

A GUIDE TO GOOD NUTRITION

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Nutrition is an integral part of my life's ongoing effort to spread health awareness .beginning with an overview on nutrition; the guide goes on to stress the importance of eating adequate and appropriately in meal balance. Health for life is particularly interesting as it addresses our specific food requirements through the years. The following chapters elaborate on the importance of nutrients. Their use and misuse, while beverages discuss the good and bad in what we commonly drink. Having covered the basics on nutrition, fitness check contains indicators to help assess your state of health. The final chapter will throw light on my involvement with health and nutrition over the years. For food composition table (a comprehensive list of nutritive values in raw materials).

The real usefulness of your '**A GUIDE TO GOOD NUTRITION**' lies in referring to it constantly. By making a habit of leafing through the chapter every now and then, you will find making healthy choices for a healthy body & will become habitual too.

Nutrition

Get the Fundamentals Right

An apple a day keeps the doctor a way!

How often we've heard this phrase and how little we think about its real meaning. Beyond drawing attention to the goodness of the humble apple. Its real insight lies in the knowledge the nutrition foods make a healthy body. Simply put nutrition is about the relationship between food and good health. We require nutrients-the various components that make up food-for normal growth and development. Nutrition gives us energy help to build/heal tissues, fight infections and enable our bodies to execute daily tasks with ease. There are innumerable nutrients contained in food and each contributes to our overall health and well - being.

Evidence in interest in nutrition dates back several thousand years, however the importance of "eating right" and "healthy living" has never been more relevant than now. Research increasingly shows a close connection between what we eat and the risk to developing several health problems. While our genes, to some extent determine our state of health, the type, variety, preparation methods and positions of foods we eat play a far more significant role. It is true that simple modification in our dietary habits can result in a life time health and happiness by preventing (or even- reversing) many health issues.

The key to good Nutrition is Balance, Moderation and Variety

- 🍎 **Balance** refers to the right mix of nutrition in our daily diet.
- 🍎 **Moderation** is all about eating neither too much nor too little of any nutrition as both extremes could eventually lead to several health problems.
- 🍎 **Variety** in food enables our bodies to get the entire nutrient requirement to stay fit and healthy.

Nutrients

Foods contain a variety of nutrients required by our bodies every day. On an average, we need a daily dose of approximately 40 odd nutrients which sounds like a lot if it weren't for the fact that each of these nutrients is

available in the foods we ordinarily eat. The nutrients essential for normal body functioning includes: **carbohydrates, fats, protein, vitamins, minerals, fibre and water.**

Some foods are more beneficial than others, Basic knowledge of different foods and the nutrients they contain can go a long way in ensuring that we eat optimally for good health.

Interestingly, our bodies require some nutrients in much larger quantities than others, these nutrients-carbohydrates, protein and fat- are collectively known as **Macronutrients**. Macronutrients give us energy in the form of kilocalories (**Kcals**), Have you ever wondered why we tend to eat far more Rice, Wheat Ragi, Jowar and Bajra than Meat Fish,

Fruits or Vegetables?

Cereals like rice, ragi, wheat, etc. are abundant in carbohydrates (the body's main energy supplier) and therefore eaten in substantial quantity.

Conversely, nutrients that our bodies need in lesser quantity are called **Micro- nutrients. Vitamins and Minerals** are the micronutrients in our diet. Often dismissed, water and fibre are two other important nutrients that play a pivotal role in our bodies. To ensure that we fulfill all our nutrients requirements we need to know a lot more about foods and their nutrients content. This is discussed in detail in the next few pages are mentioned in board food groups and the nutrients they provide.

Energies -Rice, Wheat, Ragi, Noodles. Rice, Wheat, Ragi, Noodles etc. all come under the board category of cereals. Cereals are predominantly packed with carbohydrates, (**commonly referred to as carbs or carbo**s). They also have some amount of vitamins and minerals. (E.g. **Ragi** is rich in **calcium** and **rice** is a good source of **vitamin -B**). Although not a cereal, potato also contains a considerable amount of Carbohydrates and therefore calories, in fact, one medium-sized potato (Approx, 100g) contain the same amount of carbohydrates and calories as a teacup of cooked rice.

As long ago as 4000 B c. Hippocrates recognized the link between good eating habits & a healthy life when he said "let food be your medicine & medicine be your food"

What do Carbohydrates do?

