

# Can Biscuits act as meal replacements?



# Are biscuits really healthy snacks?

## Can Biscuits act as meal replacements?

TV commercials talk about high fiber, diabetic friendly multigrain biscuits and some biscuits claim to be providing the much needed nutrition at work. All these claims make you believe that biscuits are healthy foods. Are they really healthy and can they replace your meals?

Haven't you heard some frequent travellers say " I can manage a few days of my travel with biscuits and fruits" finding an easy solution for their food requirements in the absence of hygienic food?

Biscuits have today become part of our lives more out of habit and because of the sentiments attached to certain meals like tea time etc. You should really look at biscuits as they are- that is high in calories and with little nutrition, and look beyond the advertisements as being better options for snacks.

This study helped us understand all about biscuits! And the truth behind the claims made by the manufacturers

- The word biscuit comes from the Latin word, "bis coctus," which means twice baked. Biscuits have been baked for over thousands of years.

- Biscuit is a hygienically packaged snack food available at very competitive prices and in different tastes.
- According to a National Council of Applied Economic Research (NCAER) Study, biscuit is predominantly consumed by people from the lower strata of society, particularly children in both rural and urban areas.

The different varieties of biscuits can be broadly classified **as per the BIS (Bureau of Indian Standards)**, on the basis of sensory attributes

Type I	Sweet
Type II	Semi-Sweet
Type III	Crackers
Type IV	Cookies
Type V	Speciality Biscuits

Biscuit industry in India in the organized sector produces around 65% of the total production, the balance 35% being contributed by the unorganized bakeries.

- Though India is considered as the third producer of Biscuits after USA and China, the per capita consumption of biscuits in our country is only 1.8 kgs, compared to over 7.5kgs in the USA, UK and Japan.

- In west European countries and South East Asian countries, the average consumption is between 2.5 to 5.5 kgs
- China has a per capita consumption of 1.9kgs.

### ARE BISCUITS HEALTHY SNACKS?

Some of the foods consumed as snacks are fruit, salad, sundal, roasted nuts, sandwiches, biscuits, murukku, bajji, samosa, vadai etc.

If fruit, salad, sundal or vegetable sandwiches are going to be replaced with biscuits then it is not a healthy option.

However if biscuits are going to replace murukku, bajji, samosa, vadai etc, it is a much healthier option.

(Note : This depends on the item one consumes; moreover murukku & vadai etc are considered to be a healthier food as they contain fat, protein & carbohydrate only whereas a biscuit may contain several chemicals which may do some harm than our traditional snacks)

### BISCUITS ARE NOT LOW ON CALORIES

Marie which is considered to be one of the lighter biscuits contains 56 calories in just two pieces. You will require to do 30 minutes of aerobics to lose those calories.

If Marie adds so many calories then imagine the number of calories other sweeter biscuits and the butter cookies will add!

A good time to have a biscuit is after exercises and heavy activities. Because it is high in glucose/sucrose.

(Note: glucose may be present only in certain biscuits where glucose has been added as per label claim whereas all other biscuits will definitely contain sugar (which is chemically known as sucrose).

It can give a boost to your energy. But as a snack by itself, it would not give you nutrition that you should get especially after an activity. So eating cereals or fruits will be a better option.

Cream biscuits and fat rich cookies are a big No for a person watching their calorie intake.

## BISCUITS ARE NOT A GOOD SOURCE OF FIBER

Don't totally believe what they claim in the advertisements. Even with the fiber that is added in the biscuits, the content is much lower than the daily requirement for fiber. So instead of looking at biscuits for fiber we should look at fruits and vegetables for our requirement of fiber.

### COMPARATIVE TESTING

Comparative Testing is a formal process by which products & services of different vendors are tested for Quality; the services are tested for compliance to the regulations laid out by the regulatory authorities

**CONCERT** is undertaking to do this Comparative Testing for South India

under a grant from Department of Consumer Affairs, Government of India. This year, **CONCERT** is testing 7 products and 3 services. One of the products selected for testing are Biscuits.

34 different brands of biscuits from the four Southern States and Puduchery were grouped under 6 categories as indicated below.

