

# 臺北市立大學

## 107 學年度研究所碩士班入學考試試題

班 別：運動健康科學系碩士班  
科 目：英文（運動健康相關議題）  
考試時間：90 分鐘【10：30—12：00】  
總 分：100 分

不得使用計算機  
或任何儀器。

※ 注意：不必抄題，作答時請將試題題號及答案依照順序寫在答卷上；限用藍色或黑色筆作答，使用其他顏色或鉛筆作答者，所考科目以零分計算。（於本試題紙上作答者，不予計分。）

請按照文章內容以中文回答下列題目：（共 100 分）

1. 列出 2017 年的報告所顯示之有關鐵人三項參賽者死亡及心臟停止之重要資訊。(40%)
2. 游泳比賽的注意事項有哪些？(20%)
3. 游泳訓練的注意事項有哪些？(20%)
4. 有哪些症狀的人在運動前需先與醫師討論？(20%)

### Thinking about training for a triathlon?

Whether you're a lifelong fitness enthusiast or returning to exercise after a hiatus, training for a triathlon could be a welcome way to focus your workout. These competitions, which combine swimming, bicycling, and running, have grown in popularity in recent years, including among older adults. According to USA Triathlon, the sport's governing body, more than 40% of all members are in the 40-to-59 age group - and some are in their 80s.

However, a recent study documenting the odds of dying during these events may have given pause to some would-be triathletes. That's unfortunate, because the risk is really, really low, says Dr. Aaron L. Baggish, director of the Cardiovascular Performance Program at Harvard-affiliated Massachusetts General Hospital. "These findings shouldn't scare people away from doing triathlons. But the study does identify some issues about these events that are worth understanding," he says.

### Death and cardiac arrest in triathletes

To understand better the risks associated with triathlons, researchers collected information about death and cardiac arrest among more than nine million people who participated in these events from 1985 to 2016.

Here are highlights of their findings, which were published Oct. 17, 2017, in *Annals of Internal Medicine*.

- There were 107 sudden deaths, 13 cardiac arrests that responded to resuscitation, and 15 trauma-related deaths.
- Most of the sudden deaths and cardiac arrests occurred during the swimming segment.
- Of those who died, 85% were men, with an average age of 47.
- Over all, the estimated risk of death or cardiac arrest was less than two per 100,000 people.
- The risk for men older than 60 was about 19 per 100,000 people.

### **Swimming strategies**

The first leg of a triathlon, the swimming segment, is when people are most likely to get into trouble, says Dr. Baggish. Many factors make triathlon swimming risky, including the possibility of swimming-induced pulmonary edema. This rare condition, which can occur during exertion while swimming or diving, causes fluid from the blood to leak into the air spaces of the lungs.

Another issue is the heart-pumping adrenaline surge people experience at the start of a race, which may be bolstered by the stress of jumping into cold water. Always try to acclimate by warming up in the water. If you're a first-timer or not a strong swimmer, move to the side of the pack or start at the back. This helps to minimize physical contact with other swimmers, which can be jarring, Dr. Baggish advises.

Most triathlon swims take place in open water (a pond, lake, or ocean), so be sure to train in that setting, ideally with a group of people. And practice in your wet suit, if needed. People don't always realize that a wet suit may compress your chest and limit your arm mobility.

### **Hidden heart problems?**

Another notable discovery came from autopsy results, which were available on 61 people who died during triathlons. Almost half had evidence of cardiovascular abnormalities, most commonly fatty plaque in the heart arteries. These findings are a reminder of the importance of talking with your doctor before starting any exercise regimen, especially if you have any risk factors for heart disease, such as high blood pressure, elevated cholesterol, or a family history of heart disease, says Dr. Baggish. For many middle-aged and older people - for example, a 50-year-old casual exerciser with any type of cardiac risk - an exercise stress test before starting triathlon training would be a good idea, he says. During this test, you exercise on a treadmill while under close supervision with heart monitoring.

People with clogged heart arteries may not recognize the early symptoms of heart disease, such as shortness of breath or chest pain (angina). In fact, they may mistakenly believe those symptoms are normal during intensive exercise, particularly if they're not in good physical shape, says Dr. Baggish. Breathlessness can be hard to assess, since some degree is appropriate. Pay close attention to your body, which will help you notice breathing that seems disproportionately labored. And any form of chest pressure or tightness is a red flag, he stresses.

But Dr. Baggish, who's done many triathlons himself, notes that avoiding

exercise is much more dangerous than training for a triathlon. If an average of one of every 50,000 people dies during a triathlon, that still means there are 49,999 people who train for the race and usually finish it, he points out. "Most of them have an amazing experience and end up healthier because of it," he says.

**Source**

Harvard Health Publishing. (2018). *Thinking about training for a triathlon?*

Retrieved February, 2018, from Harvard University, Harvard Health Publishing Web site:

<https://www.health.harvard.edu/heart-health/thinking-about-training-for-a-triathlon>