A carbohydrate gives us energy. Our bodies adsorb carbohydrates from the foods we eat and convert them into energy. Like fuel in an engine, Carbohydrates power all our body activities right from breathing to running, thinking etc.

1 G of carbohydrates provides 4 Kcals of energy.

Depending on their structure, there are two types of carbohydrates

Simple: simple carbohydrates are found in sugar, honey, Jaggery, etc. to know more about this group;

Complex carbohydrates are found in rice, wheat, ragi etc... In the form of starch. Our bodies digest these foods over a long period of time and release energy from them more gradually. Complex Carbo-hydrates provides us the energy to sustain any longer duration sport or exercise routine.

Did you know that whole wheat flour (Atta) is healthier than refined wheat flour (Maida?).

Complex Carbo-hydrates can be either refined or unrefined whole wheat flour (Atta) & known as an unrefined Carbo-hydrates because the bran (outer skin of the grain) is retained. Rich in fibre and other important micro-nutrients, and unrefined Carbo hydrates are a more wholesome choice of food for every day consumption.

As the name suggest refined wheat flour (Maida) is a refined carbohydrates, all cereals belonging to this category loose their fiber and micro nutrient content in the refining process. Eating to much refined carbohydrates can cause health problems ranging from cavities to gastric irritation and constipation.

Given below are examples of unrefined and refined carbohydrates.

UNREFINED	REFINED
Atta	Maida
Brown Bread	Noodles
Brown Rice	Polished Rice
Ragi	White Bread

How Much is Enough?

Nutritionists recommended that cereal make up the bulk of our diet providing 60 -70% of our daily calorie requirements i.e., approximately 6-11 servings per day.

Instant Energizers

Sugar, Honey, Jaggery

Sugar, honey, Jaggery etc. belong to another food group packed with simple carbohydrates, simple, because they are very quickly digested and observed by our bodies to provide instant energy.

Remember, Sugar – Free products are not necessarily calorie – free, so watch our! Sugar in particular, is a chemical it contains to other nutrients besides Carbo hydrates and therefore the energy from it comes in the form of empty calories. Honey and Jaggery, on the other hand are natural products and therefore contains additional nutrients like minerals.

How Much is Enough?

Instant energizers are an optional part of our diet, while small quantities of sugar can cause no harm, excessive intake certainly has some draw backs like increasing body weight causing stress and anxiety and panic it can also lead to dental decay, (particularly in children) , Diabetes mellitus, etc. So remember this group may taste good, but its effect on our bodies is not always positively. Eat it sparingly, maybe just as a special treat or an occasion.

Concentrated Energizers -Oil, Butter, Vanaspati, Ghee.

Concentrated energizers- Oil, butter, Vanaspati, ghee,

These food groups are rich in fat. Although needed by our bodies in limited amounts.fat is the root cause of numerous modern day health problems. By learning about the different types of fat and the roles they play in our bodies, we will easily understand why it is important to consume just enough to remain healthy.

What Does Fat Do?

Fat is a concentrated source of energy. As mention above, we require a small quantity of fat to,

- 1) Insulate our bodies from cold and cushion all our organs.
- 2) Enable our bodies to utilize vitamins like A, D, E, and K.

The calories from 1g of fat 9 kcal, is more than double of what will get from 1g of carbohydrates or proteins.

How Much is Enough?

Fat must be eaten most sparingly, nutritionists recommended that fat should provide not more than 10.15% of daily calorie requirements that is 4 to 5 serving per day. For how much is 1 serving?

Builders -Dal, Milk, Meat, Fish, Poultry, Egg.

Dal (also known as pulses) Nuts, milk products, milk, meat, fish, poultry and eggs share one pre-dominate nutrient-proteins.

What Does Protein Do?

Protein is the main building block of our bodies. All our cells and tissues are made of proteins. Right from the growth of a finger nail to healing a wound, it's the proteins in our bodies that makes it all happens, also an energy provider. The body uses protein energy only after it has exhausted the energy provided by carbohydrates.

Like Carbohydrates, 1g of Protein Provides 4 Kcal of Energy.

Protein is made up of very small unit called amino acids; there basically 20 amino acids that linked together forming chains in many different combinations to create thousands of proteins, some amino acids can be manufactured by our bodies. However, some cannot and therefore must be obtained through the food we eat. Those proteins units are appropriately called essential amino acids. Needless to say, we have to ensure that we eat the right combinations of proteins-rich foods to fulfill our daily requirement of essential amino acids.

