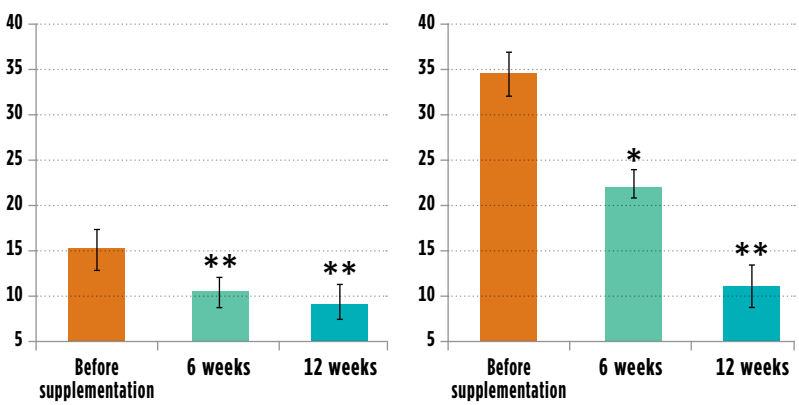
27.4%
6 WEEKS

SLIGHTLY ELEVATED

34.3%
6 WEEKS

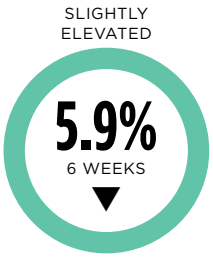
SLIGHTLY ELEVATED

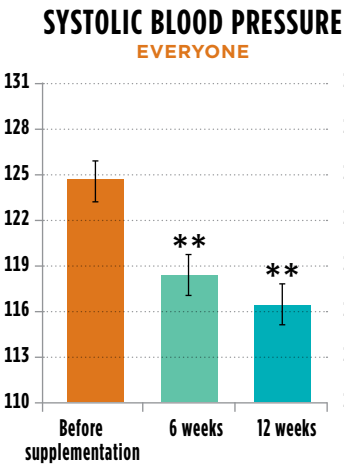
65.3%
12 WEEKS

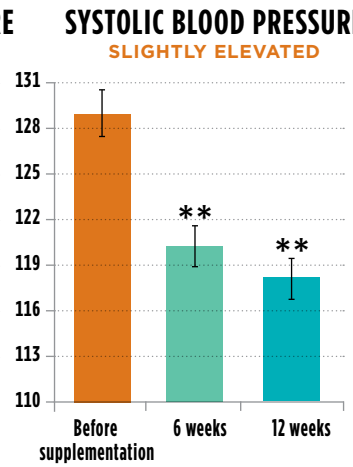


Blood Pressure: Systolic

The 48 participants in the study recorded an average of a 5.2% reduction in systolic blood pressure after 6 weeks of continued supplementation. Even more importantly, those who began the study with normal but slightly elevated blood pressure recorded a 5.9% reduction.

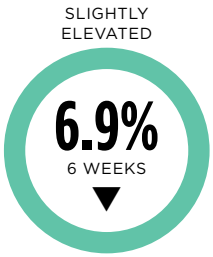


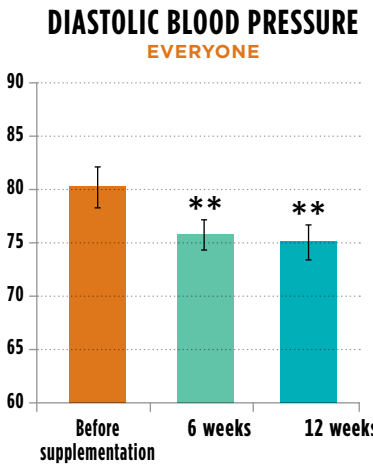


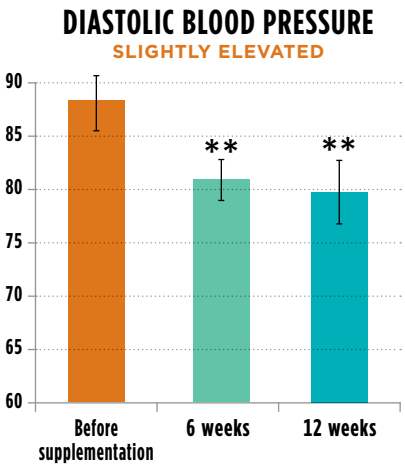


Blood Pressure: Diastolic

Study participants also saw a significant drop in diastolic blood pressure. The 48 participants saw an average 5.0% reduction in diastolic blood pressure after just 6 weeks, with an even greater 6.9% reduction in the same time period for those in the slightly elevated group.

