# Nutritional Knowledge and Beliefs between Fitness Room Users and Swimmers
# 健身室使用者及游泳人仕的營養知識及信念的研究

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## Abstract

The main purposes of the present study were to investigate the situation of nutritional knowledge and beliefs of 73 adults fitness room users (FRU) and 58 adult swimmers (SWR) and the ranged in age from 18 ~ 65 years. Subjects selected from 5 different health clubs and swimming pools. It included community, commercial or corporate center and located at Hong Kong Island or Kowloon. A total 131 of adults completed the questionnaires, which included (a) background information, (b) multiple choice nutrition knowledge questions and (c) true-or-false nutrition belief statements. 2 X 2 ANOVA and Pearson correlation were utilized to analyze the different in between the nutritional knowledge and beliefs in exercise groups and gender. Results show that the FRU and SWR scores of nutritional knowledge and beliefs were low and no significant differences were found between exercise groups and gender. Only significant difference in relationship in nutrition knowledge and belief on swimmer group was observed.

## 摘 要

此研究目的是探討成人健身室使用者(N=73)及游泳人仕(N=58)們對營養知識及飲食信念的情況。從五間不同的健體會所及游泳池中邀請受訪者完成一份問卷調查。受訪對象的年齡介乎 18 至 65 歲。此五間會所位於香港及九龍等地，會所形式包括：社區，私人及公司所屬之會所等。共131人完成此問卷調查，而問卷分為三部份；甲部：個人資料，乙部：營養知識及丙部：飲食信念。營養知識以多項選擇的提問方式，而飲食信念以是與否作判斷問題的真確性。用2x2 ANOVA及Pearson的相關系數分析兩運動組別及性別對營養知識及飲食信念之差別。結果指出健身室使用者及游泳人仕們對營養知識及飲食信念的分數也低。唯游泳人仕對營養知及飲食信念有相互關係。

## Introduction

Nutrition forms the foundation for physical performance; it provides the fuel for biologic work and the chemicals for extracting and using food potential energy (Kanarek, 1991). Lundell (1993) indicated that through increased scientific knowledge in this century regarding the role of food and diet in general health; public health professionals have developed concepts such as healthy eating and well-balanced diet. It is no doubt that a healthy nutritious diet can make people healthy, bright, sharp and energetic.

Major nutritional concerns are now associated with long-term health of all individuals. Bad dietary habits may lead to chronic diseases. These chronic diseases include hypertension, atherosclerosis, coronary artery

disease, diabetes, certain cancers, and obesity and they are often related to unhealthy life styles. Many of these chronic problems are linked to over consumption and poor selection of certain foods. Therefore, a balance diet is the one with adequate amount of nutrients selected from the four basic food groups, such as cereals and grains, vegetables and fruits, dairy products and meat and fish. All these foods help to prevent dietary deficiencies. A balance diet is essential for optimal health.

Nutrition is an essential element in improving general health and sport performance. There is quite a number of Hong Kong people participate regularly in weight training or swimming activities. This study might contribute to better understanding of the nutrition knowledge level, beliefs and dietary patterns between fitness room users and swimmers as well as the correlation between nutrition knowledge and beliefs among these people in Hong Kong. The result may serve as reference guidelines for personal trainers and swimming instructors.

In our daily life, an adequate and balanced diet is essential for optimal body functioning and performance. The foods we eat play a very important role in our body. Our diet influences our work, play, psychological status, and health. Steen and Butterfield (1997) indicated that " in industrialized societies, with the abundance of food available, nutrient deficiencies are rare if individuals select a well-balance diet. However, over consumption is linked to disease. The excessive consumption of calories and fat has been linked to cardiovascular disease, certain forms of cancer, obesity, hypertension and diabetes mellitus " (p.27). Therefore, we need to have a variety of food in our daily diet. There are many difference methods to cook food, which directly related with nutritious of food.

