



老年人的运动与抗氧化补剂

Mari Carmen Gomez-Cabrera ^{a,*}, Beatriz Ferrando ^a, Thomas Briocche ^b, Fabian Sanchis-Gomar ^a, Jose Vina ^a^a 西班牙巴伦西亚大学生理学系, 医学系^b 法国雷恩大学体育与健康科学实验室

Exercise and antioxidant supplements in the elderly

Mari Carmen Gomez-Cabrera ^{a,*}, Beatriz Ferrando ^a, Thomas Briocche ^b, Fabian Sanchis-Gomar ^a, Jose Vina ^a^a Department of Physiology, Faculty of Medicine, University of Valencia, Fundacion, Investigacion Hospital Clinico Universitario/INCLIVA, Valencia 46010, Spain^b Laboratorv "Movement Sport and Health Sciences". University of Rennes. Rennes FA1274. France

- [摘要](#)
- [参考文献](#)
- [相关文章](#)

全文: [PDF \(507 KB\)](#) HTML 输出: [BibTeX](#) | [EndNote \(RIS\)](#) [背景资料](#)

摘要 运动和衰老都能使活性氧(ROS)增多,造成细胞损伤。衰老通常由在有丝分裂后细胞中ROS对线粒体基因组造成损伤引起,大量研究表明,ROS及其附属物会因运动而增加。ROS在压制抗氧化细胞防御时会引起氧化应激。因此,以限制或抑制ROS生成为目的的干预措施,例如抗氧化维生素补剂,可减轻肌肉收缩时的疲劳感,从而使衰老形成速度随衰老速度和疾病发病机制而降低。然而,ROS已被证明是促进运动和长寿健康必需的基本信号分子。对于年轻人而言,要让骨骼肌正常产生力量、生成耐力训练引发的适应力和形成内源性防御系统,ROS都必不可少。因此,年轻运动员在运动训练中摄取抗氧化剂似乎是有害的。但抗氧化物补剂对积极锻炼的老年群体可能有益,而且正逐渐受到关注。本文综述了与这一主题相关诸领域的文献资料。

关键词: 适应 衰老 抗氧化剂 NF-kB 氧化应激 PGC-1 α 骨骼肌

Abstract: Both exercise and aging increase reactive oxygen species (ROS), which can result in damage to cells. Aging is the result of damage caused by ROS to the mitochondrial genome in post mitotic cells and numerous studies have demonstrated an increase in ROS or their byproducts with exercise. ROS can cause oxidative stress as they overwhelm the antioxidant cellular defenses. Therefore interventions aimed at limiting or inhibiting ROS production, such as supplementation with antioxidant vitamins, should be able to reduce fatigue during muscle contraction and the rate of formation of aging changes with a consequent reduction of the aging rate and disease pathogenesis. However, it has been shown that ROS are essential signaling molecules which are required to promote the health benefits of exercise and longevity. In young individuals, ROS are required for normal force production in skeletal muscle, for the development of training-induced adaptations in endurance performance, as well as for the induction of the endogenous defense systems. Thus, taking antioxidants during training, in young athletes, seems to be detrimental. However, antioxidant supplementation may be expected to be beneficial and is receiving growing attention in the active old population. In this manuscript we review the literature associated with the main areas of interest in this topic.

Significant point: Both exercise and aging increase Reactive Oxygen Species (ROS), which can result in damage to cells. However, the convenience of supplementing with antioxidant vitamins in the old sport population is nowadays, as in the young population, an object of debate.

Key words: Adaptations Aging Antioxidant enzymes NF-kB Oxidative stress PGC-1 α Skeletal muscle

收稿日期: 2012-11-28; 出版日期: 2013-03-04

通讯作者: 西班牙巴伦西亚大学生理学系, 医学系 E-mail: carmen.gomez@uv.es

引用本文:

Mari Carmen Gomez-Cabrera, Beatriz Ferrando, Thomas Briocche等. 老年人的运动与抗氧化补剂[J]. 《运动与健康科学》(英文版), 2013, 2(2): 94-100.

Mari Carmen Gomez-Cabrera, Beatriz Ferrando, Thomas Briocche et al. Exercise and antioxidant supplements in the elderly[J]. Journal of Sport and Health Science, 2013, 2(2): 94-100.

服务

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [E-mail Alert](#)
- ▶ [RSS](#)

作者相关文章

- ▶ [Mari Carmen Gomez-Cabrera](#)
- ▶ [Beatriz Ferrando](#)
- ▶ [Thomas Briocche](#)
- ▶ [Fabian Sanchis-Gomar](#)
- ▶ [Jose Vina](#)

- [1] Hai Bo, Ning Jiang, Li Li Ji, Yong Zhang. 衰老中的线粒体氧化还原代谢: 运动干预的影响[J]. 《运动与健康科学》(英文版), 2013, 2(2): 67-74.
- [2] Sataro Goto, Zsolt Radak. 衰老中蛋白质和DNA氧化损伤的影响及其通过热量摄入限制与锻炼产生的干预[J]. 《运动与健康科学》(英文版), 2013, 2(2): 75-80.
- [3] Chounghun Kang, Li Li Ji. PGC-1 α 在肌肉功能和衰老中的作用[J]. 《运动与健康科学》(英文版), 2013, 2(2): 81-86.
- [4] Zsolt Radak, Orsolya Marton, Eniko Nagy, Erika Koltai, Sataro Goto. 体育运动与活性氧对大脑的复杂作用[J]. 《运动与健康科学》(英文版), 2013, 2(2): 87-93.

访问量: 40416

沪ICP备05052054号

Copyright © 2011 Journal of Sport and Health Science

Tel: +86-21-51253133, 51253135 Fax: +86-21-51253133 E-mail: jshs@sus.edu.cn