



**No one does Ashwagandha better than us.
Crafted by experts, benefiting millions.**

KSM-66 Ashwagandha's clinically proven benefits in sports nutrition:

- **Cardiorespiratory Endurance**
- **Natural Testosterone**
- **Muscle Strength**
- **Muscle Mass**
- **Body Composition**
- **Recovery**
- **Stress Resistance**
- **Cognitive Focus, Attention and Information Processing Speed**



KSM-66

What Makes KSM-66 The “World’s Best Ashwagandha”

The most extensive set of research studies and clinical trials

- Ixoreal is the industry leader in clinical trials and basic research investigating the effectiveness of ashwagandha.
- Largest pool of research studies with 24 studies: 10 published studies, 6 additional studies completed and in peer review and 8 ongoing studies.
- Following the gold standard: Double-blind, placebo-controlled, randomized studies.
- Our trials are on healthy populations to mirror our mainstream customer base.
- Our publications are of academia standard, all in PubMed-indexed medicine journals.
- The principal investigators are leading researchers with established publication records.

Tight vertical integration for high quality and price advantage

Ixoreal is the only major branded ashwagandha manufacturer in the world to own the entire value chain in producing the extract. Ixoreal has its own farms, production facilities, testing laboratories, research center and distribution. Nothing is outsourced and no middlemen are involved. As a result, Ixoreal is unmatched in its ability to deliver high-quality ashwagandha with steady supply and batch-to-batch consistency.

Highest Number of Quality Certifications:



Highest Concentration

Created via a process that took 14 years of R&D to develop and refine, KSM-66 has the highest concentration of all major root-only extracts available on the market today. It is produced through a unique proprietary extraction process, based on “Green Chemistry” principles, without using alcohol or any other chemical solvent.

Winner of several Awards and Honors

- “Herbal Industry Leader 2016” by Society for Ethnopharmacology
- “Product Innovation in Botanicals Award” by Frost and Sullivan 2014
- “Best Botanical Ingredient” at Engredea 2013
- “Ingredient of the Year” at Panacea 2012

KSM-66

Ashwagandha and Athletic Performance: Mechanisms of Action

Ashwagandha has proven adaptogenic, antioxidant, anti-inflammatory, stress-relieving, cognition improving and tissue-recovering effects in healthy individuals. The various benefic effects can manifest themselves at the bio-marker level via a reduction of stress-induced cortisol, an increase in testosterone levels, improved Mg^{2+} -dependent ATPase enzyme levels, which are responsible for the breakdown of ATP (adenosine triphosphate), and finally in the improvement in creatine levels which can lead to more effective ATP generation.



Increasing Energy Efficiency

Ashwagandha helps the body regulate vital physiological processes, including the normalization of the stress hormone cortisol. Ashwagandha leads the body to be more energy efficient. It can increase levels of adenosine triphosphate (ATP), the cellular energy currency. Ashwagandha can reduce the enzyme that breaks down ATP, thereby inhibiting the bankrupting of cellular energy currency.



Improving Body Composition

Ashwagandha has been used for thousands of years as a rejuvenating herb that boosts energy, stamina and strength. Recent research demonstrates its potential to metabolize sugars and discourage body fat storage. Ashwagandha may help shift the production of hormones toward more anabolic hormones such as dehydroepiandrosterone (DHEA) and testosterone. Researchers have confirmed this testosterone-building effect of ashwagandha in animal and human studies. Further, ashwagandha has been shown to be helpful in body weight management by reducing stress-induced food cravings.



Increasing Cellular Energy

Not only can ashwagandha decrease the breakdown of ATP, it can also increase cellular energy by boosting levels of succinate dehydrogenase (SDH), an enzyme found in the mitochondria (the part of the cell responsible for cellular respiration). SDH functions not only in mitochondrial cell respiration and energy generation, but also plays a role in tumor suppression. Ashwagandha may increase energy production in muscles by making mitochondria function more effectively, as ATP is produced in the mitochondria. Ashwagandha may also increase creatine levels, which in turn generates ATP, providing rapid energy. Many sports performance nutraceuticals and other products can provide workout enthusiasts with a jolt of energy. Ashwagandha differs in that the energy it provides is often without a subsequent energy crash.



Improving Muscle Mass

Ashwagandha has three pathways contributing to its potential to increase or maintain muscle mass. First, it can reduce cortisol, which is a catabolic agent that detracts from existing muscle mass. Second, ashwagandha can increase testosterone, which helps muscle growth and increase muscle mass beyond the existing state. Third, ashwagandha can reduce recovery time, thereby allowing greater activity and great strength and performance gains per unit time. One theory as to how ashwagandha produces more muscle-building testosterone maintains that when there is an excess of a certain hormone, such as cortisol, the compounds in ashwagandha function as hormone precursors and occupy cell membrane receptor sites. This may prevent cortisol from attaching to cell membrane receptors and exerting its effect. Conversely, if the level of an anabolic hormone, such as testosterone is low, ashwagandha's compounds may exert a supporting effect, allowing actual testosterone in the body to take over.