Nutrition is usually defined as the study of foods and nutrients essential to health and how the body uses these to help to progress and support growth, maintenance and reproduction of cells or the study of the relationship to the people and their food. Therefore, if we eat little nutrient food, the result is the insufficient amount of energy that in our bodies. Moreover, people with vigorous physical training program require more energy to consequent for the excess energy expenditure due to training than those with sedentary lifestyle. Steen and Butterfield (1997) indicated that " the exact amount will depend on the intensity of training, age, sex, body composition and present fitness level " (p.117). Berning et al. (1991) found that one of the many factors to ensure optimal athletic performance is nutrition. As a result, those with physical training need to consume additional calories than people with lower level of physical activities.

In recent years, we have used meal selection or food guides to help us with healthy eating. The food guides were first devised in the United States. It consisted of five food groups that are milk and meat, cereals, vegetables and fruits, fats and fat foods, sugars and sugary foods. The concepts of a food pyramid are to illustrate that there are various components making up a whole diet. The design is a titled plate incorporating five food groups in the proportions that are bread, rice, other cereals and pasta group in 6-11 of serving size of carbohydrate (39 % of total). Fruit and vegetables should consist of 5-9 serving size (33 % of total). Meat, fish and alternatives should be 2 –3 serving size (13 % of total) of protein. Milk and dairy foods should be 2-3 serving size (13% of total). Fatty and sugary foods are used sparingly which consist of energy fat and sugar (Barasi 1997; Williams 1995).

Most of the research on coaches and athletes showed that they have the concept of the basic food group. However, they also have own nutrition beliefs which using extra vitamins for gaining higher sport performance (Burke & Read, 1993, Massad et al., 1995, Sossin et al., 1997, Stombaugh & Wiita, 1996). A correct concept of nutritional knowledge and eating patterns should not be neglected. To avoid nutritional myths, misconceptions, and misinformation, athletes coaches, fitness instructors, and nutrition experts should help to established an appropriately nutrition concept to athletes and exercise participant who apply the theory into practice.

## METHOD

### Subjects

The subjects of this study were 131 adult (73 FRU, 40 males & 33 females and 58 SWR, 31 males & 27 females). Their age ranged from 18 - 65 years. FRU included five fitness centers, namely YMCA on Kwai Chung, Telford Club, Club Grand, Wayfoong Clubhouse and Kong Kai Clubhouse. The SWR included the YMCA on Kwai Chung and Yau Ma Tai, Telford Club, Club Grand and Kowloon Park public swimming pool.

## Instrumentation

The measuring instrument was a questionnaire which measured " the nutritional knowledge and beliefs on FRU and SWR " (see Appendix A). This questionnaire consisted of three parts. Part A consisted of personal information. Part B consisted of nutrition knowledge questions were adapted and modified from four nutrition knowledge inventories (HKDA, 1997, Lundell, 1993, Thomas et al.1990, Wilson, 1986). Part C consisted of nutrition belief statements, which were modified from three validated questionnaires (HKDA, 1997, Lundell, 1993, Thomas et al, 1990).

### Procedures

The investigation was conducted in Hong Kong in January 2000. Subjects were required to complete the questionnaire by their own knowledge and without asking anyone. All subjects were invited to participate in this study voluntarily. They took about 15 minutes to complete the questionnaire.

### Data Analysis

Data from the questionnaire were analyzed by utilizing the Statistic Package of Social Science for Window Version 9.0. Descriptive statistics and 2 x 2 ANOVA (groups and gender) were computed.

## Results

Subjects' information showed in Table 1 to 5 of FRU and SWR.