1. Marie Biscuits	6 Brands
2. Arrowroot Biscuits	3 Brands
3. Salt Biscuits	5 Brands
4. Milk Biscuits	7 Brands
5. Cream Biscuits	8 Brands
6. Bakery Biscuits	5 Brands



**STATEWISE CATEGORYWISE SELECTION OF BISCUITS**

State	Major Groups	Marie Biscuits	Arrowroot Biscuits	Salt Biscuits	Cookies and Milk Biscuits	Cream Biscuits	Local brand (Bakery Biscuits)
<b>Kerala</b>		Britannia Marie Gold	(1) Pomsy – Roozy– Thin Arrowroot Biscuits (2) Foster – Arrowroot Biscuits	Parle Monaco Crisp Light, Salted Snack Classic Regular	Britannia Milk Bikis	Sunfeast Dream Cream	Butter Salt Biscuits (Best Cakes, Kochi)
<b>Tamil Nadu</b>		Sunfeast Marie Light – Original Extra Fiber		Sunfeast Snacky Salted Masti Crackers	Britannia Good Day Choco - Nut cookies	Britannia Bourbon – The Original Flavoured Cream Biscuits	Cookie Man, (Chennai)
<b>Karnataka</b>		(1) Parle Actift Digestive Marie High Fiber (2) Bisk Farm – Marie		Britannia Time Pass Classic Salted	(1) Lays Aliva Milk Minis – Sugar Vanilla Flavour (2) Nanjundeswara Ragi Salt Biscuit	(1) Britannia Treat Orange Flavoured Cream Biscuits (2) Amrut Mango Cream Biscuit	Macronal Crisp & Crunchy Salt Biscuits Bakers, (Bangalore)

State	Major Groups	Marie Biscuits	Arrowroot Biscuits	Salt Biscuits	Cookies and Milk Biscuits	Cream Biscuits	Local brand (Bakery Biscuits)
<b>Andhra</b>		Ankit Marie Mood	Britannia Nutrichoice Thin Arrowroot	Parle Krack Jack The Original Sweet & Salty Crackers	(1) Britannia Nutrichoice – Hi Fiber Digestive (2) Amulya – Healthy Rich Milk	(1) Parle FESTO Chocolate Flavoured Cream Biscuits (2) Dyna's Orange Flavoured Cream	Big Bakers (Hyderabad)
	<b>Puduchery</b>	McVitie's Marie		Britannia 50 50 Kabhi Maska Kabhi Chaska	Parle Milk Shakti	(1) Aachi – Enjoy Mango Cream Biscuits (2) Complian Cream Biscuits Orange Flavour	Adyar Bakery Butter Salt Cookies (Chennai)

## Ingredients in Biscuits

**As per Section 2.4.15 of the Food Safety & Standards (Food Products standards and food additives) Regulations 2011 Biscuits are classified under Bakery Products.**

They may consist of the following ingredients:

Biscuits including wafer-thin biscuits shall be made from Maida, Vanaspati or refined edible oil or table butter or desi butter or margarine or ghee or their mixture containing any one or more of the following ingredients, namely, Edible Common salt, butter, milk powder, cereals and their products, cheese cocoa, coffee extract, edible desiccated coconut, dextrose, fruit and fruits products, dry fruit and nuts, egg, edible vegetable products, ginger, gluten, groundnut flour, milk and milk products, honey, liquid glucose, malt products, edible oilseeds, flour and meals, spices and condiments, edible starches such as potato starch and edible flours, sugar and sugar products, invert sugar, jaggery, protein concentrates, oligofructose (max 15%) vinegar and other nutrients and vitamins.

## PARAMETERS TESTED

### I. HEALTH & SAFETY

**Tests performed on Biscuits (BIS or AOAC)**

#### 1. Total Fat

#### 2. Saturated fat

Saturated fats have a stable chemical composition – they are solid at room temperature and oxidize slowly. Health wise, saturated fats raise the level of cholesterol in the blood and in large quantities they can increase your risk of heart attacks and strokes.

#### 3. Total Sugar

These are part of the total carbohydrates content and are measured in grams. These contain sugars from natural, normally present in the food, and added sugars.

The type of sugars that have been added are indicated in the ingredients list-for example, glucose, fructose, sugar, dextrose, maltose, high-fructose corn syrup, fruit juice concentrate, turbinado, maple syrup, molasses, barley, and malt.

These added sugars, along with Trans-fats, should be avoided by anyone trying to improve body composition, health and performance.

#### 4. Total Salt

The amount of dietary salt consumed is an important determinant of BP levels and over all cardio vascular risk.

WHO recommends salt intake of less than 5 grams per person per day for the prevention of Cardio – Vascular Diseases (CVD). However, we consume salt nearly 10 grams a day; adding salt directly to some diet and drink and eating salt dense pickles, papad, etc.



NIN recommends that salt be reduced to 6 grams per person per day.

### 5. Cholesterol

(Tested only for Biscuits containing Butter Dairy fat or Egg)

Cholesterol, while necessary for the endogenous production of many substances in the body including Vitamin D and some hormones, can become a problem if it's too high.

### 6. Trans Fat (Fatty Acid Profile)

Trans fatty acids are the common name for unsaturated fat with trans-isomer (E-isomer) fatty acids. There is also evidence that the risk of **type 2 diabetes** is directly associated with consumption of saturated fat and Trans fat.

