

# Short-term effects of BCAA, Arginine and CLA supplementation on rest energy expenditure and body composition.



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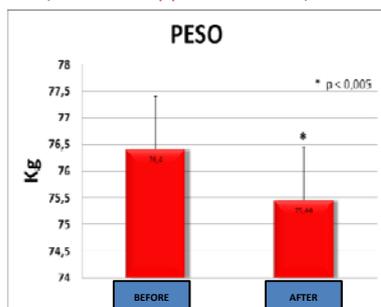
**Background** – Previous works assumed that the BCAA (branched- chain amino acids), L- arginine and CLA (conjugated linoleic acid) supplementation may affect rest energy expenditure (REE) and the decrease of fat rate.<sup>1,2,3,4</sup>

This study aims at testing whether these substances can actually increase rest energy expenditure and improve body composition. **Methods and results** – 25 healthy volunteers, aged  $29,8 \pm 7,4$  years have been tested. (22 men, 3 women among athletes, sportsmen/sportswomen, sports-practicing subjects and inactive subjects: in general all active). All subjects started a normocaloric and balanced diet 1 week before the first calorimetry test, keeping it on till the 2° test. They began the supplementation with two products available in the market: X-Treme CLA and X-Treme NOX, (Inkospor Italy Ltd). One, CLA, contains conjugated linoleic acid and the other, NOX, contains branched-chain amino acids, arginine, green tea extracts, caffeine and vitamin C. Volunteers have been given the above mentioned integrators for two weeks. Rest energy expenditure (REE kcal/day), free mass rate (FFM %), fat mass rate (FM %), body weight (Kg) and BMI ( $\text{Kg}/\text{m}^2$ ), have been monitored before and after the two week cycle.

### Evaluation 1

**Weight variation** (kg) before and after (2 weeks supplementation)

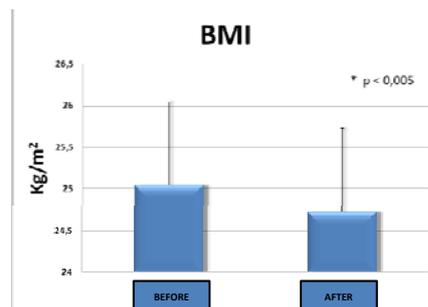
Weight decreased after treatment with nutritional supplements  
-1,246 % (P:0.0007)  
Mean change: -0,953kg



### Evaluation 2

Changes in BMI ( $\text{kg}/\text{m}^2$ ), before and after two weeks of supplementation

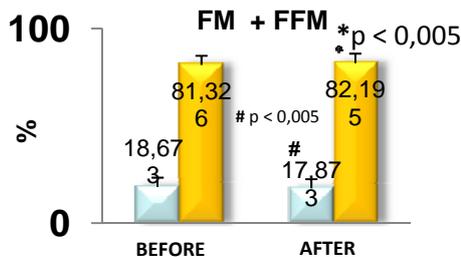
Results:  
BMI decreased in percentage : - 1,24 %  
Mean change: -0,313  $\text{kg}/\text{m}^2$  (P: 0.000572)



### Evaluation 3

Changes in FM e FFM (%), before and after two weeks of supplementation

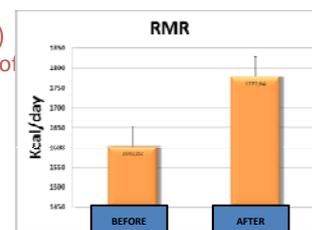
(FM)p= 6,99943<sup>-7</sup>  
(FFM)p= 4,4551<sup>-5</sup>  
Changes in %:  
(FM) -4,28 %  
(FFM) +1,07%



### Evaluation 4

Changes of resting metabolic rate (RMR) (kcal/day), before and after two weeks of supplementation

Changes in percentage: + 10,90%  
Mean changes: + 174,8 kcal/day (p: 0,0179)



**Discussion** - The results about REE and slight variations on body composition due to the two supplements intake are consistent with this study. We are convinced that the action of the ingredients taken singularly is not clear/evident. Even if the calorific increase of rest energy expenditure (REE) is slight, we think that it can help subjects control their weight. The combination between a balanced diet and adequate physical activity may benefit the fat mass decrease and the improvement of body composition in sportsmen and inactive subjects. Even though the results are encouraging, medium- and long- term studies on this data are required in particular on rest energy expenditure and its variables affecting calorimetry. Other studies are necessary to confirm our result in the long term and to understand the specific action of these substances.

### References:

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