**Table 1. Means and SD of Subjects Information.**

| Variables | N | Males | | N | Females | |
|---|---|---|---|---|---|---|
| | 71 | M | SD | 60 | M | SD |
| Height | | 172.48cm | 6.85 | | 160.20cm | 5.61 |
| Weight | | 68.08kg | 10.58 | | 54.98kg | 8.51 |
| BMI | | 22.85 | 3.07 | | 21.44 | 3.12 |

**Table 2. Percentage of Age Range.**

| Variable | 18~25 Yr. | 26~30 Yr. | 31~40 Yr. | >40 Yr. |
|---|---|---|---|---|
| FRU | 34.2 | 21.9 | 38.4 | 5.5 |
| SWR | 32.8 | 19.0 | 20.7 | 27.6 |

**Table 3. Education Level.**

| Variable | Pri. | Secondary | Diploma | Degree | Postgraduate |
|---|---|---|---|---|---|
| FRU | 0 | 68.5 | 6.8 | 19.2 | 5.5 |
| SWR | 4 | 63.8 | 15.4 | 10.3 | 3.4 |

**Table 4. Exercise Times per Week.**

| Variable | @ day | 1~2 dy/wk. | 3~4 dy/wk. | not regular |
|---|---|---|---|---|
| FRU | 5.5 | 39.7 | 37.0 | 17.8 |
| SWR | 20.7 | 34.5 | 22.4 | 22.4 |

**Table 5. Feeling of Self Body Weight.**

| Variable | Yes | General | No |
|---|---|---|---|
| FRU | 9.6 | 53.4 | 37.0 |
| SWR | 25.9 | 32.8 | 41.4 |

The respondents about the sources of nutrition knowledge obtained in Figure 1.

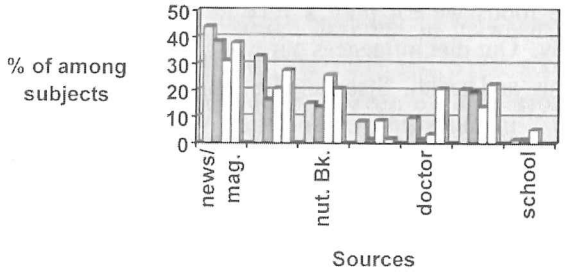


Figure 1. The percentage of sources of nutrition knowledge among subjects.

The higher score of nutritional knowledge was 21. The calculation of each correct answer statement in percentage was presented in Table 3. The mean knowledge score was 13.41 (SD =3.03) and presented in Figure 2.

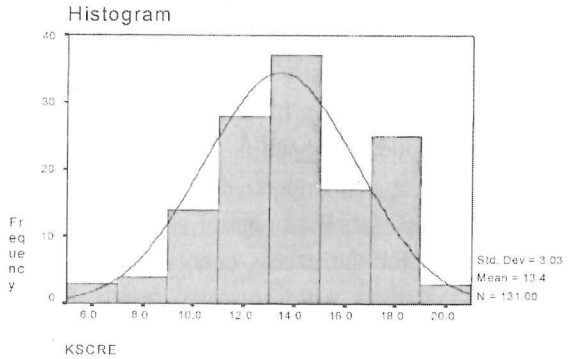


Figure 2. The curve of normal distribution on nutritional knowledge among subjects.

**Table 6. Percentage of Correct Responses of the Twenty-one Multiple Choice Nutritional Knowledge Statements of All Subjects (N= 131).**