The consumption of Trans fats increases the risk of coronary heart disease by raising levels of LDL cholesterol and lowering levels of "good" HDL cholesterol. Nutritional authorities consider all Trans fats as equally harmful for health and recommend that consumption

of Trans fats be reduced to trace amounts.

There are two sources of Trans fat also known as Trans fatty acids:

- Trans fat formed naturally – this type of Trans fat is produced in the gut of some grazing animals. That is why small quantities of Trans fat can be found in animal products like milk, milk products, and meat.

Trans fat formed during food processing – this type of Trans fat is created when hydrogen is added to vegetable oil (a process called hydrogenation) to make it more solid. **Partially hydrogenated oils** are used by food manufacturers to improve the texture, shelf life, and flavor stability of foods.

### 7. Protein,

### 8. Carbohydrate,

### 9. Nutritional Information (calculated value of energy)

**Though NIN recommends a maximum of 2% of total calories may come from Transfat, the recommendations of WHO is only 1%. The link between saturated fat and Transfat and increased risk of heart disease is well established.**

**In 2004, Denmark was the first country to ban industrially-produced Trans fatty acids at a level of not more than 2% of total fat.**



## Recommended Dietary guidelines as per National Institute of Nutrition (NIN) (2011) as follows:

**Carbohydrate** - 50% – 60%

**Free Sugars** - < 10%

**Protein** - 10 – 15%

**Salt** - 6 grams per day

**Fat** - 20% – 30%

In other words NIN Hyderabad outlines the nutrition requirements for one adult Male, Female, and Children (10-12 years) as mentioned in the following table:

Person	Kilo calories allowed/day	Salt (g/day max)	Carbohydrate (g/day)	Total fat (g/day)	Trans Fat (g/day max)
Adults Male	2320	6	290 – 348	39 – 78	2.6
Adult Female	1900	6	263 – 315	35 – 70	2.1
Children (10 – 12 yr)	2100	6	238 – 285	32 – 64	2.3

## II. QUALITY

### 1. Moisture content

**2. Total Fiber** – This is done if the biscuit claims to be rich in fiber.

This is the amount of indigestible (insoluble fiber) or partially digestible (soluble fiber) bulk from plant foods such as fruits, vegetables, whole grains, oats, nuts and seeds and is measured in grams. Foods high in fiber are shown to be beneficial for weight control, diabetes, high cholesterol and some forms of cancer. Foods with six grams of fiber or more are considered “**high fiber**” foods.

### 3. Test to measure the deterioration of oil/fat if any.

a. Kries test

b. Acidity of Extracted Fat

### 4. Synthetic dye

The synthetic dyes if used improve

the visual appeal but they are harmful to health.

### 5. Ash insoluble in diluted hydrochloric acid (HCL)

This test is a measure of gritty, Sandy matter present in the biscuits.

## III. PACKAGING & LABELING

### Labeling of Foods

**FS&S Regulation 2.2. (Packaging, Labeling)** 2011 requires that every pre packaged food shall carry a label containing the following information.

- Name of the product
- List of ingredients
- Names/INS No. of additives
- Nutritional Information per 100gm or per serving including Energy value (in kcal),

- **Protein (in grams)**
- **Fat (in grams)**
- **Carbohydrates(quantity of sugar – In grams), as per BIS/Codex/AOAC methods**
- **Batch No**
- **Date of manufacture**
- **Best before Date or**
- **Expiry date**
- **Instructions for storage and preparation**
- **Address of Manufacturer, Telephone No in case of consumer complaints, if any**
- **Any other label declaration**
- **MRP**

## **LABEL CLAIMS**

**i. “Health Claims”** mean any representation that states, suggests or implies that a relationship exists between a food or a constituent of that food and health and include nutrition claims which describe the physiological role of the nutrient in growth, development and normal functions of the body, other functional claims concerning specific beneficial effect of the consumption or food or its constituents, in the context of the total diet, on normal functions or biological activities of the body. Such claims relate to a positive contribution to health or to the improvement of function or to modifying or preserving health, or disease, risk reduction claim relating to the consumption of a food or food constituents, in the context

of the total diet, to the reduced risk of developing a disease or health related condition;

**ii. “Nutrition Claim”** means any representation which states, suggests, or implies that a food has particular nutritional properties, which are not limited to the energy value but include protein, fat, carbohydrates, vitamins and minerals;

**iii. “Risk Reduction”** in the context of health claims means significantly altering a major risk factor for a disease or health-related condition.