We get protein through vegetable and animal sources. However the amount and quality of the protein in both very considerably.

- **First Class Protein** is found in meat, fish, and egg, poultry, milk and milk products. It contains most of the essential amino acids and is therefore of very high quality.
- **Second Class Protein** is found in Dal, nuts and vegetables (peas, beans etc...)It does not contain all the essential amino acids and is hence referred to as second class protein.

Ancient Chinese Physicians Prescribed Germinated Gram or "Sprouts" for Curing Many Disorders Over 5000 Years Ago.

Our bodies can mix and match to build first class protein. So, vegetarians too can get their protein requirements with the right combination of vegetarians food sources. **(Whole pulses; rich in protein, vitamins, minerals.)**

Combine a cereals with pulse (like in idly or khichdi) and you have got all the first class protein your body needs. Apart from proteins, the builders are rich in several other nutrients, dals, contain some amount of carbohydrates. Whole pulses (also known as gram) like channa, rajma, masoor, etc... Especially this sprouted variety, have many nutritional benefits. Other than just being rich in protein.

Germinated Gram- also known as sprouts-are an excellent source of many vitamins and minerals. A hand full in salad or any other food preparations can pack in more nutrition than a bottle of health pills.

Milk And Milk Products-contain very good quality protein. That's not surprising considering the only source of protein for an infant is milk. Milk, in the form of curd is even better because the process of fermentation breaks down the protein into its simplest form making digestion easier. Besides proteins, milk contains vitamins and minerals like riboflavin and calcium. Either essential good health across or age groups. Milk is a must in every ones daily diet.

Did You Know The Whey of Curd (the liquid that separates' from it) is rich in protein? So, never threw it away. Kneading into your chapatti dough or add to curries.

Meat, Fish, and Poultry-are source of first class protein and vitamin B12. But the down side to meat and poultry is fat. In addition, meats are traditionally cooked in extra oil. So not only does the fat content increase, but the risk of many health problems like heart diseases, etc... Is also heightened. Meat must therefore be eaten in moderation using the methods of cooking that require very little or virtually no oil at all.

Did You Know Nutritionists Recommend Fish as the Healthier Non-Vegetarian Option Because Its Fat is Known to Protect the Heart?

Egg is an excellent source of protein. In fact, Egg white contains all the amino acids. Making it a perfect source of protein, so much so the study of nutrition uses the quality of protein found in egg as a standard to compare other source of protein.

Protein is found in both egg white and yolk, while **fat** is mainly **concentrated** in **yolk**.

So, **Non-vegetarians** can avoid fat and get their protein by just eating or **two egg whites every day**.

How Much is Enough?

Nutritionist's recommend that 15-20% of our daily calorie requirement be fulfilled with fruits rich in proteins from either vegetables or animal sources i.e. approximately 2-4 servings of milk and 1-2 servings of Dal.

Protectors - Vegetables and Fruits

Vegetables and fruits are two different food groups that contain plenty of vitamins, minerals and fibre, green leafy vegetables like spinach, amaranth, etc. are abundant in calcium, iron, vitamin-C and beta –carotene. All citrus fruits (orange, sweet lime, lemon etc.), grapes, banana, potato, tomato etc, are also rich sources of anti-oxidants and they play an important role in our bodies.

Besides vitamins and Minerals- most vegetables like cauliflower , brinjal, cucumber, cabbage, drumstick etc. contains some amount of carbohydrates in the form of indigestible in the fibers, fruits too have carbohydrates in the form of simple sugars.

The minerals and vitamin check list on coming pages which give additional information on some of the important vitamins and minerals and the fruits in which they are found.

What do Vitamins and Minerals do?

Although required in very small quantities, vitamins and minerals are vital for normal body functional. They are needed for growth development, mental alertness.etc often referrers to as protectors or immunity builders. They help build our resistance to infection.**Vitamins and minerals** do not contain calories, however, they catalyses or speed up all the biochemical reactions in our bodies they also help our bodies utilize carbohydrates; protein and fat obtain from food.

Vitamins

There are approximately 13 vitamins that fall under two main categories

 **Water soluble**

 **Fat soluble**

As the name suggest they need either water or fat to travel to different parts of our body. Water soluble vitamins includes the B- group of vitamins (B1, B2, B3, folic acid etc) and vitamin C. the fat soluble vitamins are A, D, E & K.