| Items | Total | Fitness Room Users | | Swimmers | |
|---|---|---|---|---|---|
| | | Male | Female | Male | Female |
| Statement 1 | 28.8 | 39.7 | 34.5 | 39.7 | 71.0 |
| Statement 2 | 46.6 | 27.4 | 50.0 | 34.5 | 78.6 |
| Statement 3 | 49.3 | 35.6 | 46.6 | 43.1 | 87.0 |
| Statement 4 | 23.3 | 21.9 | 25.9 | 27.6 | 48.9 |
| Statement 5 | 19.2 | 17.8 | 17.2 | 19.0 | 36.6 |
| Statement 6 | 39.7 | 30.1 | 37.9 | 36.2 | 71.8 |
| Statement 7 | 30.1 | 30.1 | 29.3 | 27.6 | 58.8 |
| Statement 8 | 49.3 | 39.7 | 46.6 | 43.1 | 89.3 |
| Statement 9 | 19.2 | 12.3 | 12.1 | 5.2 | 25.2 |
| Statement 10 | 15.1 | 13.7 | 20.7 | 13.8 | 31.3 |
| Statement 11 | 37.0 | 31.5 | 25.9 | 41.4 | 67.9 |
| Statement 12 | 45.2 | 45.2 | 48.3 | 46.6 | 92.4 |
| Statement 13 | 26.0 | 13.7 | 13.8 | 17.2 | 35.9 |
| Statement 14 | 37.0 | 26.0 | 39.7 | 31.0 | 66.4 |
| Statement 15 | 46.6 | 38.4 | 43.1 | 39.7 | 84.0 |
| Statement 16 | 41.1 | 42.5 | 41.4 | 41.1 | 83.2 |
| Statement 17 | 23.3 | 23.3 | 27.6 | 25.9 | 49.6 |
| Statement 18 | 46.6 | 34.2 | 51.7 | 37.9 | 84.7 |
| Statement 19 | 31.5 | 26.0 | 19.0 | 24.1 | 51.1 |
| Statement 20 | 37.0 | 31.5 | 20.7 | 31.0 | 61.1 |
| Statement 21 | 35.6 | 26.0 | 36.2 | 19.0 | 58.8 |

Mean = 13.41

SD = 3.03

A 2 X 2 ANOVA was computed to determine the interaction effect in nutritional knowledge score between different groups (fitness room user/ swimmer) and gender (male/ female). The result was shown in Table 7. In this study, there was no significant interaction effect in nutrition knowledge between the exercise group and gender. There was also no significant main effect for either exercise groups or gender with respect to the mean nutrition knowledge scores.

**Table 7. 2 X 2 ANOVA of Nutrition Knowledge among Groups of Status and Groups of Gender (N = 131).**

| Source | SS | df | MS | F | p |
|---|---|---|---|---|---|
| Main Effects | 6.215 | 2 | 3.107 | 0.332 | 0.718 |
| Group | 0.962 | 1 | 0.962 | 0.103 | 0.749 |
| Gender | 5.234 | 1 | 5.234 | 0.559 | 0.456 |
| 2-Way Interaction | | | | | |
| Group Gender | 2.080 | 1 | 2.080 | 0.222 | 0.638 |
| Explained | 7.459 | 3 | 2.486 | 0.266 | 0.850 |
| Residual | 1188.282 | 127 | 9.357 | | |
| Total | 1195.740 | 130 | 9.198 | | |

The correlation coefficient between nutrition knowledge and nutrition beliefs was conducted and the result was $r = 0.26$ ($p < 0.05$). In this study, there was a significant positive but weak correlation between nutrition knowledge and nutrition belief for all the subjects $p = 0.003$ ($r = 0.26$). To determine whether the correlation coefficient effect on between fitness room users' group or swimmers' group, case analyzed separation and the results shown as below.

The correlation coefficient between nutrition knowledge and nutrition beliefs for fitness room users' group was conducted and there was no significant correlation coefficient between nutrition knowledge and nutrition belief for fitness room users the subjects $r = 0.18$ ($p = 0.127$).

The correlation coefficient between nutrition knowledge and nutrition beliefs for swimmers' group was conducted and there was significant correlation coefficient between nutrition knowledge and nutrition belief for swimmers the subjects $r = 0.005$ ($p = 0.363$).