Promoting Post-Exercise Recovery

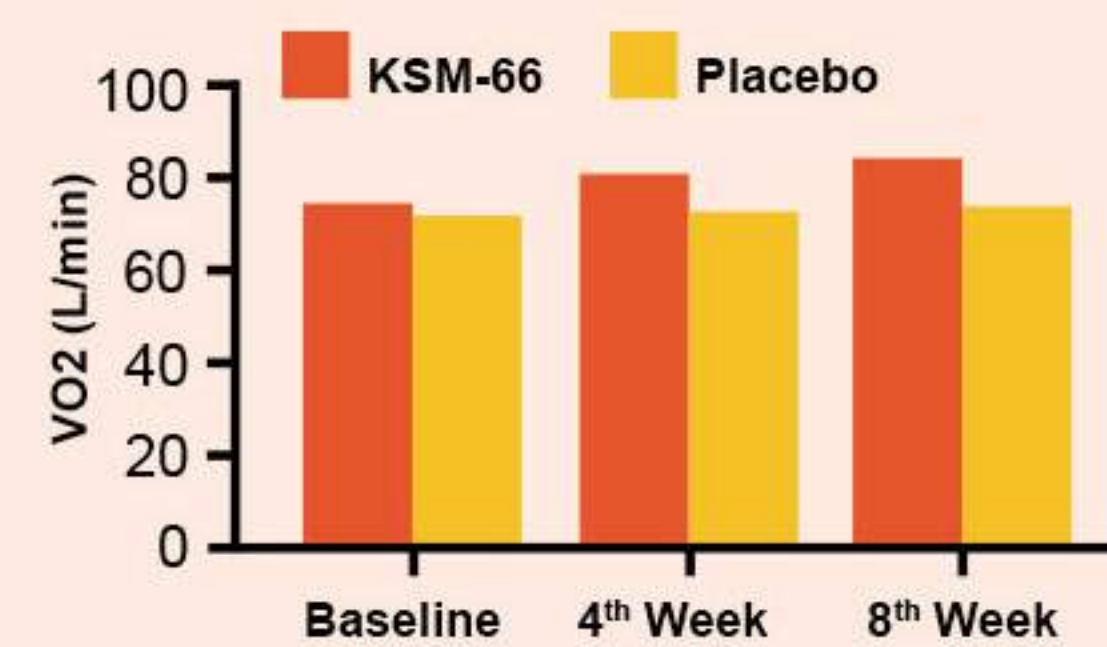
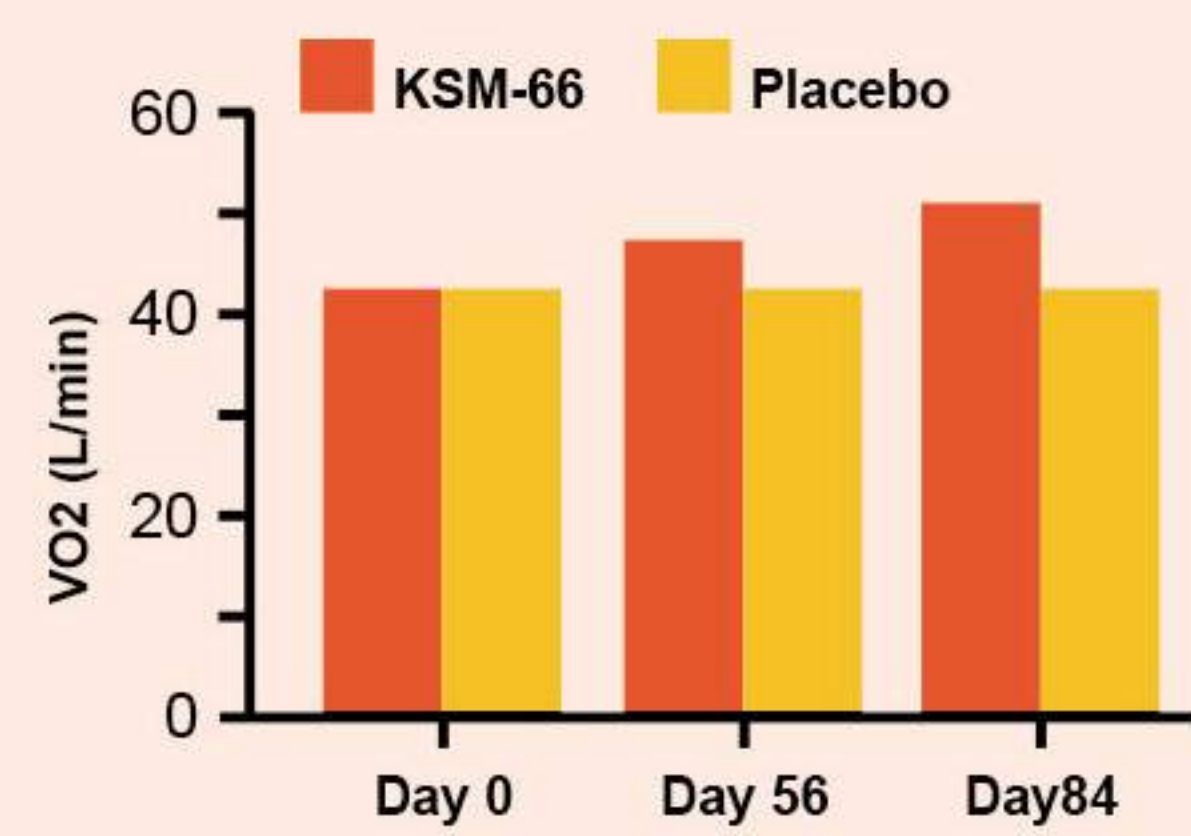
Not only can ashwagandha lead to anabolic enhancement, it can also lead to speed-up of post-exercise recovery. This can be an important benefit because speed-up of recovery means a faster return to training and gains in athletic performance. One study used serum creatine kinase level as a marker of exercise induced muscle damage. The results showed that creatine kinase levels corrected themselves to normal levels much faster under ashwagandha supplementation, demonstrating that ashwagandha can accelerate muscle recovery.