Standards of Measurement

CUPS	TEASPOON	TABLESPOON	GLASS	SOPU BOWL
½ cup=75 MI	½ tsp=2.5 MI	½ tbsp=7.5 MI	1 glass=300 MI	1 Bowl=200MI

HOW MUCH IS 1 SERVING?	
Food Group	1 Serving Equals
Cereals	1 cup rice/2 chapattis/2 slices of bread/2 idlis
Vegetables	1 cup cooked vegetables
Fruits	1 medium-sized Apple/Banana/orange/100 gms of any fruits
Milk & Milk Products	1 cup milk/1 cup curd
Pulses & nuts	1 cup cooked dal
Meat, fish & Poultry	4-6 cubes(50Gms) Meat/2 slices(100Gms) Fish/2 pieces(100gms) chicken
Sweeteners	1 tsp Sugar/Honey/Jaggery
Fats & Oils	1 tsp oil/ butter/Ghee
1 cup=150MI	1 tsp=5 MI
	1tbsp=15 MI

To lose weight & still ensure a balanced diet, a few alterations in the number of servings at any of the recommended calorie levels are required. For ex: to reduce your daily calorie intake by 200 Kcals, you need to take away ½ serving for each food groups, except vegetables and fruits. Conversely, to increase your calorie intake by 200 Kcals, 1/2 serving to the different food groups, except fat, oil & sweeteners. White marginal alteration in the number of serving can be made by anyone to lose weight; drastic changes in the caloric intake can adversely affect your health and therefore, should not be made without consulting nutritionists.

Although the recommendations of food pyramid ensure a balanced diet, a common concern that remains is, “do we need to supplement our nutritional intake with multi-vitamins and mineral tablets”?

The answer is, No. A person leading a relatively normal life which includes a balanced diet and some physical activity needs no supplements. However, when ill, unable to eat properly, under stress, etc. It may be wise to include a multi-vitamins and mineral tablet for a short while only.

Remember, nutritional supplements should not be used as substitutes for a healthy and balance diet.

It Is Important to Know that tur Bodies Cannot Manufacture Vitamins And Minerals.

It is important to know that our bodies cannot manufacture vitamins and minerals. These nutrients have to come from the foods we eat i.e. Vegetables and fruits. Unfortunately both nutrients are very sensitive to prolonged soaking. Extended cooking time and high cooking temperature can destroy them. That is why vegetables and fruits need to be cooked with special care to retain their natural goodness.

How to get best out of vegetables and fruits

- Wash before peeling.
- Peel only the inedible skin, as little as possible, since most nutrients lies just beneath and are lost through excessive peeling.
- Avoid prolonged soaking in water as the water- soluble vitamins will get drawn out.
- Cook on low heat for the shortest possible time.
- Use mineral water while cooking.

NOTE/TIPS-Did you know, home made jams/sauces of seasonal fruits or vegetables are much healthier because they are preservative – free?

Fibre

Fibre: Have you ever wondered what puts the crunch in to bite of carrot or apple?

It's the fibre. All food of plant origin contain fibre, fibre is a complex carbohydrate found in the leaves, seeds and skin of vegetables, fruits, cereals and pulses. We tend to create a deficiency of dietary fibre in our bodies by consuming less fresh fruits and vegetables and lots more refined food. This unhealthy habit can lead to many health problems from constipation to color cancer.

What does Fibre do?

There is more to fibre than just the crunch, what grandma refers to any roughage, scientists call fibre. A diet rich in fibre has many benefits.. Indigestible, fibre combines with waste in our bodies and helps to through it out. When eaten, it causes us to feed full for a longer period of time. Fibre also plays an important role in reducing blood cholesterol and sugar level in our bodies.

How to 'Fibre up'?

- 🍲 Mix grated vegetables like carrot into dough when making chapattis or parathas.
- 🍲 Add spinach or any gourd to your favorite meat recipe.
- 🍲 Substitute half the quantity of refined flour (Maida) with whole wheat flour (Atta), when baking a cake.
- 🍲 Eat fruits and vegetables with their edible skin.
- 🍲 Instead of drinking fibre-fruit juices, eat a piece of fruit and drink a glass of water.
- 🍲 Experiment with a variety of fresh green salads and sprouts.

How Much is Enough?