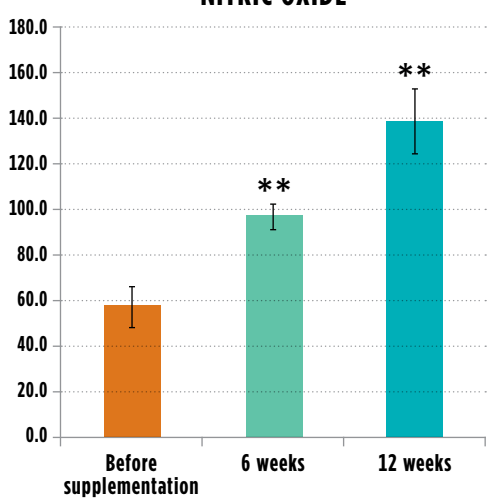






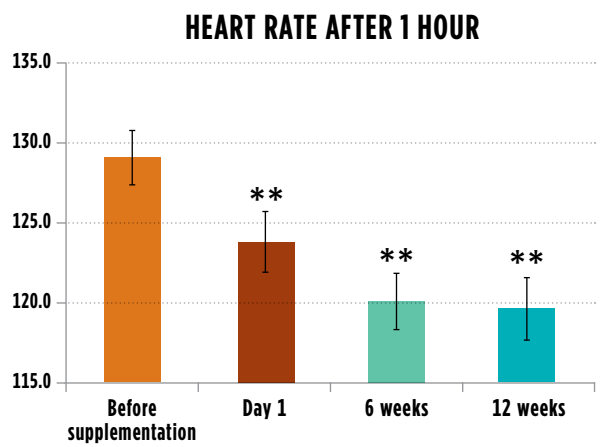
Blood Pressure: Nitric Oxide

Nitric oxide is a metabolite responsible for relaxing vessel cells, which has an impact on blood pressure. Among the 48 participants, levels of nitric oxide in the blood more than doubled after 12 weeks of daily supplementation.



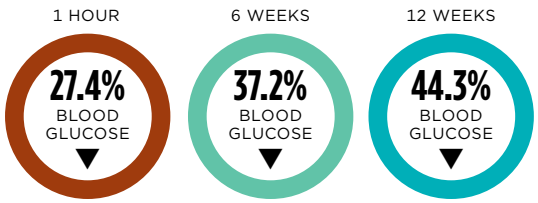
Energy Utilisation: Heart Rate

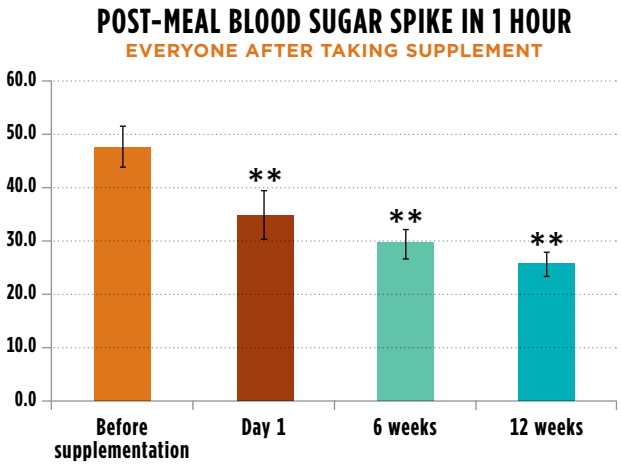
Just one hour after taking the supplements for the first time, an average reduction of heart rate by 5 beats per minute was recorded after the prescribed exercise. After 6 weeks of supplementation, the 48 subjects had an average heart rate of 8 fewer beats per minute. After 12 weeks of supplementation, they could do the same exercise with a pulse of 9 fewer beats per minute.



