Monteloeder
Digital Nutraceuticals for you

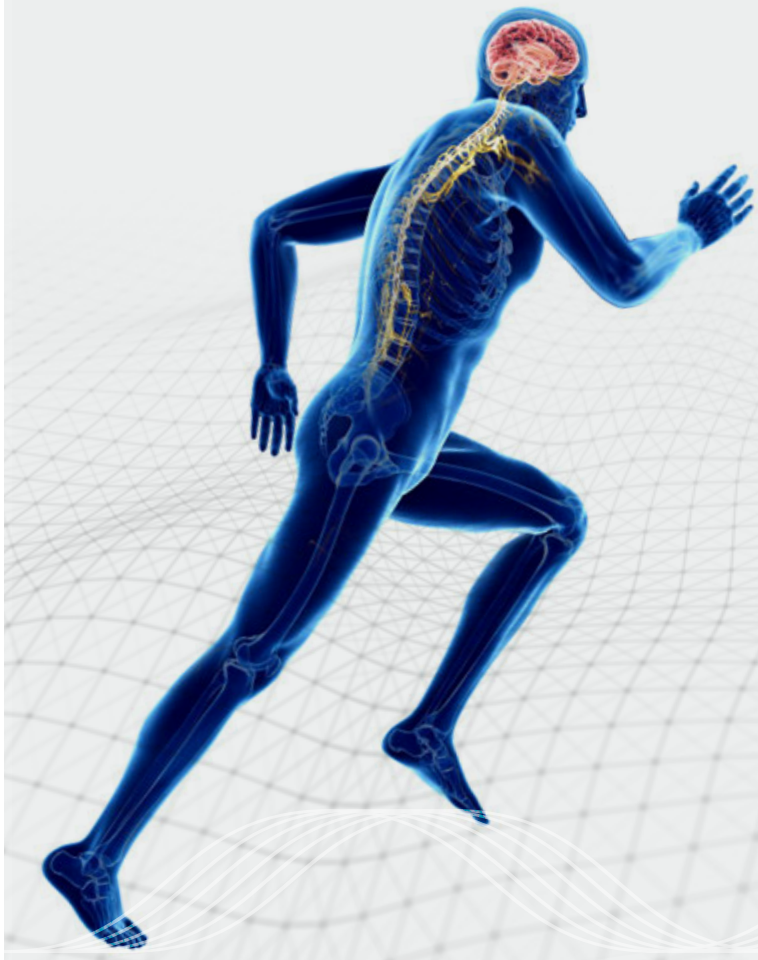
topendurance

Highly efficient solution for physically active individuals **wishing to go farther, faster**

FATIGUE IN SPORTS AND EXERCISE

In sports, fatigue has become a topic of interest among athletes, coaches and sport scientists because it affects athletic performance across a wide range of sports. Fatigue in sports is generally defined as the inability for the athlete to maintain his/her peak level of performance. Athletes strive to increase their resistance to fatigue, generally by repeated specific exercise regimes that are recommended by their coaches, while sports scientists look for new methods to efficiently decrease fatigue.

Many people believe that exercise-induced fatigue occurs solely based on the physical exertion that suffer the muscles (peripheral mechanisms). However, mental fatigue (central mechanism) also plays an important part, although few athletes take it into consideration. In this sense, there is a general misinterpretation among athletes that fatigue is caused by a single factor, where in reality it is the combination of several mechanisms.



PERIPHERAL FATIGUE VS CENTRAL NERVOUS SYSTEM (CNS) FATIGUE

Peripheral fatigue results from internal changes in the muscles during exercise. The cause for fatigue to appear is numerous, such as metabolic stress (ie lactic acid production), energy depletion, or increased body temperature. On the other hand, Central nervous system (CNS) fatigue, also known as central fatigue, originates in the brain and spinal cord. Central fatigue is caused by the disruption of synaptic stimuli of the nerves to induce the muscles to contract, which is a natural process that occurs during a strenuous, prolonged physical activity. If your CNS is fatigued, it has trouble activating your muscles. So even while your muscles are capable of producing a lot of force, they may not be capable of achieving their potential due to the lack of proper instruction from the nerve cells.

Unlike the central nervous fatigue, which affects the whole body, peripheral fatigue generally affects the group of muscles that is exerting the exercise.
Both the high-intensity anaerobic stimuli and the series, or long-term stimuli until exhaustion, negatively affect levels of cortical activation, resulting in central fatigue and consequently reduced physical performance.