Clinically Proven Benefits of KSM-66 Ashwagandha for Sports Nutrition:

At the Dosage of 300 mg Twice Daily in Randomized, Double-Blind, Placebo-Controlled Trials

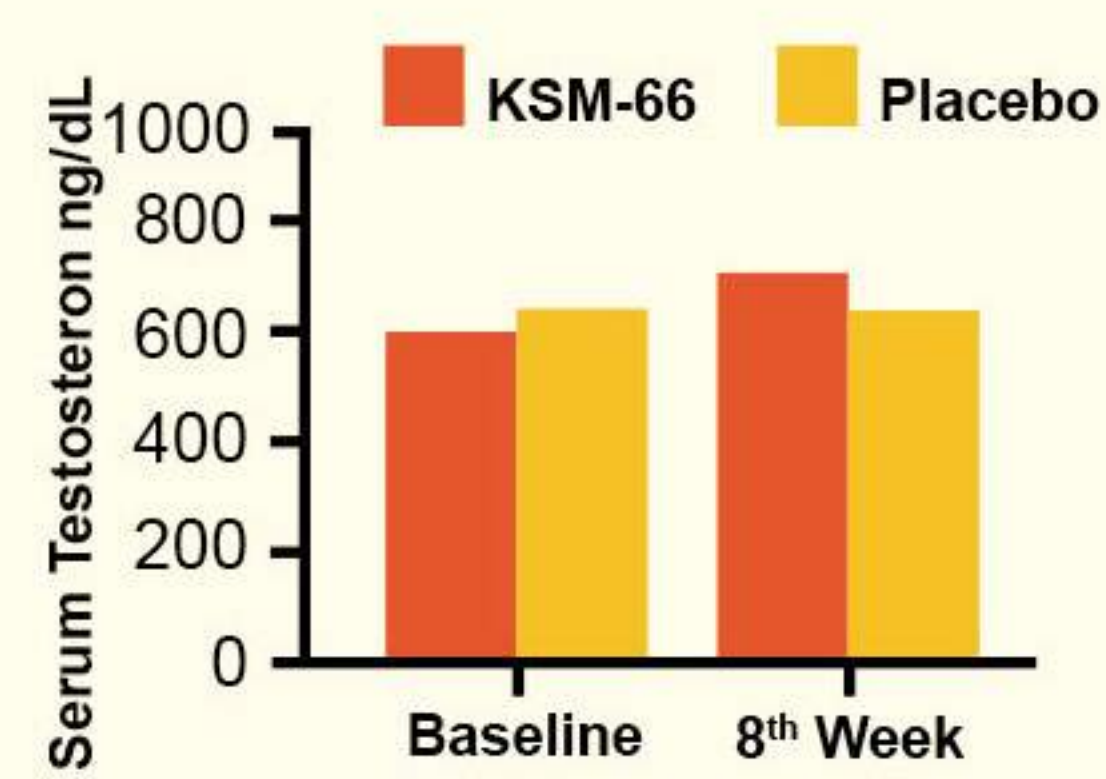
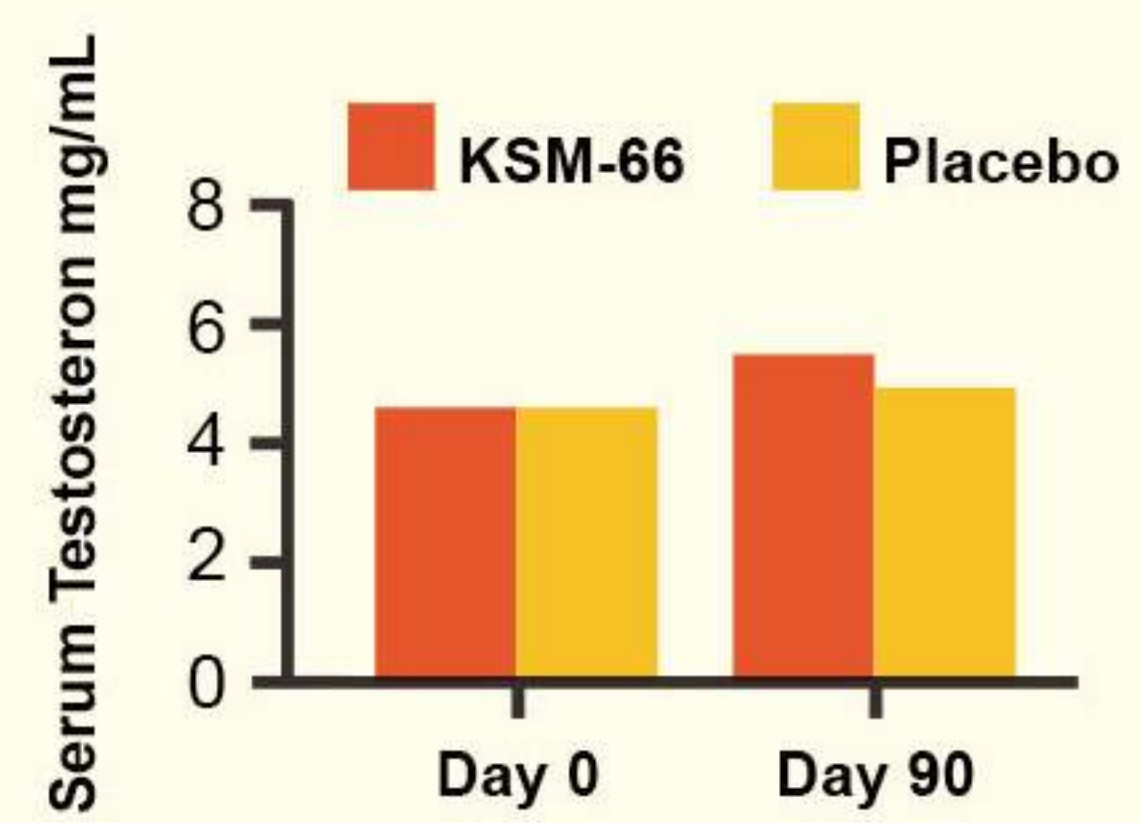
KSM-66 Helps Enhance Cardiorespiratory Endurance

- A 12-week therapy of KSM-66 ashwagandha showed a marked improvement in maximum oxygen consumption ($\text{VO}_2 \text{ max}$) in healthy athletic adults. Significant increases of 11.8% and 13.6% were observed in $\text{VO}_2 \text{ max}$ at Day 56 and Day 84, respectively, in the ashwagandha supplemented group, significant when compared to the placebo group ($p<0.001$).
- In a second study, KSM-66 showed 3.4% and 8.9% increases in $\text{VO}_2 \text{ max}$ after 4 weeks and 8 weeks treatment, respectively, significant when compared to the placebo ($p<0.001$).



