

受験番号	
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2017年度 立命館大学大学院  
スポーツ健康科学研究科【博士課程後期課程】  
入学試験問題

筆記試験 英語

試 験 時 間
11:00 ～ 12:30 (90分)

2017年2月12日（日）

持込許可物件：外国語辞書（ただし、電子辞書・専門用語辞書は不可）

《注意事項》

1. 配布された全ての用紙の所定欄に受験番号を記入すること。
2. 解答は日本語を用い、答案用紙に横書きで記入すること。
3. 問1は必ず解答すること。問2は、（A）か（B）のいずれか1問を選択し、  
答案用紙の所定欄に選択した問題記号を必ず記入した上で、解答すること。
4. 答案用紙は問題ごとに1枚、計2枚。
5. 試験終了後、配布した問題用紙等は全て回収する。

問 1 以下の英文を読み、日本語に全訳しなさい。【50 点】

The starting point for any research project is to decide upon your initial research topic, and develop this topic into a focused research question. This is an important stage--a poorly thought out research question can lead to irretrievable difficulties in your research project later on. It can also be a difficult task, and one that can be extremely time consuming.

Before you start considering your research question, it is worth revisiting the concept of research. A feature of research is that it adds to knowledge. Often, however, students over-estimate the extent of originality required in a research project, and feel that they have to produce something completely new. In reality, this is unrealistic in almost all cases. Nearly all research builds upon work done by others, and uses existing knowledge. It is highly unlikely that you will come up with a completely original piece of research, and building upon the work of others through using existing knowledge provides the framework for a more realistic research proposal. Thus, you should not be concerned if your research topic does not seem as original as it could be. It should have some degree of originality, but often this can be achieved in a number of ways.

Ian Jones, Research Methods for Sports Studies: Third Edition, p. 45. Published by Routledge, 2014.  
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問 2 (A) 以下は、“Understanding Physical Activity and Exercise”という英文の一部を抜粋したものである。日本語でその内容を要約しなさい。【50 点】

Adults who engage in regular physical activity (PA) can enjoy many health benefits from being regularly physically active. Among adults, research has shown that increases in PA energy expenditure are associated with significant weight reduction. This has become especially pertinent, as approximately 68% of the US general population is either overweight or obese. However, regular PA carries health benefits regardless of any changes in body composition that occur as a result of increased PA energy expenditure. Additional health benefits of regular PA include, but are not limited to, reduced risks of Type 2 diabetes, hypertension, cardiovascular disease (CVD), colon cancer, and all-cause mortality.

Of particular interest regarding PA among adults is the role it can play in the prevention of future CVD. The economic cost associated with CVD has grown substantially in recent times, with current estimates of the direct and indirect costs associated with CVD and stroke in the United States exceeding \$500 billion in 2010. Current estimates among adults 20 to 59 years of age indicate that only 3.5% are meeting public health recommendations for PA. Substantially increasing the proportion of adults meeting current PA guidelines would undoubtedly have positive effects on CVD prevalence and its associated costs.

Recent evidence has shown that PA levels in America tend to decline as age increases and are lower among persons with chronic diseases. This age-related decline in PA may be partly attributable to limitations resulting from common chronic diseases. However, like younger adults and children, older individuals can also reap health benefits by being physically active. Interestingly, some research has demonstrated that leisure-time PA is a more important protective measure against heart disease in older adults (older than 65 yr) than in younger adults.

In comparison with younger individuals, older adults are more likely to have a chronic condition (e.g., CVD). However, PA still confers health benefits on those individuals suffering from one or more chronic diseases. As an example, PA after first nonfatal myocardial infarction (MI) has been shown to reduce the risk for a second MI. In addition, regular PA has also been shown to be an effective treatment for osteoarthritis among older adults.

Particularly important to older adults, a physically active lifestyle can help them maintain physical function during later years. Much of this benefit is due to greater levels of functional capacity that can be achieved through PA. These higher levels of functional capacity can allow older individuals to live independently and make it easier to carry out activities of daily living. In addition, PA during later adulthood is associated with decreased risks of falls and osteoporotic fractures.

問 2 (B) 以下は、“Eating, exercise, and ‘thrifty’ genotypes: connecting the dots toward an evolutionary understanding of modern chronic diseases” という英文の一部を抜粋したものである。日本語でその内容を要約しなさい。【50 点】

Reproduction, food, and physical activity are some of the basic necessities to ensure the survival of most animal species in the “wild”. However, recent cultural changes have engineered physical activity out of the daily lives of humans and domesticated animals. For example, many individuals no longer have to use manual labor to procure food or shelter. As a result of the introduction of habitual physical inactivity into the pattern of daily living, the risks of at least 35 chronic health conditions have increased. Therefore, prevention of these chronic health conditions requires an in-depth understanding of the cellular and molecular details of all genes requiring physical activity for physiological levels to be maintained. To achieve such knowledge, the subpopulation of genes that express pathologically during physical inactivity must be known before the biological basis of physical inactivity-mediated diseases can be elucidated at the molecular level and the most appropriate next clinical preventive and therapeutic steps can be taken.

First, it is important to discuss the known origins of how our present genome was selected, since it is precisely in the nature of this selection that likely determines the extent to which physical activity is required for physiological gene expression then and now. Others have contended that 95% of human biology, and presumably some of human behaviors, was naturally selected during the Late-Paleolithic era. During this era, humans existed as hunter-gatherers, using rudimentary chipped stone tools and thus said to have lived in the “old stone age”. Daily physical activity had to have been integral to our ancestors’ existence because it was only via physical activity that they could forage and hunt for food. Men were estimated to have hunted 1–4 nonconsecutive days per week, and women were estimated to have gathered food every 2–3 days; thus major adaptations related to food gathering for human survival were likely correlated with habitual physical activity, including endurance and peak effort alternating with rest. Lifestyle and feeding patterns were punctuated by cycles of feasts and famine. Hence, through nearly all of human evolution, physical exercise and food procurement were inextricably linked to the survival of our ancestors, suggesting the possibility of their linkage to a common selection of genes. And for these reasons, we will speculate that the feast-famine cycling and physical activity-rest cycling that were related to food procurement by hunter-gatherers selected genes for an oscillating enzymatic regulation of fuel storage and usage.