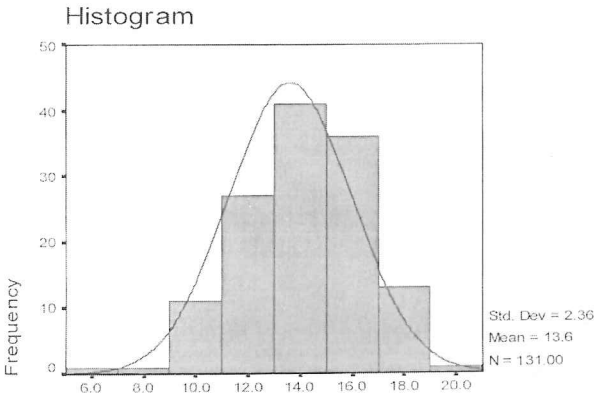


Figure 3. The Curve of Normal Distribution of Nutrition Beliefs Score Among Subjects.

The highest score of 19 could be obtained in nutrition belief questions. The calculation of each correct answer statement in percentage was presented in Table 8. The mean beliefs score was 13.62 (SD =2.36) as shown in figure 3.

**Table 8. Percentage of Corrective Responses of the Twenty True False Nutrition Belief Statements among Subjects (N= 131).**

| Statements | % Correct of Different Groups (N=131) | | | | Total % Correct |
|---|---|---|---|---|---|
| | Fitness Room Users | | Swimmers | | |
| | Male | Female | Male | Female | |
| Statement 1 | 32.9 | 21.9 | 27.6 | 17.2 | 44.8 |
| Statement 2 | 37.0 | 37.0 | 44.8 | 39.7 | 84.5 |
| Statement 3 | 42.5 | 38.4 | 43.1 | 39.7 | 82.8 |
| Statement 4 | 41.1 | 32.9 | 44.8 | 36.2 | 81.0 |
| Statement 5 | 11.0 | 6.8 | 10.3 | 5.2 | 15.5 |
| Statement 6 | 53.4 | 43.8 | 51.7 | 44.8 | 96.6 |
| Statement 7 | 37.0 | 27.4 | 25.9 | 27.6 | 53.4 |
| Statement 8 | 21.9 | 17.8 | 32.8 | 25.9 | 58.6 |
| Statement 9 | 53.4 | 45.2 | 50.0 | 44.8 | 94.8 |
| Statement 10 | 37.0 | 21.9 | 29.3 | 27.6 | 56.9 |
| Statement 11 | 34.2 | 34.2 | 31.0 | 31.0 | 62.1 |
| Statement 12 | 52.1 | 43.8 | 46.6 | 43.1 | 89.7 |
| Statement 13 | 39.7 | 30.1 | 36.2 | 32.8 | 69.0 |
| Statement 14 | 47.9 | 43.8 | 53.4 | 39.7 | 93.1 |
| Statement 15 | 39.7 | 39.7 | 39.7 | 39.7 | 79.3 |
| Statement 16 | 53.4 | 38.4 | 46.6 | 39.7 | 86.2 |
| Statement 17 | 50.7 | 35.6 | 48.3 | 39.3 | 87.9 |
| Statement 18 | 26.0 | 19.2 | 25.9 | 15.5 | 41.1 |
| Statement 19 | 17.8 | 21.9 | 13.8 | 17.2 | 31.0 |
| Statement 20 | 20.5 | 21.9 | 17.2 | 24.1 | 41.4 |

Mean = 13.62
SD = 2.36

### Difference in Nutrition Beliefs Score Between Exercise Groups and Gender

A 2 X 2 ANOVA was computed to determine the interaction effect in nutrition beliefs score between different group (fitness room user/ swimmer) and gender (male/ female). The result was shown in Table 9. In this study, there was no significant interaction effect in nutrition beliefs between the exercise group and gender. There was also no significant main effect for either exercise groups or gender with respect to the mean nutrition knowledge scores.