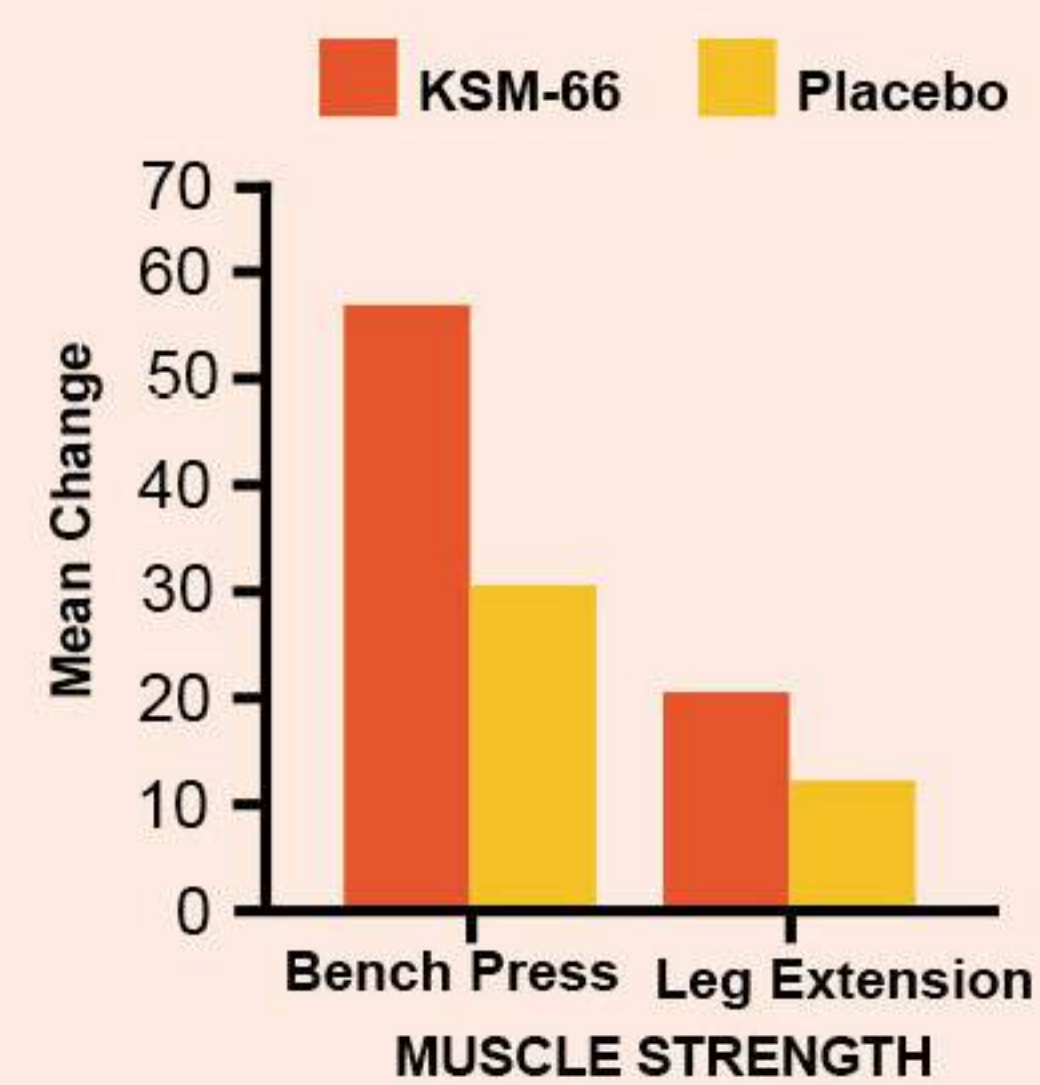
KSM-66 Helps Improve Natural Testosterone in Men

- In a clinical study, therapy with KSM-66 (225 mg thrice daily) showed a 17% increase in serum testosterone levels in the study subjects in 90 days, significant when compared to the placebo ($p<0.001$).
- In a second study, a statistically significant increase of 15.3% in serum testosterone level was noticed at the end of 8 weeks for the ashwagandha group, significant when compared to the placebo group ($p<0.05$).
- Another clinical study with KSM-66 Ashwagandha showed an increase in serum testosterone levels in the treatment subjects, significant when compared to the placebo ($p<0.05$).



