



Exercise physiology (PT212)

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Instructions:-

- 1- Each group of students should not exceed 5**
- 2- Formatting: Times New Roman , size 14, titles size 16 , line spacing 2**
- 3- research pages should not exceed 5- 10 pages**
- 4- Summary and highlights should be included at the end of research**
- 5- Illustrative diagrams should be included**
- 6- recent updated references should be included (5-10)**
- 7- You should write in your own words after you read literature concerning your research topic**
- 8- In case of great similarities between represented researches , these researches will be rejected**
- 9- For each research topic , all subheading should be covered. You can also discuss subheading that is not mentioned**
- 10- At the end of your research , add a suggestion for future research related to your topic.**

Research topics

1- Exercise training and susceptibility to COVID-19 pandemic

- A- Definition of COVID19**
- B- Organization of immune system**
- C- Response of immune system to exercise**
- D- Adaptations of immune system to exercise**

2- Impact of different exercise training on cognitive performance in elderly

- A- Main definitions for different types of exercise training , cognition, elderly**

B- Correlation between physical exercise and cognition. Consider at what age , the correlation is most strong

C-Potential mechanisms by which exercise training could improve cognition

D- How cognition could be measured by physical examination or tools

3- Muscle mechanics and physiology behind exercise

A- Mechanism behind muscle damage from eccentric exercise and how adaptations could be gained by exercise

B- Mechanism of muscle hypertrophy induced by resisted exercise training

C- Prescription of exercise training variables for induction of muscle hypertrophy

4- Recovery after exercise ; How to help fast post exercise recovery

A- Causes of excess post exercise oxygen consumption (EPOC)

B-Nutritional interventions as a post exercise strategy

C- Different physical therapy interventions as a post exercise strategy

5- Exercise- induced hyperthermia (heat stress)

A- Normal thermal balance inside the body and physiological thermoregulation

B- Heat exchange during exercise

C- Cardiovascular demand of exercise in heat

D- Effect of aging and chronic cardiovascular diseases on exercise-hyperthermia

6- Do differing exercise order cause differences in neuromuscular performance and cardiorespiratory response

A- Neuromuscular response and adaptations to resisted exercise training

B- - Neuromuscular response and adaptations to aerobic exercise training

C- Neuromuscular response and adaptations to concurrent or combined training, starting with aerobic then proceed with strength at the same training session

D- Neuromuscular response and adaptations to concurrent or combined training, starting with strength then proceed with aerobic at the same training session

E- Cardiorespiratory adaptations (VO₂max , anaerobic threshold) to combined training

7- Role of nutrition in enhancing exercise performance

A- Metabolic adaptations induced by exercise training

B – Diet strategies employed by athletes to maximize glycogen stores

C- – Diet strategies employed by athletes concerning carbohydrates intake during exercise

D- Fat or protein as a fuel during endurance exercise

E- Impact of hydration and dietary supplementation on exercise performance

8- Hormonal adaptations to exercise training, glucocorticoids are not " bad guys"

A- Definition of glucocorticoids and their physiological functions

B-Regulation of cortisol levels in the blood

C- Cortisol response to exercise

D- Pathological excessive cortisol response as a result of exercise or pathological diseases

GOOD LUCK