1. Nutrition labeling is mandatory for most packaged foods in the United States, and is regulated by the Food and Drug Administration (**FDA**) and the U.S. Department of Agriculture. Unfortunately for many, what is on the labels can be difficult to understand. Additionally, many times consumers are misled by companies. In order to understand food labels completely it is important to be familiar with, and understand key terms used on food labels.
2. Key Food Nutrition label terms and International Standards are given in **Table below**.

**The following table indicates the standard requirement for a biscuit to be low in fat, low in sugar, Cholesterol free and fiber rich.**

**Nutrient Contents, Claims, and International Standards**

Component	Claim	Codex Standards (Not more than)	UK Standards	Proposed FS & SAI Standards * (Not more than)
<b>Fat</b>	Free	0.5g/100g		0.5g/100g
	Low	3g/100g	3g/100g	3g/100g
	Medium		3-20g/100 g	
	High		> 20 g/100g	
<b>Saturated Fat</b>	Free	0.1g/100 g		0.1g/100g
	Low	1.5g/100g	1.5g/100g	1.5g/100g
	Medium		1.5g To 5g/100g	
	High		> 5 g /100g	
<b>Cholesterol</b>	Free	0.005g/100g	-	0.005g/100g
	Low	0.02g/100g		0.02g/100g
<b>Sugar</b>	Free	0.5g/100g		0.5g/100g
	Low		5g/100g	5g/100g
	Medium		5-15/100g	
	High		> 15g/100g	
<b>Salt</b>	Low	0.12g/100g of Sodium or 0.3g/100g of Salt	0.3g/100g (Salt)	0.12g/100g of Sodium or 0.3g/100g of Salt
	Medium		0.3-1.5g/100g (Salt)	
	High		> 1.5 g/100g (Salt)	
<b>Dietary Fiber</b>	Source	3g/100g		3g/100g
	High	6g/100g		6g/100g

\* FS & SAI, New Delhi has published a Draft Regulation to amend the provisions of FS & S (Packaging & Labeling) Regulations 2011. This step aims to add a number of provisions to align with the International Standards.

Besides understanding the food label, consumers should understand the terms above because many food manufacturers make several health claims using the terms above. Studies

show consumers are often confused or actually misunderstand the terms. Many manufacturers actually use this to their advantage when marketing their products.

Failure to understand the labels by consumers could put their health at risk.

Even when a food is low in fat, the food may not necessarily be nutritious. Even a low-fat food can be high in sugar. Food companies also may make claims such as **“No Cholesterol”** (meaning there is no animal fat used in making the product), but that does not necessarily mean the product is low in fat.

The ability to read and evaluate food labels is not just a matter of choosing to eat healthy.

To those of us trying to gain muscle mass and improve body composition choosing the right mix of foods can be critical to our success. And for people trying to manage chronic disease like heart ailment or diabetes, label reading can at times even be a life saving matter.

Using some simple calculations you can figure out how much of the difference between total calories and calories from fat comes from carbohydrates and proteins. You can also simply figure out the number of calories that comes from carbohydrates and from protein by multiplying the grams of each by 4.

\* 1 gram of fat contains about **9 k. calories**.

\* 1 gram of protein contains about **4 k. calories**

\* 1 gram of carbohydrate contains about **4 k. calories**

## **RATING OF CRITERIA AND PARAMETERS**

We have chosen three major criteria against which the biscuits will be rated.

They are **(1) Packaging and Labeling, (2) Safety and Health, and (3) Quality.**

Biscuits are categorized into **(1) Marie, (2) Arrowroot, (3) Salt, (4) Cream, (5) Cookies and Milk Biscuits, and (6) Local brand (bakery biscuits);** the results are shown in separate tables for each category of biscuits.

Every test parameter under each major criterion will be evaluated / tested and scored.

Each criterion and parameter is rated individually on a 5-point scale. The rating given is as follows: **1 (Poor), 2 (Fair), 3 (Good), 4 (Very Good), and 5 (Excellent).** For any parameter, when it falls short of the standard requirement, the brand is rated as **Poor or Fair** based on the deviation from the standard. When it meets the defined standards it will be given the rating of **Good**. When it exceeds the minimum standards substantially, it will be rated **Very Good**. When it exceeds the standards significantly and shows appreciable innovation, it will be rated **Excellent**.