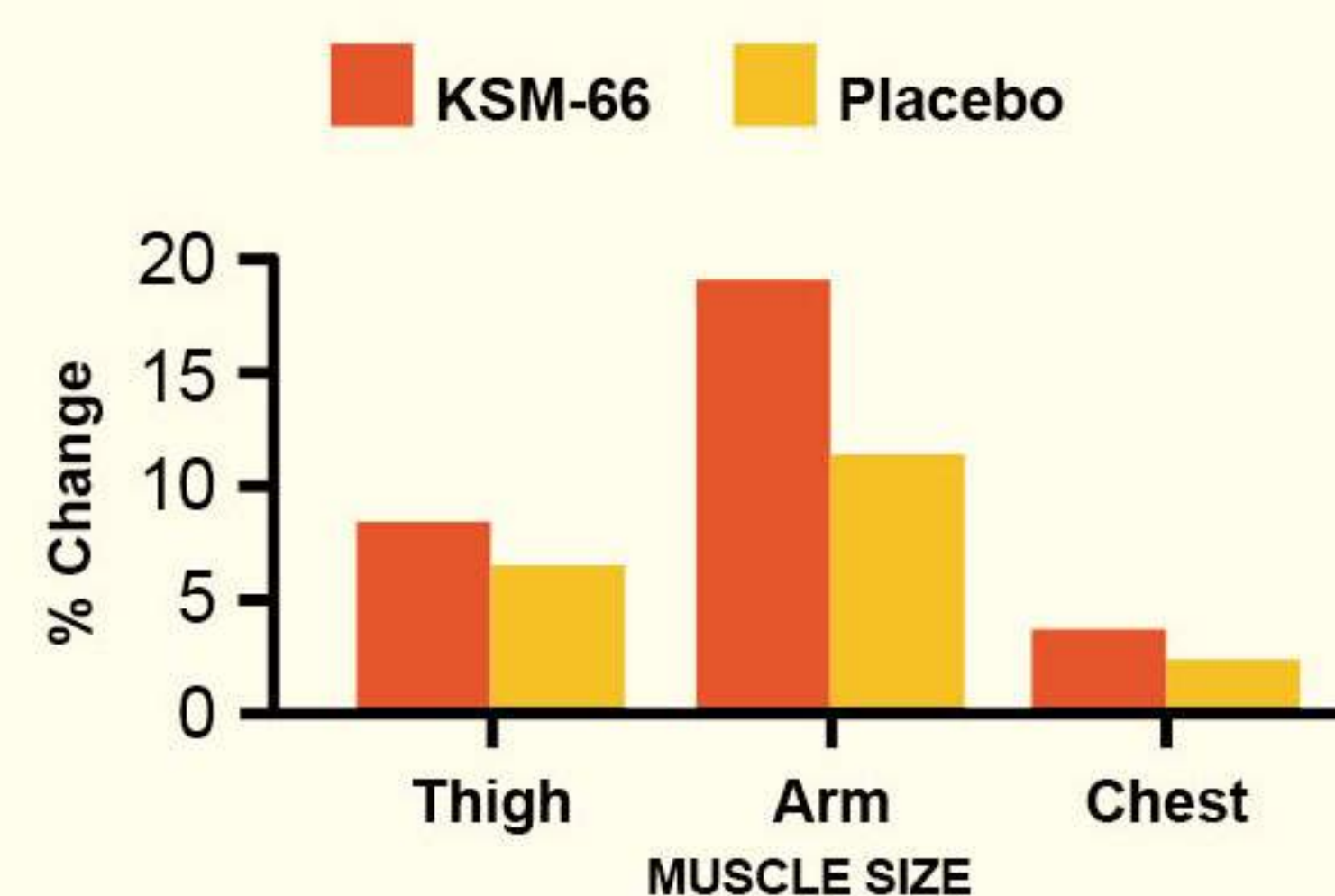
KSM-66 Helps Improve Muscle Strength

- In a clinical trial, KSM-66 supplementation for 8 weeks produced 138.7% and 52% increases in muscle strength for the bench press and leg extension exercise, respectively, significant when compared to the placebo group ($p<0.05$).



KSM-66 Helps Improve Muscle Mass

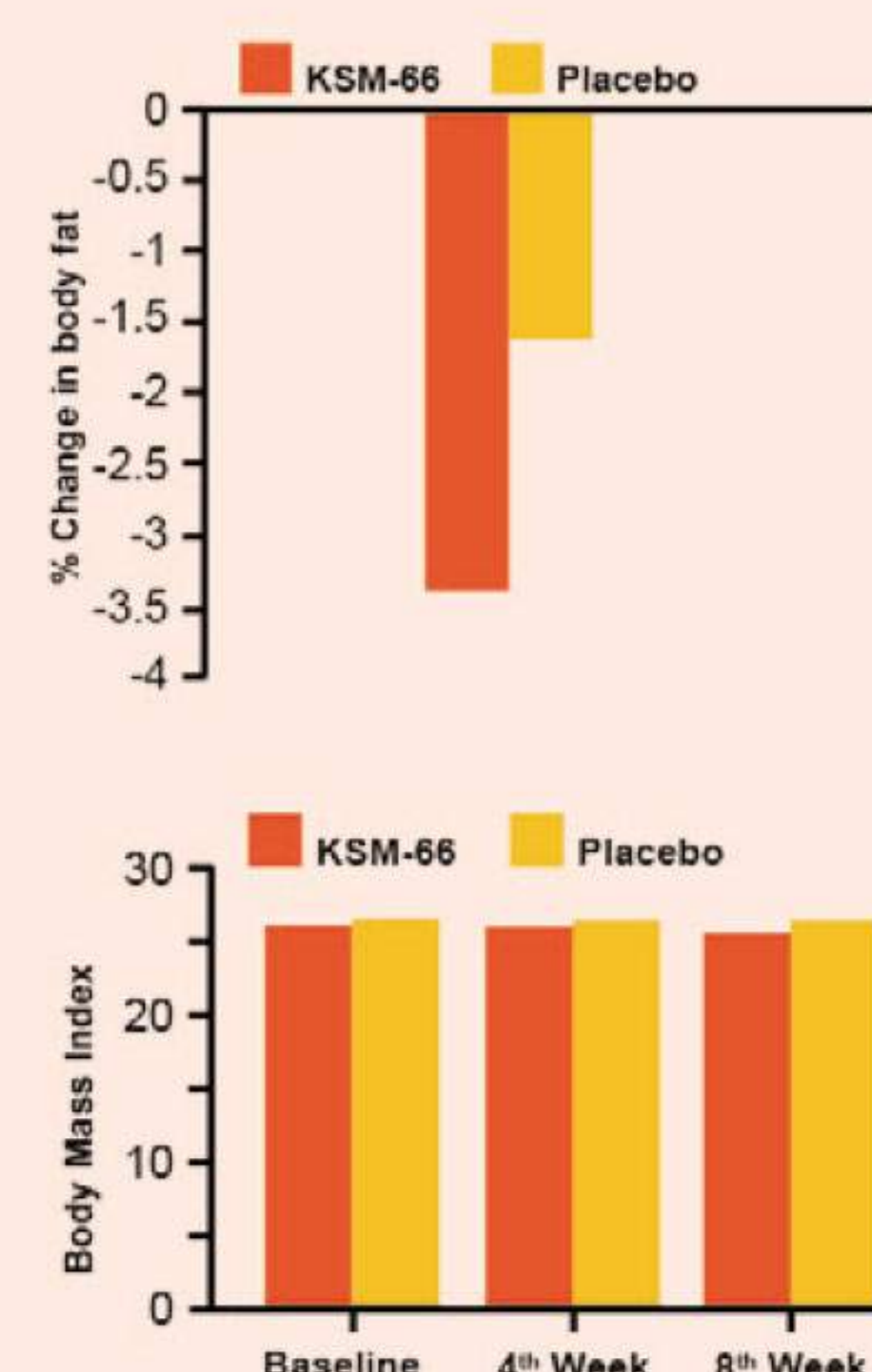
- KSM-66 is clinically proven to increase muscle mass. In a clinical study, KSM-66 supplementation for 56 days showed 8.1%, 17.1% and 3.3% increases in muscle size for thigh, arm and chest, respectively, significant when compared to the placebo ($p<0.05$).