There are many products in the sports supplementation market that address muscular or peripheral fatigue. However, few products specifically attack central fatigue, despite playing a key role in the loss of performance in endurance sports. In this sense, Monteloeder has developed a pre-exercise supplement with components that have been selected not only due to their individual properties but also because they work synergistically, targeting both central and peripheral fatigue.

topendurance

WHAT IS TOPENDURANCE®?

Topendurance® is an advanced pre-exercise supplement, **specifically formulated to help athletes reach their maximum potential.**

The formula contains both well-known and newly-incorporated ingredients for sports, including BCAAs (rich in L -leucine), L-tyrosine, taurine, broccoli extract and High purity omega 3 oil.

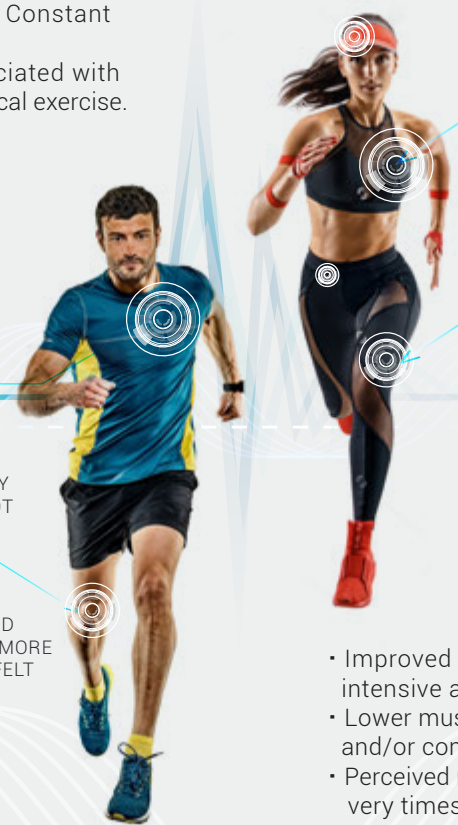
The synergies of the active compounds of the formula have been scientifically demonstrated to help delay both central and physical fatigue in endurance-based athletes.

Topendurance® is formulated as a "ready-to-drink" beverage in an easy and pleasant consumption format that combine for the first time BCAAs with highly-purified omega 3 oil. The product has been tested in endurance-based athletes, proven to help reduce the consequences of overtraining, as well as contributing to sports recovery.
The beneficial effects of TopEndurance® are scientifically supported by studies performed in collaboration with the Sports Research Center of the Catholic University of San Antonio of Murcia (UCAM) in Spain. UCAM is already recognized worldwide as 'the University of Sports'.

TOPENDURANCE® EFFICACY PROVEN

QUALITATIVE PILOT STUDY IN TRAINED ATHLETES

METHOD USED: Grounded Theory and Constant Comparative Method
OBJECTIVE: Evaluate the factors associated with the intake of Topendurance® before physical exercise.



OVERALL, MY HEART RATE AND BREATHING RATE IMPROVED NOTICEABLY

I HAVE IMPROVE MY PERFORMANCE

I NOTICED THAT AFTER I EXERCISED I FELT VERY WELL, THAT IS, I DID NOT FEEL TOO FATIGUED

I NOTICED THAT I HAVE MORE ENERGY DURING RECOVERY. I DON´T NEED TO REST SO MUCH ANYMORE AFTER EXERCISE, AND FELT WITH MORE ENERGY

MY PULSE RATE ALSO WENT VERY WELL.

I FIND MYSELF VERY GOOD WHILE TRAINING.

I DON´T FEEL MY CALF MUSCLES OVERLOADED AFTER EXERCISE. I FEEL THAT I FINISH MY TRAININGS VERY WELL.

I FEEL BETTER THE DAY AFTER EXERCISING THAN BEFORE. ALSO, I SLEEP BETTER.

Data from two participants who are part of the initial pilot study: a man and a woman both high performance athletes taking TOPENDURANCE 30-45 min before exercise

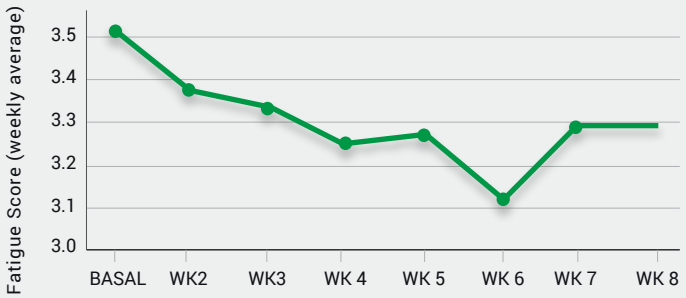
MAIN STUDY CONCLUSIONS

- Improved cardiovascular function during both intensive aerobic and anaerobic exercise bouts.
- Lower muscle overload at the end of the training and/or competition.
- Perceived more energy, resulting in shorter recovery times between workouts
- Supports a healthy blood pressure profile
- Maintain healthy blood glucose parameters

