CordyMax enhances aerobic capability, endurance performance, and exercise metabolism in healthy, mid-age to elderly sedentary humans

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Abstract
Previous studies of oral supplementation with CordyMax (CM), a proprietary mycelial fermentation product of the Cordyceps sinensis, have demonstrated significant improvements in aerobic capacity in older humans and in exercise performance and metabolism in elite athletes (JACM 2001;7:231; FASEB 2002;16:A628). This randomized, double-blind clinical study further examined the effect of CM on endurance parameters in healthy, sedentary adults. Subjects (40-70 yrs old) received either CM (n=81) or placebo (P; n=70) for 12 weeks. VOpeak, respiratory exchange ratio (RER), time to complete a 1-mile walk (TMW), and work output (WO) by Jeukendrup bike test were examined at Weeks 0, 6, and 12. VOpeak was increased by 5.5% in CM (p=0.003), but by only 2.9% in P (NS). Exercise time to VOpeak was longer in CM (+4.1%, p=0.047), but no change in P. TMW was reduced by 29 sec in CM (p=0.05), but slightly increased in P (+19 sec, NS). WO was increased by 3.1% in CM (p=0.033), but fell in P (-4.9%, NS). RER was reduced by 2.1% in CM (p=0.018), but no change in P. Diastolic blood pressure was reduced by 5.2% in CM (p=0.045), but no change in P. Consistent with previous findings in healthy, elderly and athlete individuals, these data indicate that oral CM supplementation improves aerobic capability, exercise metabolism, and endurance performance in healthy, mid-age to elderly sedentary humans. Supported by a grant from Pharmanex.

Introduction
- CordyMax improves glucose metabolism (fasting blood glucose and insulin, improving oral glucose tolerance and facilitating insulin recovery, insulin sensitivity) (J Alternat Comp Med 8:369-374 & 315-323, 2002). (Berk.) Sacc. 冬虫夏草

Cordyceps sinensis (Berk.) Sacc. 冬虫夏草 (Collected from Qinghai-Tibetan plateau of China)

- CordyMax improves aerobic capability (VOpeak, anaerobic threshold, maximal ventilation) in older humans (Chinese J Gerontology 20:297-298, 2001); improves cardiovascular and metabolic capacity during exercise in highly-fit athletes (FASEB J 16:A628, 2002).

Experimental Design
- Randomized Double-Blind
- Placebo Controlled
- Placebo group (n=70) (3 g/day)
- CordyMax group (n=61) (3 g/day)

Inclusion Criteria:
Healthy, sedentary males & females
Age: 40 - 70 years

Exclusion Criteria:
- Active exercise
- Orthopedic limitations
- History of heart or other diseases
- Ischemia during the exercise tests
- Recent major surgeries
- Tobacco smokers
- BW >40% or <20%Metropolitan Life Insur Tables etc.

Baseline characteristics of subjects at randomization:
- Placebo: 53.6 ± 0.93
- CordyMax: 53.9 ± 0.92
- p=0.840
- Body Weight (kg): 78.2 ± 1.86 (75.9 ± 1.65, 0.357)
- Peak VO2 (ml/kg/min): 28.5 ± 1.30 (28.5 ± 1.65, 3.82, 0.810)
- Heat Rate (bpm): 64.4 ± 1.00 (67.2 ± 1.05, 0.427)

Summary
- Oral supplementation with CordyMax for 12 weeks in healthy, sedentary subjects:
  - Body weight
  - Diastolic blood pressure
  - During IWR maximal exercise:
    - Peak VO2
    - Time to AT or VOpeak
  - During CWR endurance exercise:
    - Exercise work output
    - Time for 1-mile walk
    - RER

Conclusion
- Our findings suggest that oral CordyMax supplementation for 12 weeks improves aerobic capability, exercise metabolism, and endurance performance in healthy, mid-age to elderly, sedentary humans.