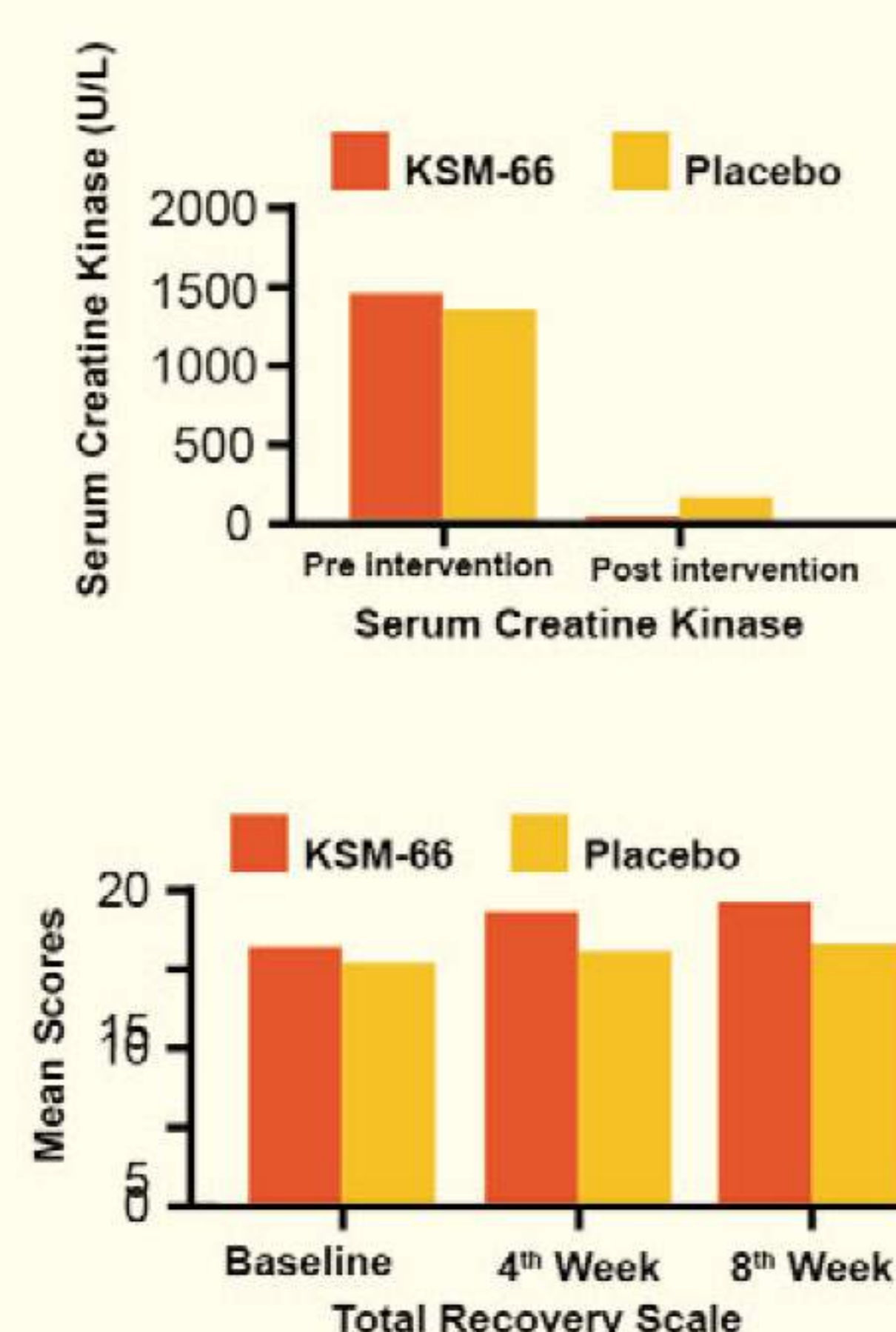
KSM-66 Helps Manage Body Composition

- In a clinical study, KSM-66 ashwagandha supplementation for 8 weeks resulted in a 16% reduction in average body fat, significant when compared to the placebo group ($p < 0.005$).
- Another study demonstrated that an eight-week therapy of KSM-66 produced a marked reduction of 3.0% and 2.9% in body weight and BMI, respectively, significant when compared to the placebo ($p < 0.05$).