DESCRIPTIVE LONGITUDINAL STUDY TO EVALUATE THE FACTORS ASSOCIATED TO THE INGESTION OF TOPENDURANCE BEFORE EXERCISE

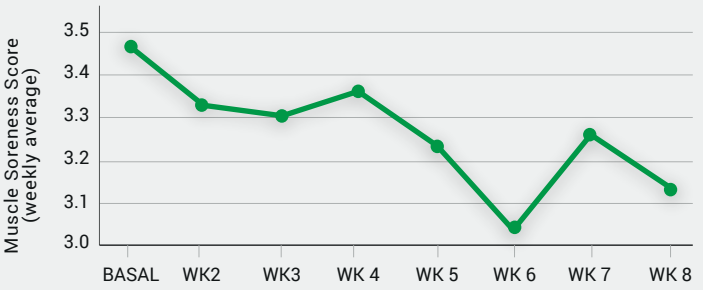
10 trained athletes | 1, 45 min before training | 8 weeks

1 TOPENDURANCE® PRODUCES A CONTINUOUS DECLINE IN THE FEELING OF FATIGUE



Study results have shown a continuous decrease in the daily fatigue score during the 8 weeks of ingestion of Topendurance®

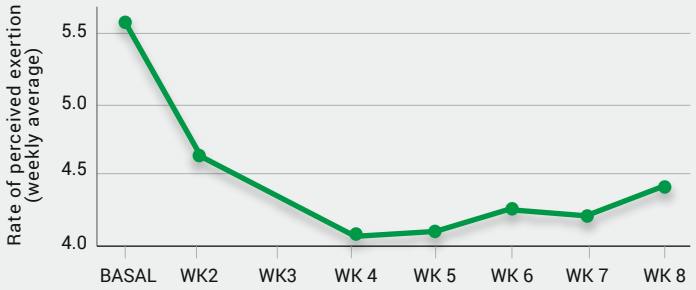
2 TOPENDURANCE® TENDS TO PRODUCE A CONTINUOUS DECLINE IN MUSCLE SORENESS



The consumption of Topendurance® for 8 weeks induces a steadily decrease in the sensation of muscle damage by the athletes.

3 RATING OF PERCEIVED EXERTION (BORG SCALE)

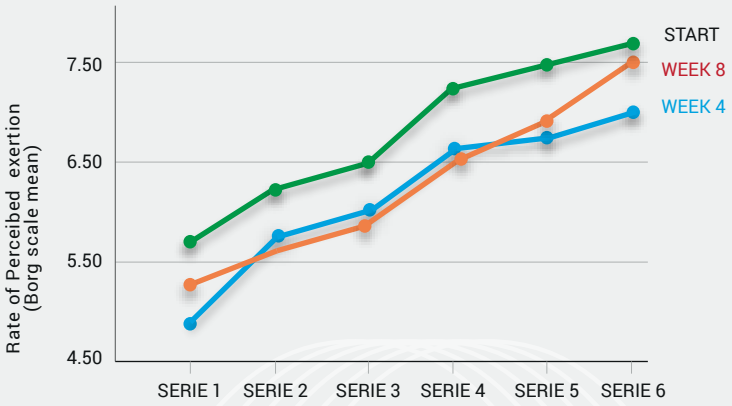
DAILY RATE OF PERCEIVED EXERTION



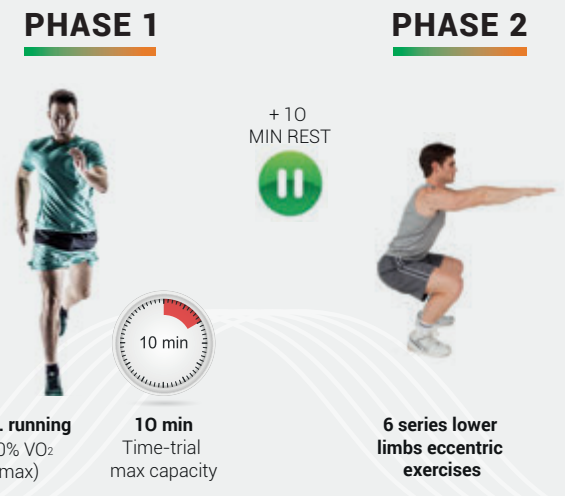
The Rate of Perceived Exertion was evaluated daily both during and after the performance tests through Borg scale, a subjective method to assess one's physical exertion and/or pain level.

