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Short Communication

De Mystifying the Nutrition Information in Packaged Products

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Nutrition Information of any processed food products has now come to the main stream as an increasingly large no. of consumers has started paying attention to it. This eager need to read the nutrition information does lead to a make or break situation in a consumers mind as this information does tend to get the consumer purchase the product.

From a science perspective, Nutrition information in any nutrition panel can be broken down to 2 major categories:

- **Macro Nutrients:** The set of nutrients required in larger qty. by the human body. This group includes the Fat, Proteins and Carbohydrates
- **Micro Nutrients:** The set of nutrients required in much smaller qty. by the human body. This group includes the Vitamins and Minerals.

In order to understand the different nutrients, a consumer should be aware of the workings and needs of these individual nutrients and thus make a holistic approach towards understanding the nutrition profile of the product.

Proteins

Measured in g/100g of the product, these are macro molecules which harbour the Amino Acids. These amino acids are the building blocks of the body. They are slow digesting in nature and thus take time in getting absorbed by the body. For a healthy development of the body, 20 essential amino acids are required. Proteins are made up of a combination of a part of these 20 amino acids. In other words, Proteins vary in combination of these amino acids and hence high protein content is considered to be of good nutrition when different sources of protein are used in the same product.

Carbohydrates

Measured in g/100g of the product, they have been noted as the body's main source of energy by the American Dietary Association [1]. Sources of carbohydrates in Processed Foods can be largely categorized into Starch, Fibre, and Sugar [2]. However, on the food label, it is only the dietary fibre and sugar that are mentioned. The reason for starches not being mentioned is solely the role they play in the processing of the food, i.e. they help in improving the overall texture of the food while also increasing the total soluble solid count of the product.

Sugars are often described onto labels as "Of which Added Sugar (g)" i.e. the sugar which is added externally as part of the formulation. This sugar can individually or in combination be refined sugar, Jaggery, beet sugar etc. The other way by which sugars are described on labels are "of which Total Sugar (g)". These sugars are quantification of sugar compounds from added sugar and the other components of the product. Hence, reading which sugar has been mentioned on the nutrition information helps understanding how much of sugar will enter the body.

Dietary Fibres are the roughage materials which are sourced from the plant components of the product. They help the human body in removing excess moisture and help in regular bowel movements [3]. They are measured in g/100g of the product.

Fat

Often the most searched component of the processed food in the NI table, this also makes the consumer take or leave the product. Chemically, fats are glyceride molecules of fatty acids and glycerol. It's this composition that defines the fat. Fats are present in the product as

- **Saturated Fats:** Triglyceride molecules having fatty acids without any double or triple hydrogen bond.
- **Un Saturated Fats:** These are Mono-, Di-, Tri-glyceride molecules which have fatty acids with double and triple hydrogen bonds. These are often found in the cis configuration of fatty acid. A cis configuration is one in which the hydrogen atom on either side of the C-C double bonds are on the same side [4]. The unsaturated fatty acids may have a single unsaturation (Mono) or multiple unsaturations (Poly).
- **Trans Fats:** These are unsaturated fats in which the hydrogen atom on either side of the C-C double bonds are on the opposite sides of the molecule [4]. While being more stable than other unsaturated fats [4], these have been linked with coronary heart disease, breast cancer, diabetes [5].

Vitamins and minerals

These are the micronutrients which the body requires in micrograms and milligram quantities as excess of these could lead to possible risks of adverse effects [6].

Calories

This is the primary factor with which consumers take or leave a product. Generally, calories are calculated as "4.2X(Total Quantity of Carbohydrate +Total Quantity of Protien) + 9X(Total Quantity of Fat)". Since calorie count is a combination of the macro nutrients, it is best to look at the calories from a whole picture perspective.

Thus a product may have high calories due to a high fat content or a high carbohydrate content.

A product's fat content might be high, but can still be chosen for consumption if it has a high quantity of Mono Unsaturated Fatty Acids and Poly Unsaturated Fatty Acids.

To conclude, a product's Nutrition Information is an indication of the products healthiness only if its individual components are studied in total and not in a secluded manner, a mistake which is often made by consumers.

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