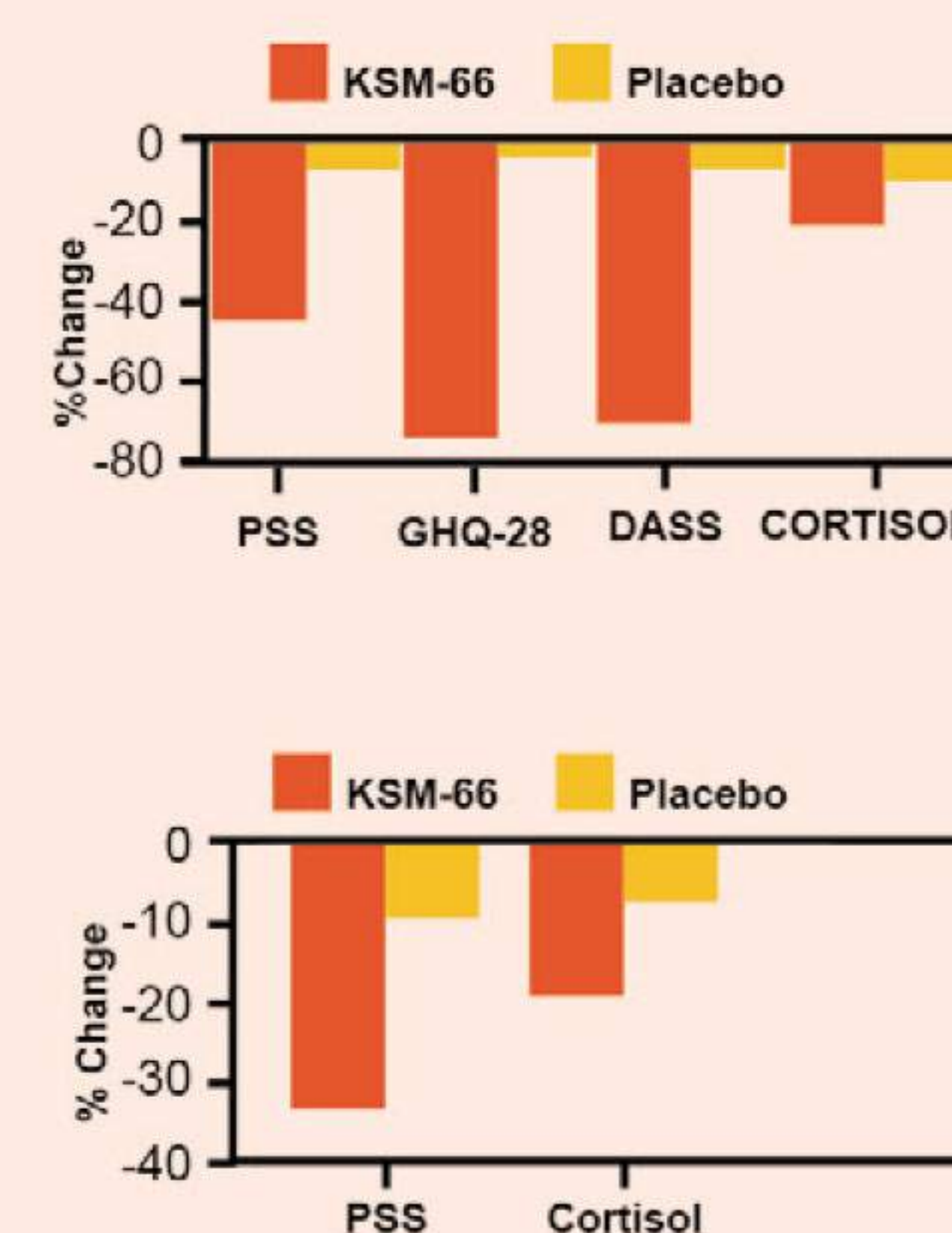
KSM-66 Helps in Recovery in Sports Persons

- An eight-week therapy of KSM-66 ashwagandha caused a substantial improvement in muscle recovery in healthy athletic adults by normalizing the creatine kinase levels (a marker of muscle damage) significantly faster than in the placebo group ($p < 0.001$).
- In a second study, KSM-66 supplementation in healthy athletes showed faster recovery rates against exercise-induced stress and fatigue, significant when compared to the placebo group ($p < 0.001$), as evident from the scores of RESTQ-sports, TQR and DALDA psychometric scales.



