Assignment06b

1. Proteins help your body grow and repair. They are in every cell of your body except bile and urine. A constant protein supply is needed to make and repair body cells. They are in a constant state of turnover – being made and broken down and made again.

   Proteins regulate body functions by speeding up chemical reactions in the body like enzymes, regulating fluid balance in and out of body cells, helping your body move by contracting the muscles, working as transport carriers in membranes and also being part of your body's defence mechanism. Skin, for example, is made of protein and is the first line of defence against bacteria and injury.

   Lastly, protein supplies energy: 4 calories per gram of protein. When calorie intake from carbohydrates and fat is short, protein can be used as an energy source as a last resort. Protein can also be converted to glucose – a fuel for the brain's function.

2. Protein sparing effect is when the body uses energy from sources other than protein. The body tries and uses calories and fats first because if proteins are used for energy, they can't do what they're meant to do – build and repair body cells and do specialised tasks.

3. Nutrient distribution for protein varies between ages:
   For ages 1 – 3, it is 5% - 20% of total calories.
   For ages 4 – 18, it is 10% - 30% of total calories.
   For ages > 19, it is 10% - 35% of total calories.
   Most adults in the United States average about 15% of their calories from protein.

4. For an adult > 19 years, the minimal needs of protein for females is 46 grams per day, while for males it is 56 grams.
   I am 52kg, so my protein needs, based on grams per kg:
   0.8 x 52 = 41.6grams of protein per day.

5. A) Essential AA is essential amino acids that cannot be made in the body so they must come from food.

   B) Non-essential AA can be made in the body so it is not essential in the diet.

   C) A complete protein is a source of protein that contains enough essential amino acids necessary for the diet.

   D) Complementary proteins are two or more incomplete protein sources that together provide enough of all the essential amino acids.

6. A high-protein diet does not help you in anyway, in fact excessive protein can be bad as discussed in Assignment 6A, part 2, question 3 and 4:

"Extra protein does not build more muscle. Once your body receives enough protein, any excess is used as energy or stored as body fat. Excessive protein can cause metabolic imbalance, toxicity, nervous system disorders, perhaps kidney problems and can increase the chances of dehydration because when protein is broken down, urea is formed and thus more water is needed to excrete the urea."