

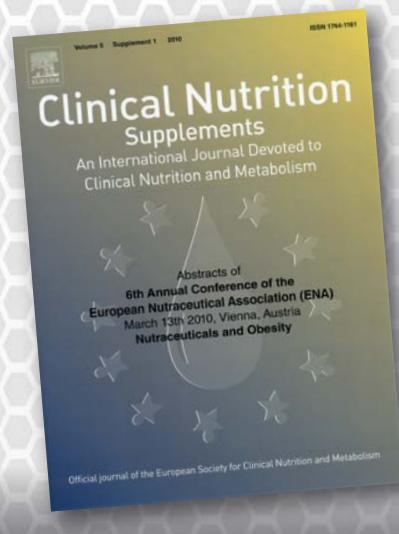


## Xendurance Backs Up Performance Claims Through Multiple Clinical Studies

What distinguishes Xendurance from other sports nutrition companies is that their showcase product, Extreme Endurance, has a published, Gold-Standard, third party, double-blind, placebo-controlled, crossover study backing up claims of 15% reduction in lactic acid and a double digit increase in aerobic threshold. The clinical results of our double-blind study were presented at the 6th Annual European Nutraceutical Convention in Vienna, Austria, March 13, 2010 and are published in the Clinical Journal of the European Society for Clinical Nutrition and Metabolism, (Vol. 5, Supplement 1, 2010).

Many companies make substantial claims on individual ingredients, but Extreme Endurance has a published study on the complete formula, not just the ingredients. "Third party" testing is also important because it means that Xendurance did not know or hire the actual facility who did the testing on this first study, therefore no bias was influencing the outcome.

Xendurance didn't stop with one study. Testing on Extreme Endurance continues within multiple sports and numerous teams.



**Clinical Test Number 1****Extreme Endurance Clinical Test With 22 Elite Athletes****Testing Facility:**

Corpus Diagnostik, Hilpoltstein, Germany  
Dr. Volker Tzscheetzsch and Jürgen Sessner

**Extreme Endurance Clinical Test Protocol**

Twenty-two (22) elite athletes were used in this double-blind, placebo controlled study. After base line testing, each athlete was given dosage protocol and either Product A or Product B.

The first two days dosage was four tablets, two times per day (\*load dosage) and then \*normal daily dosage based on their body weight. (Dosage weight chart was part of their protocol information). Both Product A and B had 11 athletes and were instructed to use the product daily for 10 days during their normal training. At the end of ten days, the same battery of tests were given to all 22 athletes. All 22 athletes were then taken off both Product A and Product B for a 10-day washout period. On the 21st day, all 22 athletes took another base line test and Group A switched to Product B and Group B switched to Product A.

The same dosage protocol was used for the next 10 days, then final testing for all 22 athletes. Results from three athletes were not used in the final statistics as they missed a testing period due to illness or injury.

Parameters	Base test	Placebo	Xendurance
Power at aerobic threshold (Watt)	207,45	210,25	211,81
Heartrate at the aerobic threshold	151,32	149,15	148,10
Power at anaerobic threshold (Watt)	266,64	264,95	263,95
Heartrate at the anaerobic threshold	168,95	165,75	163,86
Power at respiratory quotient = 1 in watt	205,23	235,45	259,29
Max. volume of oxygen per minute depending on bodyweight	53,98	54,84	55,82
Max. power in watt	329,09	324,00	329,52
Max. heartrate	185,09	182,45	180,38
Max. level of lactate (mmol)	9,86	9,91	8,77
Level of lactate 5 minutes after test (mmol)	9,58	10,77	9,81

Jürgen Sessner and Dr. Volker Tzscheetzsch did an additional 30-day usage study on 6 of the original 22 to see if an increase in VO2 Max was possible. Those 6 athletes showed an increase of 1.5% in VO2 Max after 30 days.

**Extreme Endurance Clinical Test Summary**

Twenty-two (22) elite athletes were tested for 10 days to measure improved athletic performance. Eight of the athletes were professional. Six were pro triathletes, one a pro mountain bike racer and one a pro marathon runner. The remaining 14 athletes were elite club athletes in track, soccer, cycling and cross country skiing.

In a relatively short, 10-day test, Extreme Endurance was used on 22 elite athletes. The results showed the average lactic acid reduction was 15% and an increase of aerobic threshold by double digits. All athletes reported less muscle burn and faster recovery with less muscle soreness. Three athletes reported better sleeping and two athletes noticed improvement in their digestion. All of the athletes wanted to continue using the active Product A (Extreme Endurance). Both researchers and the athletes believe a longer test would show improved muscle power and VO2 Max.

**\*Normal daily dosage is now 6 tablets per day; Load dosage is now 8 tablets per day.**

In addition to the lactate concentration 8 other parameters were tested during this clinical trial. Seven of them produced better mean values with Extreme Endurance than without.