Study results have shown a continuous decrease in the subjective feeling of daily exertion with the time of Topendurance® consumption.

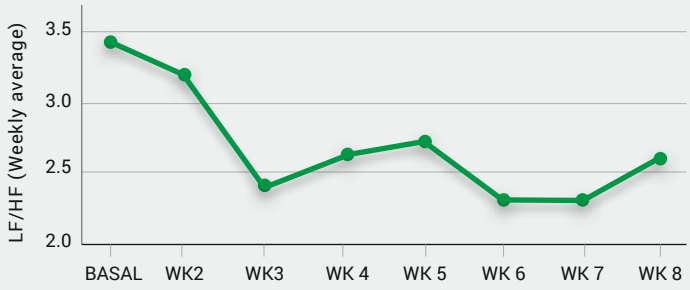
RATE OF PERCEIVED EXERTION AFTER ACUTE ECCENTRIC MUSCLE-DAMAGING EXERCISE (PHASE 2)



Subjects supplemented with Topendurance® showed a lower rate of perceived exertion at the beginning and during the phase 2 test performed both after 4 and 8 weeks of intake of the product compare with the basal conditions.

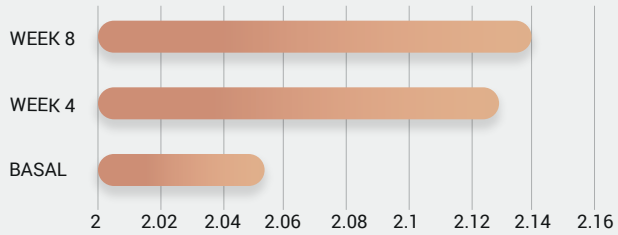


4 HEART RATE VARIABILITY (HRV) IN THE MORNING IN ATHLETES TAKING TOPENDURANCE®



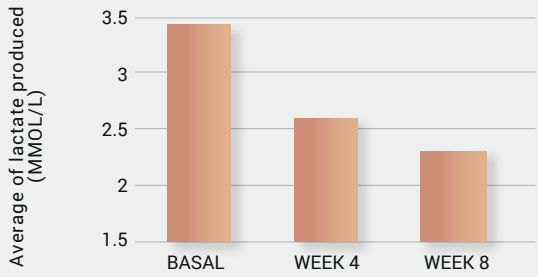
Heart rate variability (HRV) can provide valuable information on the athlete's functional state without requiring exertion. Also, HRV is being used as a new technique in evaluating training responses and tracking recovery and readiness. Since the autonomic nervous system regulates the heart rate, the HRV can be used as a proxy to autonomic function as well as a way to measure how athletes react to stressors (e.g. a workout). At rest, two major components of similar power can be detected at low frequency (LF) and high frequency (HF). High Frequency is a measure of parasympathetic activity, where high HF lowers the LF/HF ratio. A low LF/HF indicates a better adaptation to the exercise.

5 THE PRETRAINING SUPPLEMENTATION WITH TOPENDURANCE® INCREASES THE PERFORMANCE OF ATHLETES



DISTANCE (KM) TRAVELLED IN 10 MIN. TIME-TRIAL

Time-trial (TT) exercise tests are commonly used to assess exercise performance. When evaluating the results obtained by the subjects taking Topendurance®, we observed an increase in the distance traveled in week 4 and week 8 in the 10 min TT test performed after making an effort of long duration (1 hour) and high-intensity exercise.



The blood lactate level during a high intensity and long duration stress test is an indirect indicator of performance where lower levels of lactate indicates better physical preparation. In this sense, the consumption of Topendurance® significantly reduced blood lactate levels produced during the 60-minute and high intensity test after 4 and 8 weeks.

MAIN STUDY CONCLUSIONS

CONSUMPTION OF TOPENDURANCE® FOR 8 WEEKS

- Decreases fatigue perception
- Decreases the subjective perception of effort during the performance of a high intensity and prolonged duration stress test.
- Reduces Post Workout Muscle Soreness
- Improves training tolerance
- Increases performance

www.monteloeder.com/topendurance

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