

# Exercise Science Review #3 2016 (refer to my website)

## PPT 10 #1-25

1. Be able define what macronutrients and macronutrients and know examples for each
2. Know the function of proteins, an example and the number of calories they provide for each gram of protein
3. Know the function of carbohydrates, an example and the number of calories they provide for each gram of carbohydrates
4. What is the difference between simple and complex carbohydrates as far as examples and time in which sugar is released to the cells
5. Know the function of fats, an example and the number of calories they provide for each gram of fats
6. Know the difference between HDL's (polyunsaturated) and LDL's (saturated) and another name for each and why they are good or bad for you.
7. Know examples for HDL's and LDL's
8. Know three functions of vitamins
9. Know 4 functions of minerals
10. What is the significance of water and fat soluble vitamins
11. Know the 4 categories of the Canada Food Guide
12. Know what the energy equation is and what does the energy storage equals
13. Define the Metabolic Rate and the Basal Metabolic rate
14. What are the 5 factors that affect your Metabolic Rate
15. Be able to calculate your RMR using the Harris-Benedict equation
16. Be able to read a food label
17. What kind of tool is the BMI
18. What does BMI estimate
19. If your BMI is high what 6 diseases are you risking?
20. Know the BMI categories and what factors can cause the BMI to overestimate fat and underestimate fat
21. What are 2 factors that effect your BMI and how they can effect it by under estimating and over estimating your body fat
22. Be able to use the BMI table
23. What 5 factors lead to obesity?
24. What are 2 functions of fluid replacement and why is it important
25. What is the best fluid to replace and when should fluid placement occur?

## PPT 11 #26-29

26. List 5 reasons why are Ergogenic aids used by athletes
27. What are 3 types of Ergogenic aids
28. Define the following nutritional aids, the reason athletes take it and 2 negative side effects for each: Vitamins and minerals, Protein and amino acid supplements, Carnitine, Creatine, Caffeine
29. Define the following Pharmacological aids, the reason athletes take them and 2 negative side effects of each, they include: Pain-masking drugs, Anabolic steroids, Erythropoietin

## PPT 12 #30-31

30. Define the term ergonomics and the goal of ergonomics ?
31. What are 3 ways technology is used for equipment revolution and computer technology that enhance athletics?

## **PPT 13 #32-41**

32. Be able to list and define all the components of the F.I.T.T. Principle
33. Frequency of training depends on what three factors
34. Know how to calculate your Max heart rate and also training rate, for example 60%
35. What are the main 2 types of exercise
36. What are the intensities, rest periods, volume of training and three things that determine the training prescription for anaerobic alactic and aerobic training
37. Define the overload principle and what 4 aspects of training can it be implemented in
38. What must specificity training reflect?
39. What 2 things does the principle of reversibility lead to ?
40. What 4 things can lead to detraining
41. List 6 training methods

## **PPT 14 #42-45**

42. What are the 3 stages of personal fitness training ?
43. What are the 4 aspects of fitness that we evaluate in a fitness program – give techniques for each
44. What is the difference between health related fitness and performance related fitness
45. What are the 4 components of a general program design and what each component should include?

## **PPT 15 #46-60**

46. How does Newton's first law explain Equilibrium?
47. How does Newton's Third Law explain conservation of energy?
48. What are Newton's three Laws of motion and be able to explain each?
49. Define Linear and rotational motion and how each are generated.
50. Name the three types of levers.
51. Be able to draw each type of lever locating and showing the direction of force, fulcrum and load and indicate which lever is referred to as the teeter-totter, the wheelbarrow and the shovel.
52. Be able to give a real body example of each lever indicating what the fulcrum is, and what muscle is generating the force.
53. Be able to list and define the 7 principles of biomechanics
54. What are the 4 broad categories that the NCCP list that covers the 7 biomechanical Principles
55. Know the biomechanics principle and math formula for explanation for vertical jump
56. Be able to find CofM for high jumper or diver
57. be able to understand spin rate for diver or figure skater
58. be able to understand what bat you should use to hit baseball
59. If angular momentum holds true using the formula  $L = m \cdot v \cdot r$  why and how can we affect a diver spinning or figure skater spinning, diver and tight rope walker
60. What are three areas in sport and fitness that biomechanical principles are applied

## **PPT 20 #61-64**

61. Define the following terms : sport psychology, ideal performance state, arousal, anxiety, the zone
62. Be able to apply the inverted "U" hypothesis for a complex task and simple task and how you would manipulate athlete to achieve optimal arousal
63. list 5 ways tools used to regulate relaxation and arousal
64. list 3 tools used to develop concentration