Sugar Metabolism: Blood Glucose

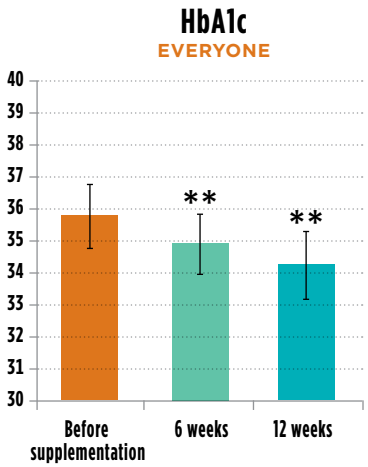
In the first hour after supplementation, a significant 27.4% reduction in blood sugar spike was recorded after eating, with an increasingly greater reduction after several weeks of continual use of the supplements – 37.2% after six weeks and 44.3% after 12 weeks.

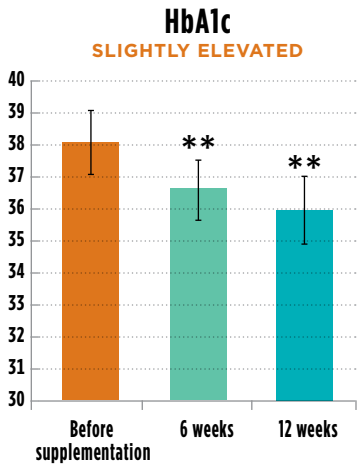




Sugar Metabolism: HbA1c

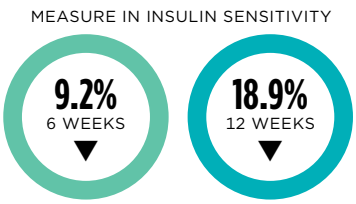
HbA1c – which shows an overall picture of average blood sugar levels over a period of 90 days – also showed a significant reduction over the course of the study.

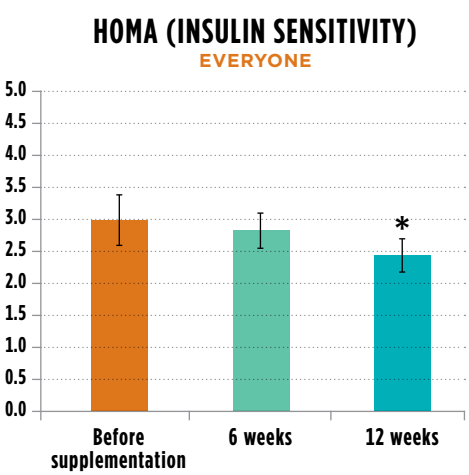


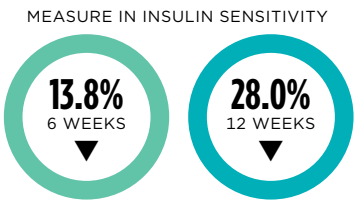


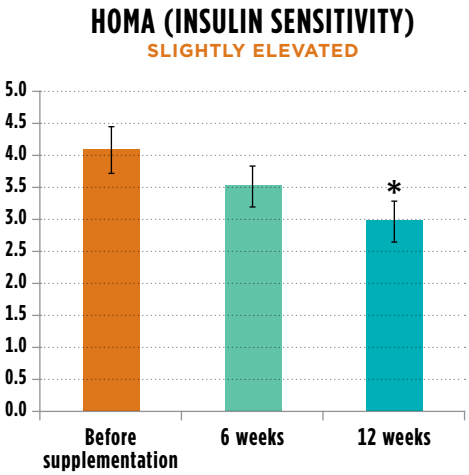
Sugar Metabolism: HOMA

After 12 weeks, a significant 28.0% drop in the HOMA index – a measure of insulin sensitivity – was observed.









In summary,

after 6 and 12 weeks of using the supplements, the 48 test subjects on average improved significantly in every marker measured. Those with elevated markers improved to an even greater extent.

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