**Table 9. 2 X 2 ANOVA of Nutrition Beliefs among Groups of Statusand Groups of Gender (N = 131).**

| Source | SS | df | MS | F | p |
|---|---|---|---|---|---|
| Main Effects | 1.726 | 2 | 0.863 | 0.152 | 0.860 |
| Group | 1.452 | 1 | 1.452 | 0.255 | 0.614 |
| Gender | 0.279 | 1 | 0.279 | 0.490 | 0.825 |
| 2-Way Interaction | | | | | |
| Group Gender | 3.664 | 1 | 3.664 | 0.001 | 0.980 |
| Explained | 1.736 | 3 | 0.579 | 0.102 | 0.959 |
| Residual | 723.180 | 127 | 5.694 | | |
| Total | 724.916 | 130 | 5.576 | | |

## Discussions

In nutrition knowledge quiz, the most frequent score fell in the range of 13/21 to 15/21 and the mean score was 13.41 (SD=3.03) indicating that most of the respondents did not have adequate nutrition knowledge. There was no interaction between nutrition knowledge on male and female on fitness room users and swimmers.

The most frequent source of nutrition knowledge they cited was from newspaper or magazine. Moreover, the nutrition knowledge cited provided by television or radio came as the second most sources. Therefore, the nutrition information released from the media becomes a very important factor determining what kinds of knowledge people obtain. In order to increase the sale of health food products, companies often publicize their products through advertising on newspapers, magazines or television. The lure of selling a product seems to have spawned a new wave of false or misleading claims supported by nothing more than its promoters' wishful thinking or faulty extrapolations from legitimate research (Sukala, 1998). However, consumer may not have enough basic nutrition knowledge to distinguish true or false from all information. Thus, some people may have many misconceptions about the nutrition knowledge and beliefs. These misconceptions may harmful lead to practice.

The percentage of correct nutrition knowledge scores varied from 25.2% to 92.4%. According to the data in statement 10, about 69% of the subjects did not know the exact daily intake of calcium. The result might indicate that people might not care about having enough calcium per day. Williams (1997) suggested that an adult should have intake of 800mg daily, or the amount of 3 to 4 cups of milk per day. Lewis and Modlesky (1998) indicated that calcium and Vitamin D significantly influence bone mineral and fracture risk. Calcium or vitamin D supplement (1000 mg) slows bone loss and reduces fracture rates in late postmenopausal women.

In the two statements asked correctly in 36% and 50 % of vitamin and health among food. The result indicated that subjects did have some common nutrition knowledge. However, in statement 9, a similar question on exercise diet about 75% of subjects responded incorrectly. Therefore, even though the subjects engage regular exercise, they did not have sufficient sport nutrition knowledge.

About 69% and 60% of the subjects believed that consuming more protein can lead to muscle development and protein is the most important nutritious food. It is a very serious misconception about protein. Williams (1997) indicated that recommended dietary allowance for protein is 0.8 g/kg/body wt. which roughly equates to 58~ 63g. and 46 ~50g. per day for male and female, which cost 2 to 3 servings of total daily intake. This result showed that subjects might over-estimate the intake on total quantity of protein.

84.5% of the subjects believed that consuming coffee could cause heart disease. HKDA (1997) stated that there was no evident for direct link between consuming coffee and heart disease. However, the sentence might not be clear that tended to lead the subjects in negative respond.

45% of the subjects believed that coconut and avocado contain high cholesterol. HKDA (1997) stated that fruit did not contain cholesterol. Coconut and avocado are both fruit but they contain a lot of fat. People cannot clearly distinguish the difference of fat and cholesterol that exist in food.

There would be no significant difference in nutrition knowledge between males and females between fitness room user group and swimmer group. It could be summarized that the characteristics of the samples were similar while the difference is the choice of type in exercise engagement. Although they are adult with different age distribution, education level, the feeling of their own body weight was very similar. Since the subjects came from recreational center or swimming pool setting, their main purpose for sport is more recreation in nature. Therefore, the subjects' nutrition knowledge and beliefs were not directly influenced by coaches. As newspaper and television program provided a lot of nutrition knowledge to people, it was not surprising that media was the main information source of nutrition knowledge for them. Correct nutrition knowledge information should be disseminated to the public. The mean score in this questionnaire quiz was not high, that means all public media should enhance more nutrition information and improve the presentation method. Moreover, a lot of females are working girls and they have the same chance for obtaining nutritional information as males.