We have considered weightage for the criteria as below:

- Packaging and Labeling 30%
- Safety and Health 40%
- Quality 30%

**COMPARATIVE NUTRITIONAL INFORMATION GIVEN IN THE FOLLOWING TABLE IS AS PER EXISTING INTERNATIONAL NORMS AND ALSO BASED ON THE PROPOSED DRAFT REGULATIONS PUBLISHED BY FS & SAI, NEW DELHI**

Nutrients	Marie Biscuits						Arrowroot Biscuits		
	Sun feast Marie Light Biscuits	Mc Vitie's Marie Biscuits	Parle Actifit Digestive Marie Biscuits	Britannia - Marie Gold (Cheers to Health) Biscuits	Ankit Marie Mood Biscuits	Bisk Farm - Marie Biscuits	Pompy - Roozbi Thin Arrowroot Biscuits	Foster Arrowroot Biscuits	Britannia Nutri Choice Thin Arrowroot
Total Sugar	High	High	High	High	High	High	Medium	Medium	High
Total Fat	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Saturated Fat	High	High	High	High	Low	Medium	High	Medium	High
Total Salt	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Low
Fiber	Low	Low	Low	Low	Low	Low	Low	Low	Low
Cholesterol	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

BDL - Below Detectable Level.

Nutrients	Cream Biscuits							
	Britannia Bourbon - The original Flavored Cream Biscuits	Aachi Enjoy- Mango Cream Biscuits	Britannia Treat Orange Flavored Cream Biscuits	Sun feast Dream Cream - Strawberry & Vanilla Biscuits	Complan Cream Biscuits - Orange Flavor	Parle- Festo Cream Biscuits	Dyna's Orange Flavored Cream Biscuits	Amrut - Mango Cream Biscuits
Total Sugar	High	High	High	High	High	High	High	High
Total Fat	Medium	Medium	High	High	Medium	Medium	Medium	Medium
Saturated Fat	High	Medium	High	High	High	High	High	Medium
Total Salt	Low	Medium	Low	Low	Medium	Medium	Medium	Medium
Fiber	Low	Low	Low	Low	Low	Low	Low	Low
Cholesterol	BDL	BDL	15mg	15mg	BDL	10mg	BDL	BDL

BDL - Below Detectable Level.

Nutrients	Salt Biscuits				Local Brands ( From Unorganized Sector)					
	Britannia 50-50 Kabhi Maska Kabhi Chaska Biscuits	Britannia Time Pass Classic Salted Biscuits	Sunfeast Snacky Salted Masti Crackers	Macronal - Crisp & Crunchy Salt Biscuits (Karnataka)	Parle Krack Jack - The Original Sweet & Salty Crackers	Parle - Monoco Salted Snack	Adyar Bakery Butter salt Cookies (Local Brand Tamil nadu)	Cookie man (Local Brand Tamil nadu)	Big Bakers (Local Brand Andhra)	Butter Salt Biscuits (Local Brand Kerala)
Total Sugar	Medium	Medium	Medium	Low	High	Medium	Medium	Medium	Medium	Medium

Total Fat	Medium	High	Medium	High	High	High	High	High	High	High
Saturated Fat	High	High	High	High	High	High	High	High	High	High
Total Salt	High	Medium	High	Medium	Medium	Medium	Medium	Low	Medium	Medium
Fiber	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Cholesterol	BDL	5mg	BDL	BDL	BDL	BDL	BDL	20mg	15mg	12mg

Milk Biscuits and Cookies										
Nutrients	Britannia Milk Bikis	Lays -Aliva Milk Mimiis-Baked	Parle Milk Shakti (Biscuits with the goodness of milk & Honey)	Amulya - Healthy Rich Milk Tasty Biscuits	Sri Nanjundeswara 1965- Ragi Salt Ragi Biscuits	Britannia Good Day Choco-Nut Cookies	Britannia Nutrigrain - Hi Fiber Digestive Nutri Grain			
Total Sugar	High	High	High	High	Low	High	Medium			
Total Fat	Medium	Medium	Medium	Medium	High	High	High			
Saturated Fat	High	High	High	High	High	High	High			
Total Salt	Medium	Medium	Medium	Low	Medium	Medium	Medium			
Fiber	Low	Low	Low	Low	Low	Low	Medium			
Cholesterol	10mg	BDL	BDL	BDL	1535mg	13mg	BDL			

BDL - Below Detectable Level.