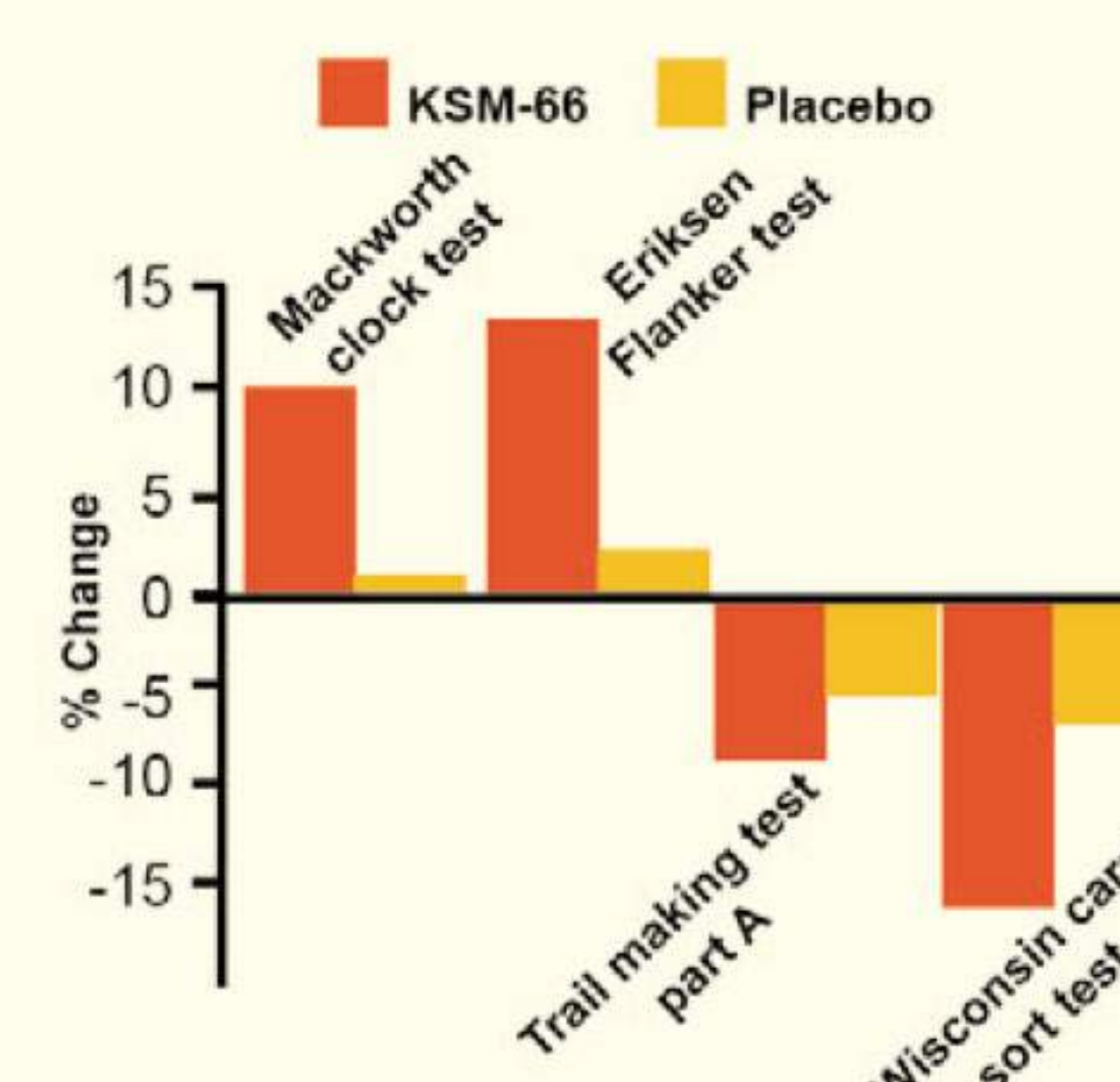
KSM-66 Helps Manage Stress and Anxiety

- In a clinical study, a statistically significant decrease ($p < 0.001$) of 27.9% in serum cortisol level was observed in KSM-66 Ashwagandha supplemented group after 60 days of therapy. KSM-66 supplementation also reduced stress and anxiety as evident by the scores on various psychometric scales (PSS, GHQ-28 and DASS), significant when compared to placebo ($p < 0.001$).
- In a second study, KSM-66 Ashwagandha supplementation produced a significant 22.2% reduction ($p < 0.001$) in serum cortisol level after 8 weeks. KSM-66 supplementation led to a substantial reduction of stress levels as evident by PSS scores, significant when compared to placebo ($p < 0.001$).



KSM-66 Helps in Cognitive Focus, Attention and Information Processing

- An eight-week therapy of KSM-66 ashwagandha markedly improved executive function as evaluated through the Eriksen Flanker Task ($p < 0.01$) and the Wisconsin Card Sort Test ($p < 0.05$), significant when compared to placebo. KSM-66 also improved attention and information processing speed, as evident by the scores of Trail Making Test Part A ($p < 0.05$), and the Mackworth Test ($p < 0.001$), significant when compared to placebo.



Some Sports Brands Featuring KSM-66 in Their Products

GNC
LIVE WELL

ON
OPTIMUM NUTRITION

MUSCLETECH

B
BODYBUILDING.com

WEIDER

CELLUCOR

BEAST
THE STRONGEST NAME IN SPORTS NUTRITION

PERFORMIX

**KAGED
MUSCLE**

**FORCE
FACTOR**
UNLEASH YOUR POTENTIAL

iSatori

**B
S
N**

**MTS
NUTRITION**

**CORE
NUTRITIONALS**

M
drive

OLIMP
SPORT NUTRITION

Hear from the athletes themselves

"Since I've been a child, I've learnt to rely on natural extracts and have learnt the value of extremely good nutrition- I'm relying on KSM-66 during my extremely demanding travel, school and athletic life; it's been a total game changer."

Jordan Romero - World record holder for being youngest climber to conquer Mt. Everest and the seven summits of the world.

"I'm in constant search for the best fuel for my competition and recovery. I've been astounded at the affects that KSM-66 has brought to my program. Clinicals are one thing, but real life race testimony is another. KSM-66 is now a MUST have for me and my athletes."

Paul Romero - Adventure racer of the year, one of the world's top adventure athletes.

"KSM-66 enhances my ability to focus for long hours during my games. Most importantly, it helps me stay calm and composed when under pressure. My sports requires a sustained level of concentration. Thanks to KSM-66, I'm playing harder and performing better."

Aditya Mehta - Asia ranked #1, Snooker gold medalist, Asian games.

IXOREAL BIOMED INC.

USA: +1-310-424-5535

India: +91-40-23554386

info@ixoreal.com

www.ixoreal.com

www.ksm66ashwagandhaa.com



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