**Nutrition Lab**

**Question: What types of foods are the best sources for Carbohydrates, Proteins, and Fats?**

**Basic information**

Carbohydrates , proteins and fats are the three main nutrients our bodies use and are in the foods we eat, whether they are processed foods or not. Until 1990 the amounts of these nutrients and the ingredients that were in our foods did not have to be on the packaging or disclosed to the consumer. In 1990 the **Nutrition Labeling and Education Act (NLEA)** passes. It requires all packaged foods to bear nutrition labeling and all health claims for foods to be consistent with terms defined by the Secretary of HHS. As a concession to food manufacturers, the FDA authorizes some health claims for foods. The food ingredient panel, serving sizes and terms such as "low fat" and "light" are standardized. This is pretty much the nutrition label as we know it today. The information is supposed to be in a standard format, easy to understand, and on anything considered human consumable. Check out a bag of dog food sometime.

**Some science: Monomers and polymers**

A polymer is a complex molecule made of simple parts called monomers. The **monomers** hook together somewhat like dry erase markers, or links of a chain, to form the larger polymer, or complex molecule. Carbohydrates are made of simple sugars, or saccharides. Proteins are made of amino acids. Fats (Lipids) are made from fatty acids.

The body uses these three main nutrients to function. Carbohydrates are used for energy (glucose). Fats are used for energy after they are broken into fatty acids. Protein can also be used for energy, but the first job is to help with making hormones, muscle, and other proteins.

**The lab activity procedure**

In this activity, the class will look up images of nutrition labels for different food types; cereals, meat products (tuna, sausage types, spam, etc.), vegetables, dairy products, varieties of chips and popcorn, soft drinks, ice creams, cookies, pastries, pastas, sauces like spaghetti sauce, baby foods, or maybe dog foods, etc. Each student will do five different foods.

**Recording the data**

As you find the nutrition labels for the category, record the information on serving size (in grams), fats (in grams), carbohydrates in grams, and proteins (in grams) in the data table found below.

**This sheet will contain a column** for the name of the product, serving size in grams, total fat amount and the amount as a percentage of the serving size, total carbohydrate amount and the amount as a percent of the serving size, and total protein amount and the amount as a percent of the serving size. .

**Conclusion**

**Compare the five foods that you analyzed. Include a discussion on the levels of protein, carbohydrates and fat your five foods have available in a serving, and why you think they are at the level you found. It might be helpful to know that the nutrition label contains the ingredients in the order of the amount in the product from the most to the least.**

**Data Table**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Food  | Serving size (gms) | 1st two ingredients | Gms of fat | % of fat | Gms of carbohydrates | % of carbohydrates | Gms of protein | % of protein |
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