## SCORING AND RATING TABLE\*

Brand Name	Packaging & Labeling	Health & Safety	Quality	Total score by different weightages (%)	MRP in Rs as per Label/wt
<b>Marie Biscuits</b>					
<b>Ankit- Marie Mood</b>	V.Good	V.Good	Good	82.58	12 (120g)
<b>Sunfeast - Marie Light</b>	V.Good	V.Good	Good	82.58	20 (250g)
<b>Parle - Actifit Digestive Marie</b>	Good	V.Good	Good	81.46	5 (67g)
<b>Mc Vitie's – Marie</b>	Good	Good	Good	78.26	25 (324g)
<b>Britannia - Marie Gold</b>	Good	Fair	Good	73.46	28 (320g)
<b>Bisk Form – Marie</b>	Good	Poor	Fair	67.24	28 (300g)
<b>Arrowroot Biscuits</b>					
<b>Britannia -Nutri Choice Thin Arrowroot</b>	Good	V.Good	Good	83.06	15 (166g)
<b>Foster -Arrowroot Biscuits</b>	Fair	Fair	Good	73.93	15 (200g)
<b>Pomsy - Roozbi Thin Arrowroot Biscuits</b>	Good	Fair	Fair	70.44	13 (140g)
<b>Cream Biscuits</b>					
<b>Complan -Cream Biscuits</b>	V.Good	Good	Good	79.38	12 (75g)
<b>Dyna's - Orange Flavored</b>	V.Good	Good	Good	79.38	5 (51g)
<b>Britannia - Bourbon The Original</b>	Good	Good	Good	76.66	25 (196g)
<b>Aachi- Enjoy Mango Cream biscuits</b>	Good	Good	Good	75.06	5 (55g)
<b>Sunfeast - Dream Cream Strawberry and Vanilla Biscuits</b>	V.Good	Fair	Good	74.58	10 (75g)
<b>Britannia -Treat Orange Flavored Cream Biscuits</b>	Good	Fair	Good	73.46	25 (145g)
<b>Amrut – Mango Cream Biscuits</b>	Poor	V.Good	Good	73.28	5 (60g)
<b>Parle Festo Cream</b>	Good	Fair	Good	71.86	5 (70g)

Brand Name	Packaging & Labeling	Health & Safety	Quality	Total score by different weightages (%)	MRP in Rs as per Label/wt
<b>Salt Biscuits</b>					
<b>Britannia - Time Pass Classic salted Biscuits</b>	Good	V.Good	Good	76.66	15 (150g)
<b>Sunfeast - Snacky Salted Masti Crackers</b>	V.Good	Good	Good	76.18	10 (93g)
<b>Britannia -50-50 Khabi Maska Khabi Chaska</b>	Good	Good	Good	73.46	10 (61.5g)
<b>Parle - Monoco Salted Snack</b>	Good	Good	Good	75.06	10 (120g)
<b>Parle - Krack Jack – The Original Sweet and Salty Crackers</b>	Good	Fair	Good	71.86	10 (100g)
<b>Macronal - Crisp &amp; Crunchy Salt Biscuits - (Local Karnataka)</b>	Poor	Good	Good	69.60	25 (200g)
<b>Milk Biscuits &amp; Cookies</b>					
<b>Parle - Milk Shakti</b>	Good	V.Good	Good	78.26	5 (75g)
<b>Lays -Aliva Milk Minis-Baked</b>	Good	Good	Good	76.66	15 (50g)
<b>Britannia Nutrchoice - Hi Fiber Digestive Nutri Grain</b>	Fair	Good	V.Good	76.24	18 (100g)
<b>Amulya - Healthy Rich Milk Tasty Biscuits</b>	V.Good	Fair	Good	74.58	20 (175g)
<b>Britannia -Good day Choco-Nut Cookies</b>	Good	Fair	Good	73.46	30 (140g)
<b>Britannia- Milk Bikis</b>	Good	Fair	Good	73.46	10 (114g)
<b>Sri Nanjundeswara 1965- Ragi Salt Ragi Biscuits</b>	Poor	Good	Good	68.48	20 (75g)

Brand Name	Packaging & Labeling	Health & Safety	Quality	Total score by different weightages (%)	MRP in Rs as per Label/wt
<b>Local Brand Biscuits (From Unorganized Sector)</b>					
<b>Adyar -Butter Salt Cookies (Local Tamilnadu)</b>	Not Available	Good	Good	Not Applicable	35 (200g)
<b>Cookie man - Local brand Tamilnadu</b>	Not Available	Good	Good	Not Applicable	190 (250g)
<b>Big Bakers - Bakers &amp; Confectioners (Andhrapradesh)</b>	Not Available	Fair	Good	Not Applicable	35 (200g)
<b>Butter Salt Biscuits(Cookies) - Local brand Kerala</b>	Not Available	Fair	Good	Not Applicable	35 (250g)

**\* This Scoring and Rating Table has been prepared based on the Nutritional Analytical Values obtained on Chemical Analysis.**

We shall present the results against these major criteria in each category that in our opinion is fair and without any subjective element. The user is encouraged to study these results and make his buying decisions based on his requirements and judgment.

### Observations

#### Proposed New FS & SAI Regulations- A way to check the misleading advertisements

The proposed new Draft Regulations on labeling claims under FS & S Act 2006 states that claims must be truthful, unambiguous, meaningful, and not misleading.

Claims containing adjectives such as "Natural," "Fresh," "Pure," "Organic," "Original," "Traditional," "Premium," "Finest," "Best," "Authentic," "Genuine," "Real," etc shall be in accordance with the conditions laid down therein. Even words like, "Home made," "Home Cooked," which may give an erroneous impression to the consumer shall not be used.