Owing to the vital functions it performs, nutritionists recommend a daily intake of about 30-40 gms of fibre i.e. approximately 2-4 servings of fruits,3-5 servings of vegetables and 2 servings of fresh green salad for how much is 1 serving which have been already discussed.

Life Saver

Water

Water is a very essential nutrient without which human life cannot survive. More than 70% of the human body is made up of water. Loss of water through sweat, excretion, etc. needs to be replaced with what we eat and more importantly, drink.

Did you know, water deprivation can cause for more harm than the lack of any other nutrient?

What does water do?

- ❖ It transports all nutrients to and from different parts of our body.
- ❖ It aids the process of chewing, absorbing, digesting, etc.
- ❖ It acts as a lubricant present in and around tissues; it defends our bodies against shock. The brain, eyes and spinal cord are among the body's sensitive organs combined by a protective water layer.
- ❖ It regulates body temperature.
- ❖ It helps to purify the system by stimulating the elimination of waste substances and toxins.

Interesting Facts of Water

- ❖ Preliminary research has directed that 8-10 glasses of water a day can significantly ease joint and back pain in up to 80% of patients.
- ❖ A mere 2 % drop in body water can trigger short-term memory loss, trouble with basic math and difficulty in reading.
- ❖ Lack of water is one of the leading causes of daytime fatigue.
- ❖ Even mild dehydration can slow down a person's metabolism by as much as 3 %.

How Much is Enough?

Since water in the form of moisture is available in all fresh vegetable & fruits, there is no ideal quantity of intake. However, it is definitely recommended that we drink at least 8-10 glasses of water every day.

Conclusion & Implementation

A good nutrition guide was designed to meet those fundamentals-what it really comes down to is that it's not what you eat but how your body digests the foods that you put into it. The combination of and quality of your food will greatly determine the nourishment your body receives. When you eat the right foods together, your overall health can improve dramatically. Side benefits include feeling better – even younger, losing weight, sleeping better and more energy throughout your day. not to mention a healthy and more fit body and immune system.

Who in the world does not want more energy and to look and feel younger?

Now that you have all the information you need on eating healthy, the most important action step you can do is to maintain this lifestyle choice as much as possible. Post intents when you need motivation from others. Keep a diary of your food choices on your blog or journal. Talk to other people when you are feeling tempted to indulge in unhealthy desserts.

Eating healthy, after all, is not about losing your ability to enjoy indulgences. it is a matter of gaining so many things that will affect you for the rest of your life: a longer life, the ability to enjoy natural foods, a wholesome sense of self-esteem and the joy of respecting your body for all that it does for you.

This **GOOD NUTRITION GUIDE** was aligned to get you thinking in the right direction. By no means does it even scratch the surface of the different elements related to a complete and healthy nutrition plan. But for most people a healthy nutrition plan is not all that far away.

When you embark upon your journey you will notice small changes to your health and how your body feels as you begin to eat better, digest better and free up your system to feed your body's cells with the nutrients they need for top performance. You are now capable of making nutritious choices for a healthier life style.

In order to achieve this, good nutritional care needs to be everybody's business.

References

Books

1. Food, nutritional and cookery- S R Sharma & Vijay Kaushik- ISBN: 81-261-1265-4.
2. Food & nutrition education- Dr. Punam Chopra ISBN: 81-7648-874-7
3. Barnett Anne, food and nutrition for you, Hutchinson and co publishers ltd, 1985.
4. Tolumen, Malti: Vitamins and minerals in health and nutrition, New York, Ellis Norwood, 1990.
5. Wilson, Eoa D et al, principles of nutrition, 4th edition, john Wiley and sons, New York /chichster/Brisbane/Toronto 1979.
6. Meyer Lillian Hoagland, 1987," food chemistry" CBS publisher & distributor New Delhi.
7. Antia F.B, 1966, clinical dietetics & nutritional, oxford university press Mumbai.
8. Crusius Vera claussen, 1984, quantity food management, surjeet publications Delhi.

Journals and Manuals

1. Annual Report, 2012-2013, CFTRI Mysore.
2. Count what you eat, 1991, National Institute of Nutriotion, India council of Medical Research Hyderabad 500-007.
3. Directory of ongoing projects in Food Science & Technology in India, 2008 National Information Centre for Food Science and Technology, CFTRI. (Mysore)
4. Journal of Food Science and Technology, 2005 Association of Food Scientist and Technologies, CFTRI (Mysore).