

# 國立臺中教育大學 109 學年度研究所碩士班招生考試

## 運動科學概論試題

(含運動生物力學及運動生理學)

適用系所：體育學系碩士班（運動科學組）

一、解釋下列英文專有名詞（每題 3%，共 30%）

1. Respiratory exchange ratio(RER)
2. Maximal repetition (RM)
3. Delayed onset muscle soreness(DOMS)
4. Excess post-exercise oxygen consumption(EPOC)
5. Motor unit
6. Sliding filament theory
7. Krebs cycle
8. Ketogenic diet
9. Cardiac output
10. Stroke volume

二、閱讀下列英文摘要後回答問題

### Abstract

Previous studies demonstrated that resveratrol (RES) was able to enhance antioxidant, anti-inflammatory and insulin actions in mice and humans. However, it is not thoroughly investigated whether resveratrol could serve as ergogenic aids for athletes during competition periods. Therefore, this study aimed to investigate whether oral resveratrol supplementation could blunt oxidative stress, inflammation, exercise-induced fatigue in turn to promote endurance performance. Eight male athletes (aged  $69.2 \pm 10.5$  years; BMI.  $23.3 \pm 1.8$ ) participated in this single-blind crossover designed study and randomly instructed to receive three times of either oral resveratrol capsules (500 mg per day, totally 3 days) or placebo 60 minutes prior to a cycling exercise challenge at 80%  $VO_{2max}$  with 60 rpm, and total cycling performance time were recorded. Blood samples were obtained to analyze the changes in blood glucose, plasma non-ester fatty acid, serum lactate dehydrogenase (LDH), creatine kinase (CK), uric acid (UA), total antioxidant capacity (TAC), malondialdehyde (MDA), reduced glutathione (GSH), oxidized glutathione (GSSG), tumor necrosis factor (TNF), and interleukin-6 (IL-6). The results have shown that oral resveratrol supplementation couldn't blunt the response of oxidative stress, inflammation and attenuate subsequent exercise-induced fatigue, as well as fail to

promote endurance performance. This study suggests that resveratrol cannot be served as ergogenic aid to alleviate the exercise-induced fatigue during high intensity cycling exercise.

Keywords: Exercise, Fatigue, Ergogenic aid

1. 這篇研究論文的研究目的？(4%)
2. 研究方法中提到的增補劑為何？(2%) 以何種形式補充？(2%) 每天補充劑量？(2%) 補充幾天？(2%)
3. 受試者接受運動挑戰描述，何種運動挑戰？(2%) 運動強度？(2%) 運動多久？(2%)
4. 這篇研究論文的結論？(2%)

三、運動生物力學為運動科學領域重要科目，請簡述其主要研究範疇(15%)及目的。(10%)

四、試簡要分析影響恢復係數的因素。(25%)

國立臺中教育大學 109 學年度研究所碩士班招生考試  
體育概論（含體育學原理及體育行政管理）試題

適用系所：體育學系碩士班（運動人文社會組）

- 一、體育行政管理為人文社會科學領域重要科目，請論述其主要研究範疇。(25%)
- 二、請論述運動全球化論者 Maguire (1999)所建構的全球運動流動圖景。(25%)
- 三、請闡述發生特殊傳染性肺炎（武漢肺炎）等傳染性疾病對臺灣之核心及周邊運動產業的影響。(25%)
- 四、何謂體育行政組織及運動團體？請闡述臺灣體育行政組織及運動團體之分類。(25%)