## Conclusions

In the present study, male and female fitness room users and swimmers have a lot of nutrition misconceptions regardless of their age, education level. The results reflect that the public did not posses adequate and correct nutrition knowledge and beliefs.

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## Appendix A.

# 營養知識，飲食信念及飲食模式問卷調查

此問卷調查的目的是研究經常使用健身室及游水的成年人對營養知識的了解，飲食方面觀念及個人飲食模式的情況。本問卷一切資料絕對保密，只作統計用途。

填寫指示：請圈出合適答案。

**甲部：個人資料**

1. 性別： 男 / 女

2. 高度：【 】里米/ 或
   【 】呎【 】吋

3. 體重：【 】千克/ 或
   【 】磅

4. 年齡
   a. 18 ~25
   b. 26 ~30
   c. 31 ~ 40
   d. 41 以上

5. 教育程度：
   a. 中學
   b. 文憑
   c. 大學學士
   d. 大學碩士
   f. 小學
   e. 其他：_____

6. 你每星期做多少次運動？
   a. 每天也做運動
   b. 每星期一至二次
   c. 每星期三至四次
   d. 沒有一定

7. 你是否滿意自己體重？
   是/ 一般/ 否

**乙部：營養知識**

我的營養知識多從下列那些途徑獲得（可選多項）：
   a. 報章/ 雜誌
   b. 電台/ 電視
   c. 營養知識書籍
   d. 學術期刊
   e. 醫生
   f. 家人/ 朋友
   h. 其他：

1. 下列那一項薯仔的烹調方法較低卡路里？
   a. 焙薯
   c. 炸薯
   b. 薯片
   d. 薯仔沙律

2. 那一項不能夠提供身体的能量？
   a. 蛋白質
   b. 碳水化合物
   c. 維他命
   d. 脂肪

3. 那一項食物含大量維他命 A？
   a. 蘋果
   b. 雞胸肉
   c. 粟米
   d. 紅蘿蔔

4. 那一類食物提供最佳的維他命 B？
   a. 肉類
   b. 蔬菜
   c. 生果
   d. 麵包和穀物類

5. 棕櫚油，椰油和牛油含有大量那一類脂肪？
   a. 飽和脂肪
   b. 多重不飽和脂肪
   c. 單不飽和脂肪
   d. 膽固醇

6. 下列那一項食物不含鈣質？
   a. 豆腐
   b. 木瓜
   c. 脱脂
   d. 沙甸魚連骨

7. 成年人能藉著晒太陽可得到那一種維他命？
   a. 維他命B
   b. 維他命D
   c. 維他命C
   d. 維他命K

8. 下列那一食物組合可提供較多的食物纖維？
   a. 什菜沙律
   b. 油占多士
   c. 肉丸麵
   d. 吞拿魚三文治

9. 若要減去一磅身體脂肪，需要消耗多少卡路里？
   a. 1500卡路里
   b. 2000卡路里
   c. 2500卡路里
   d. 3500卡路里

10. 成年人每天需要補充多少鈣質才達到骨骼健康的標準？
    a. 600毫克
    b. 800毫克
    c. 1000毫克
    d. 1200毫克

11. 下列那些食物含大量維他命E？
    a. 果仁
    b. 雞胸肉
    c. 薯仔
    d. 西生菜

12. 一般情況，每人一天需要喝水及飲料的份量是？
    a. 一天6杯
    b. 一天8杯
    c. 一天9杯
    d. 一天11杯

13. 下列那一組維他命是屬於脂溶性？
    a. A, B, C & D
    b. A, B, E & K
    c. B, C, D & E
    d. A, D, E & K