#### Nutrients Comparative Claims

Nutrients Comparative Claims that a particular nutrient is low, medium, or high with respect to a defined level is not mandated in our food safety regulations.

Only very recently, just before the publication of this result, FS & SAI, New Delhi has come out with a very detailed draft amendment to the newly published FS & S Regulations 2011.

It is one of the progressive steps to all consumers to make an informed choice if only they spend a few minutes to read the label and understand it correctly.

When the entire world has become a single food market, it is high time that we also fall in line with other countries

who give their consumers more inputs as far as product information is concerned.

**Beware !!!**

**Some of the lesser known brands resemble the more popular brands in the shelves!!!**

When we were collecting samples of biscuits from the 4 Southern states for our comparative testing, we came across some look alike brands where the consumer could easily be cheated. These are

Well known brand	Look alike brand
Complan cream biscuits	Dyna's Orange biscuits
Britannia Marie gold	Ankit marie mood
Parle Krack Jack	Ankit Krack Crunch
Britannia Milk Bikis	Dyna's Milk Bite



**ARE THE HEALTH CLAIMS JUSTIFIED?? – some observations.**

Name of Biscuit	Claim	Fact from table	Remarks
<b>Horlicks Nutribic</b>	<ol style="list-style-type: none"> <li>1. 1<sup>st</sup> digestive biscuits with mix of Cereal &amp; Fruit Fiber</li> <li>2. Fiber Rich Digestive Biscuits</li> <li>3. Digestive Smart</li> </ol> <ol style="list-style-type: none"> <li>a. Zero Trans Fat</li> <li>b. 100% RDA of Calcium</li> <li>c. 100% RDA of Vitamin D</li> <li>d. No Artificial Flavor</li> <li>e. Protein Punch</li> </ol>	<ol style="list-style-type: none"> <li>1. Wheat fiber 7.1% &amp; Apple fiber 2.4%</li> <li>2. Total Dietary fiber 6 grams</li> <li>3. Fiber rich foods aid digestion</li> </ol> <ol style="list-style-type: none"> <li>a. Trans fatty acid 0 gram</li> <li>b. Calcium 800 mg</li> <li>c. Vitamin D 5 mcg</li> <li>d. Nature identical flavor (spices &amp; condiments)</li> <li>e. Protein 6 gm (Protein isolate)</li> </ol>	<p>Note 1: 7.1% of wheat fiber &amp; 2.4% apple fiber is available in 8 biscuits (one serving of 100 grams).</p> <p>Note 2: Since the 100% RDA of calcium is 800mg, 8 biscuits will contribute the required amount of calcium &amp; vitamin D.</p> <p>Note 3: To get 6gms of dietary fiber one has to consume the entire pack of the biscuit.</p> <p>Moreover fruits and vegetables are the best source of dietary fiber.</p>
<b>Mc Vities HobNobs</b>	<ol style="list-style-type: none"> <li>1. Goodness of Oats</li> <li>2. Whole wheat &amp; Honey</li> <li>3. Oatmeal Cookie</li> </ol> <ol style="list-style-type: none"> <li>a. Zero Cholesterol</li> <li>b. Goodness of natural honey</li> <li>c. No trans fats</li> </ol>	<ol style="list-style-type: none"> <li>1. Oats 20.34%</li> <li>2. Whole wheat flavor 12.98%</li> <li>3. Hence the claim oatmeal cookie</li> </ol> <ol style="list-style-type: none"> <li>a. Cholesterol 0 mg</li> <li>b. Honey 1.3%</li> <li>c. Trans fat 0g</li> </ol>	<p>Note: Mc Vities HobNobs claims that their product contains 20.34% Oats, 12.98% whole wheat flavor &amp; 1.3% Honey for 100grams. This works out to 1.8 grams of Oats, 1.18 grams of whole wheat flavor and 0.11 grams of Honey per biscuit.</p>