### Clinical Test Number 2

#### Open Label Trial for Cross Functional Athletes

Cross-Functional exercise, defined as "constantly varied, high intensity, functional movement," has revolutionized the sport of fitness in an attempt to seek out the world's fittest individuals. Within the generalized programming that Cross-Functional athletes use, there are a series of "Benchmark Workouts" designed to help measure the progress of a cross-functional athlete's development. Among these workouts is 'Fran,' quite possibly one of the most well-known and frequently tested benchmark workouts among cross functional athletes. Fran is a couplet that exercises a 21-15-9 repetition scheme of front squat thrusters (95lbs for men, 65lbs for women) and pull-ups. Due to the metabolic efficiencies needed to complete 'Fran,' and the physiological responses that it elicits, Xendurance chose to highlight this workout and put their showcase product, Extreme Endurance, to the test again.

In September of 2013, Jürgen Sessner, lead researcher at Corpus Diagnostics in Hilpoltstein, Germany, flew out to conduct the test. Jürgen has conducted over 8000 stress tests in his 15-year career and was the lead researcher on the clinical study that was presented at the prestigious European Nutraceutical Association meeting in Vienna, Austria, March 13, 2010 and is published in the European Nutraceutical Journal.

In the open label test conducted at East Valley Crossfit in Chandler, AZ, 11 cross-functional athletes, ages ranging from 22-66 were randomly selected. All athletes met the minimum criteria of at least 10 months of training leading up to the study and were required to complete 'Fran' twice over the course of a 7-day period. Upon being selected for the study, all of the athletes took part in a two-week washout period from all supplements. On day one of the study, a baseline 'Fran' test and blood samples were taken. Athletes were then provided with a 7-day trial of Extreme Endurance and were instructed to take 3 tablets in the morning and 3 tablets in the evening, with or without food. At both the baseline and post supplementation test, athletes had blood taken from the earlobe immediately before, after, and 10 minutes after completing 'Fran.' All 'Fran' times and movement standards were validated by a judge for each of the participating athletes.

After further analysis, the single best and worst performances were omitted from the study to ensure more accurate results. Of the remaining 9 athletes, a 7-day supplementation of Extreme Endurance yielded an average of 6.2% or 22-second improvement on their respective 'Fran' times. All blood samples were analyzed by a Hitaldo Super, GL Biosensor System. Blood tests after a 1-week usage of Extreme Endurance reduced lactate levels by 8.9% immediately post workout and 7.1% 10 minutes post workout when compared to blood samples taken at baseline.



### Xendurance Crossfit Study

*Corplus*

#### Results Test 1 and 2

Subject	Workout time in s		before workout		directly after workout		10 min after workout	
	1	2	1	2	1	2	1	2
1	235	236	1,0	1,1	17,1	11,8	20,6	17,1
2	232	213	1,0	1,1	10,8	11,3	13,8	14,7
3	375	352	1,3	1,3	13,7	12,5	15,7	13,5
4	295	235	1,4	0,8	9,7	11,7	14,7	15,3
5	287	246	1,4	1,3	18,7	12,9	22,6	21,5
6	484	416	1,2	1,1	12,1	12,8	13,4	10,8
7	177	170	1,2	1,5	9,4	9,3	14,1	13,1
8	571	605	0,7	0,5	10,1	11,8	10,9	11,7
9	486	474	1,2	0,8	12,5	9,8	12,1	10,4
Average:	349	327	1,2	1,1	12,7	11,5	15,3	14,2
Change in percent:	<b>-6,21%</b>		<b>-8,65%</b>		<b>-8,94%</b>		<b>-7,11%</b>	

### Xendurance Crossfit Study

*Corplus*

#### Changes between Test 1 and 2

Subject	Workout time in s	Lactate in mmol		
		before workout	directly after workout	10 min after workout
1	1	0,1	<b>-5,3</b>	<b>-3,5</b>
2	<b>-19</b>	0,1	0,5	0,9
3	<b>22</b>	0,0	<b>1,2</b>	<b>2,2</b>
4	<b>60</b>	<b>0,6</b>	2,0	0,6
5	<b>-41</b>	<b>-0,1</b>	<b>-5,8</b>	<b>-1,1</b>
6	<b>-68</b>	<b>-0,1</b>	0,7	<b>-2,6</b>
7	<b>-7</b>	0,3	<b>-0,1</b>	<b>-1,0</b>
8	34	<b>-0,2</b>	1,7	0,8
9	<b>-12</b>	<b>-0,4</b>	<b>-2,7</b>	<b>-1,7</b>
Average:	<b>-22</b>	<b>-0,1</b>	<b>-1,1</b>	<b>-1,1</b>

### Clinical Test Number 3

#### Open Label Trial on Extreme Endurance and Creatine Kinase (CK) Levels in Cross Functional Athletes, Military Warfighters and Firefighters

As reported by the national media\*, Rhabdomyolysis (Rhabdo) is an increasingly, alarming topic among the cross functional community, the military warfighters and firefighters. While this topic is not new to the military warfighters and firefighters, it is taking the cross functional community by surprise. Unlike the day-to-day occupational hazards the military warfighters and firefighters face, this unique style of training has many cross functional athletes discussing the possible repercussions that come with it, namely Rhabdo. Given the growth of the sport and the continued scrutiny that comes with the sport, this disease now has its own mascot, Rhabdo the Clown.