14. 根據健康飲食金字塔原則，每日食物比例中，佔進食份量最多是那一項？
    a. 蔬菜類：青瓜，西芹，菜心等
    b. 肉，魚及蛋類
    c. 五穀類：粉，麵，飯等
    d. 水果：橙，蘋果，香蕉等

15. 常進食鹽醃製食物，會導致身体出現那些病症？
    a. 高血壓
    b. 胃痛
    c. 糖尿病
    d. 衰老

16. 下列那些食物不含鐵質？
    a. 菠菜
    b. 牛肉
    c. 豬肝
    d. 雞蛋黃

17. 多吃水果有預防患上下列那些病症機會？
    a. 頭痛
    b. 骨質疏鬆
    c. 癌症
    d. 貧血

18. 下列那些食物含豐富碳水化合物？
    a. 牛奶，芝士& 乳酪
    b. 豬肉，牛肉& 魚
    c. 麵包，飯& 薯仔
    d. 椰菜，西蘭花& 西芹

19. 下列那些維他命對身體有抗氧化（Antioxidants）作用？
    a. D, E & K
    b. B, C & K
    c. 胡蘿蔔素，C & E
    d. 胡蘿蔔素，B & E

20. 下列那些食油用作烹調食物較為健康？
    a. 花生油
    b. 粟米油
    c. 椰子油
    d. 橄欖油

21. 參與耐力訓練的運動員應多補充下列那類食物以增加能量的貯存？
    a. 蛋白質
    b. 碳水化合物
    c. 維他命
    d. 脂肪

## 丙部：飲食信念

1. 牛油果及椰子含高膽固醇的食物。 是/ 否
2. 常吃通菜會容易出現肌肉抽筋的現象。 是/ 否
3. 紅肉及白肉當中，只有紅肉才含膽固醇。 是/ 否
4. 懷孕期間，母親需要進食較懷孕前兩倍以上的食物份量，以確保嬰兒有足夠的營養。 是/ 否
5. 多喝咖啡不會引致心臟病。 是/ 否
6. 有效的減肥方法是多做運動及控制食量。 是/ 否
7. 脱脂奶所含的維他命，礦物質及蛋白質較全脂奶為低。 是/ 否
8. 多喝檸檬汁或西柚汁對減肥沒有幫助。 是/ 否
9. 少量的脂肪對人體內的功能運作是必需的。 是/ 否
10. 為免傷口發炎，病人於手術後，應避免進食雞蛋和牛肉。 是/ 否
11. 懷孕期間，孕婦沒有需要避免吃香蕉，西瓜等水果。 是/ 否
12. 發育時期的青少年，熱量需求相對成年人消耗量的需求為高。 是/ 否
13. 患上傷風感冒，不應吃雞及飲用雞湯。 是/ 否
14. 營養補充劑不能完全代替日常飲食中的營養成份。 是/ 否
15. 維他命E可延緩衰老。 是/ 否
16. 運動後飲用大量白開水較容易增肥。 是/ 否
17. 確保有效地減肥，我應大量進食纖維素及纖維丸。 是/ 否
18. 蛋白質是食物中最重要的營養。 是/ 否
19. 進食大量蛋白質可促進身體肌肉的生長。 是/ 否
20. 多吃飯類會容易增加體重。 是/ 否

**Model Answer:**

Answer of Nutrition Knowledge:

| | | | | |
|---|---|---|---|---|
| 1. A | 2. C | 3. D | 4. D | 5. A |
| 6. B | 7. B | 8. A | 9. D | 10. B |
| 11. A | 12. B | 13. D | 14. C | 15. A |
| 16. D | 17. C | 18. C | 19. C | 20. D |
| 21. B | | | | |

Answer of Nutrition Beliefs:

| | | | | |
|---|---|---|---|---|
| 1. F | 2. F | 3. F | 4. F | 5. T |
| 6. T | 7. F | 8. T | 9. T | 10. F |
| 11. T | 12. T | 13. F | 14. T | 15. T |
| 16. F | 17. F | 18. F | 19. F | 20. F |