Name of Biscuit	Claim	Fact from table	Remarks
<p><b>Britannia Nutrichoice-Multigrain Thins</b></p>	<ol style="list-style-type: none"> <li>1. HEALTHY SNACK</li> <li>2. Non Fried</li> <li>3. Multigrain</li> <li>4. Flaxseeds</li> <li>5. Low Cal</li> <li>6. Low Fat</li> </ol> <ol style="list-style-type: none"> <li>a. Zero cholesterol</li> <li>b. Zero Trans fat</li> </ol>	<ol style="list-style-type: none"> <li>1. Contains multi grains &amp; Flaxseeds, Hence this claim</li> <li>2. Biscuit is not a fried snack.</li> <li>3. (Corn, Oats, Ragi &amp; Rice) 5%</li> <li>4. Flax seeds 2.8%</li> <li>5. Calories 461 kcal</li> <li>6. Fat 20.5 gm (The claim made on the label that low calorie &amp; low fat are compared to fried snack products available in the market)*</li> </ol> <ol style="list-style-type: none"> <li>a. Cholesterol 0 mg</li> <li>b. Trans fat 0g.</li> </ol>	<p>Note : As per international standard &amp; Proposed draft regulations on labeling on FSSAI low calories means a product that does not contain energy more than 40kcal per 100grams for solids, whereas this biscuit contains 461 Kcal per 100g,</p> <p>Hence the claim is misleading. The manufacturer compares it with other fried snacks and claims it to be low in calorie in comparison.</p> <p>(The product is not available in the market. Production has been stopped two months ago)</p>

Name of Biscuit	Claim	Fact from table	Remarks
UNIBIC Multigrain Breakfast Cookies	<ol style="list-style-type: none"> <li>1. Multigrain Breakfast cookies</li> <li>2. 10 vital nutrients</li> <li>3. High dietary fiber</li> <li>4. Zero Cholesterol</li> <li>5. Trans fat free</li> </ol>	<ol style="list-style-type: none"> <li>1. Wheat flavor, Oats, Ragi, Rice &amp; Corn (35%)</li> <li>2. Contains 13 different nutrients</li> <li>3. Fiber 12.5 gm</li> <li>4. Cholesterol 0mg</li> <li>5. trans fat 0g</li> </ol>	<p>Note 1: The biscuit contains 13 different nutrients</p> <p>The manufacturer claims that 10 vital nutrients are present in the the biscuit. There is no mention of them or the % of the nutrients present.</p> <p>The claim regarding the fiber content is only mentioned as 12.5%. There is no reference to RDA of fiber. (At present there is no official recommended daily allowance (RDA) for dietary fiber.</p> <p>However, official guidelines advise about 20-25g of fiber per day, for both men and women. Thus consuming the entire pack of biscuits will provide a person only 50% of the dietary fiber he/she requires.</p>



Name of Biscuit	Claim	Fact from table	Remarks
<p>Britannia Nutrichoice-5 Grain Biscuits</p>	<ol style="list-style-type: none"> <li>1. Oats – Reduces Cholesterol</li> <li>2. Corn – Heart Health</li> <li>3. Ragi – High Calcium, Hi Fiber</li> <li>4. Rice – Low fat</li> <li>5. Wheat – Source of Energy</li> <li>6. No Trans fat</li> <li>7. No Cholesterol</li> <li>8. 3 biscuits (one serving) of Britannia Nutri choice 5 Grain Biscuits with a cup of milk, and a banana in the morning gives your day a healthy start.</li> </ol>	<ol style="list-style-type: none"> <li>1. High in anti-oxidants &amp; fiber which are clinically proven to help reduce bad cholesterol.</li> <li>2. Corn contains vitamin B<sub>1</sub>, Poly unsaturated fatty acids, potassium and magnesium, all these are known to make heart healthier.</li> <li>3. Apart from being a good source of fiber, it is also rich in calcium &amp; other minerals that help in strengthening of teeth and bones.</li> <li>Dietary fiber 4g</li> <li>4. Low in fat. Contains complex carbohydrates. Complex carbohydrates get digested &amp; absorbed slowly than refined sugars.</li> <li>5. Contains natural proteins and carbohydrates that provide energy.</li> <li>6. Trans fatty acids og</li> <li>7. Cholesterol omg</li> <li>8. A general claim about the product</li> </ol>	<p>Note : serial Numbers 1,2,3,4 and 5 are giving the qualities, Nutritional composition of Oats, Corn, Ragi, Rice, Wheat respectively. The above statements have nothing to do with the biscuits inside the packet as the above statements are clearly printed with the pictures of the above food grains.</p> <p>Since the biscuits are not tested for analytical parameters no comments on the qualities like transfat &amp; cholesterol etc could be offered.</p>

Name of Biscuit	Claim	Fact from table	Remarks
Tiger Biscuits	1. Contains 25% daily growth nutrition's per 100g	1. Iron 7mg, Calcium 100mg, folic acid 25mg vitamin A 150mg, Vitamin D 25mg	<p>Note : Growth nutrition's reference to five micro nutrients iron, vitamin A, Vitamin D, Folic acid &amp; Calcium required as per RDA for 7 to 9 years old Indian children (NIN 2007)</p> <p>The 100g pack provides 1/4<sup>th</sup> of the daily requirement of the growth nutrients. Thus a single biscuit will contain negligible amount of nutrients.</p> <p>Therefore, to say the biscuit provides growth nutrients in their advertisement is misleading.</p>

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