Rhabdo is a dangerous medical condition often associated with strenuous exercise and overuse, infections, crush injuries, elevated or reduced sodium levels, low potassium, unusually high or low body temperature, particular medications, and dehydration (or a combination of factors). And up until now, military warfighters and firefighters were the only groups worried about Rhabdo. We can now add the cross functional athletes to the list impacted by this medical condition.

The breakdown of muscle tissue results in damaged cells entering the blood stream. Myoglobin, a toxic protein released by these cells, is harmful to the kidneys when released in large quantities and can lead to permanent kidney damage, or even kidney failure. Rhabdo is often diagnosed by measuring an enzyme released into the blood by damaged muscle tissue, creatine kinase (CK). It is not abnormal to see CK levels rise above 100,000 U/l in Rhabdo cases.

With the growth of these communities, Xendurance set out to prove that Rhabdomyolysis (muscle trauma) can be minimized. Their scientific study, completed in January 2014 by Jürgen Sessner, showed astonishing results with usage of the sports supplement, Extreme Endurance and the reduction of CK levels, the precursor for Rhabdomyolysis.

In this Open label test, changes in CK levels were tested after a 7-day supplementation period on Extreme Endurance. A group of 31 cross functional athletes, both men and women, ranging in age (from 20 to 48) were chosen for the study. Prior to participating, all athletes who were using Extreme Endurance underwent a 2-week washout period. All the athletes were required to perform "Fran" twice over the course of an 8-day period.

On the first test day, athletes completed "Fran". "Fran" is one of the best known workouts among cross functional athletes. Fran is a back-to-back exercise of a 21-15-9 repetition scheme of front squats thrusters and pull-ups. Due to the metabolic efficiencies needed to complete "Fran" and the physiological response that it elicits, Xendurance once again chose this epic workout for this CK study. After completing the first "Fran" workout, each athlete received their 7-day trial of Extreme Endurance. They were instructed to take a dosage of 3 tablets in the morning, and 3 in the evening, while keeping their current diet and training schedule unchanged. On day 8, the participants returned to complete the second test.

On each testing day, CK levels were tested via blood taken from the index finger and analyzed by a Reflotron Plus System (37°C) immediately pre and post "Fran".

To place Fran in perspective, the increased CK levels associated with Fran could be equivalent to the CK levels a firefighter may experience on the front lines fighting a fire or a Military Warfighter during training. All three events have the ability to increase your CK level.

### **Results:**

Upon analysis of the data, the results showed that after a 7-day supplementation period on Extreme Endurance, a decrease by an average of 16.9% (33.1 U/l) in CK levels pre-workout and a 63.55% (32.6 U/l) decrease in CK levels after completing Fran were recorded. In addition, none of the athletes who participated recorded CK levels that would indicate the onset of Rhabdo. 29 of 31 athletes performed better in the second workout with an average of 8.55% or 32 seconds faster and all 31 athletes reported a quicker recovery.

### **Summary:**

By looking at the results from this open label test, it can be concluded that Extreme Endurance is affective in decreasing muscle trauma and decreasing recovery time as indicated by lower CK levels. This means less muscle damage, safer training, and a quicker recovery and allows more training load in both short and long term.

### **Equipment:**

CK analysis by Reflotron (Enzymatic testing system at 37\*)

#### Xendurance Crossfit CK Study

*Corplus*

##### Results Test 1 and 2

Subject	Workout time in s	CK in U/l at 37°C			
		Test 1		Test 2	
		1	2	before	after
1	515	476		100	150
2	331	274		80	75
3	538	443		447	489
4	753	219		148	248
5	321	256		165	111
6	139	133		289	398
7	209	160		259	258
8	510	448		85	137
9	423	371		122	161
10	389	346		114	129
11	371	357		117	148
12	391	322		380	497
13	302	298		309	308
14	179	166		169	185
15	357	337		80	95
16	302	283		181	191
17	437	394		106	195
18	540	590		86	91
19	508	545		208	256
20	235	220		344	281
21	560	522		192	232
22	363	315		176	185
23	440	480		75	94
24	330	286		510	587
25	158	140		389	490
26	186	162		56	237
27	470	430		118	192
28	379	302		238	273
29	528	455		95	108
30	402	374		141	280
31	235	228		294	394
Average:	365	333		195,9	247,2
Change in percent:	-8,55%			26,16%	11,45%
Change in numbers:	-32s			51,3	18,7
Improvement:				63,55% less CK increase	

### Pre-Workout



### Post-Workout



In addition to our own studies, several companies and sports teams have conducted their own studies and analysis of Extreme Endurance

- Shimano Japan - Largest Bike Company in the world
- Paul Lange & Co. - Largest Distributor of Bike Parts in the EU
- US 20 Mens National Soccer Team
- US National Mens Soccer Team 2014
- DC United Major League Soccer Team
- Cycologic - A Cycling, Science Testing Facility