Map My Gene

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18 April 2016

Name:	XXXXX
IC :	XXXX
Sex:	Female
Tel:	XXXX

Disease Susceptibility Genetic Testing Categories :

- ❖ Respiratory System
- ❖ Ear Nose Throat System
- ❖ Cardiovascular System
- ❖ Cerebrovascular System
- ❖ Digestive System
- ❖ Urinary System
- ❖ Hematological System
- ❖ Endocrine System
- ❖ Rheumatic System
- ❖ Male/Female Related Disease

DNA Profiling SNP Analysis Assessment

SNP No.	Result	SNP No.	Result	SNP No.	Result	SNP No.	Result	SNP No.	Result
HY_T00	CC	HY_T04	GT	HY_T07	AA	HY_T11	GA	HY_T15	CA
HY_T00	GG	HY_T04	CT	HY_T08	GT	HY_T11	GG	HY_T15	CC
HY_T00	CC	HY_T04	CT	HY_T08	CT	HY_T12	CT	HY_T15	AA
HY_T00	GA	HY_T04	CC	HY_T08	TT	HY_T12	TC	HY_T16	TC
HY_T00	GG	HY_T04	GG	HY_T08	GG	HY_T12	AA	HY_T16	GT
HY_T00	TT	HY_T04	CC	HY_T08	TT	HY_T12	GA	HY_T16	AA
HY_T00	CC	HY_T04	GG	HY_T08	CT	HY_T12	CT	HY_T16	AA
HY_T00	CC	HY_T04	GG	HY_T08	GG	HY_T12	CT	HY_T16	CT
HY_T00	TC	HY_T04	CT	HY_T08	GG	HY_T12	GG	HY_T16	CA
HY_T01	AA	HY_T04	CC	HY_T08	GG	HY_T12	GT	HY_T16	CC
HY_T01	AA	HY_T05	GG	HY_T08	GA	HY_T12	CC	HY_T16	CT
HY_T01	CA	HY_T05	TC	HY_T09	GA	HY_T12	AA	HY_T16	TT
HY_T01	GG	HY_T05	AA	HY_T09	GG	HY_T13	GG	HY_T16	CC
HY_T01	TT	HY_T05	TT	HY_T09	CC	HY_T13	AA	HY_T17	CC
HY_T01	GG	HY_T05	GG	HY_T09	GG	HY_T13	TT	HY_T17	TT
HY_T01	AA	HY_T05	CC	HY_T09	GG	HY_T13	GG	HY_T17	AG
HY_T01	CC	HY_T05	CC	HY_T09	GG	HY_T13	GG	HY_T17	
HY_T01	GG	HY_T05	TT	HY_T09	AG	HY_T13	AA	HY_T17	
HY_T01	GG	HY_T05	AA	HY_T09	CT	HY_T13	TT	HY_T17	
HY_T02	CC	HY_T05	AA	HY_T09	AG	HY_T13	TT	HY_T17	
HY_T02	CC	HY_T06	TT	HY_T09	CC	HY_T13	CT	HY_T17	
HY_T02	GA	HY_T06	GG	HY_T10	TT	HY_T13	AA	HY_T17	
HY_T02	CC	HY_T06	CC	HY_T10	CC	HY_T14	CT	HY_T17	
HY_T02	GG	HY_T06	AG	HY_T10	CC	HY_T14	AG	HY_T18	
HY_T02	TT	HY_T06	AG	HY_T10	CC	HY_T14	TT	HY_T18	
HY_T02	GA	HY_T06	GG	HY_T10	CT	HY_T14	CC	HY_T18	
HY_T02	CC	HY_T06	GA	HY_T10	TT	HY_T14	CT	HY_T18	
HY_T02	CC	HY_T06	TT	HY_T10	AA	HY_T14	GA	HY_T18	
HY_T02	GG	HY_T06	CC	HY_T10	GA	HY_T14	TT	HY_T18	
HY_T03	AA	HY_T06	TC	HY_T10	AA	HY_T14	GA	HY_T18	
HY_T03	AA	HY_T07	GG	HY_T10	CC	HY_T14	GG	HY_T18	
HY_T03	GG	HY_T07	TT	HY_T11	CC	HY_T14	GC	HY_T18	
HY_T03	GG	HY_T07	CC	HY_T11	TT	HY_T15	CC	HY_T18	
HY_T03	GC	HY_T07	TT	HY_T11	TT	HY_T15	CC	HY_T19	
HY_T03	CC	HY_T07	CA	HY_T11	GG	HY_T15	GG	HY_T19	
HY_T03	CT	HY_T07	CG	HY_T11	TT	HY_T15	GT	HY_T19	
HY_T03	AA	HY_T07	GA	HY_T11	CG	HY_T15	TA	HY_T19	
HY_T03	CC	HY_T07	GC	HY_T11	AA	HY_T15	GA	HY_T19	
HY_T03	AA	HY_T07	TT	HY_T11	GG	HY_T15	AA	HY_T19	

List of High and Medium-High Risk Diseases

Disease	Risk Index	Risk Level	Degree of risk
Breast Cancer	1.5	8	High
Colon Rectal Cancer	2.43	9	High
Type-2 Diabetes	1.33	7	Medium High

Disease Risk Assessment

Heart Cerebrovascular Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
1	Thromboembolism	0	0	Low
2	Intracranial Aneurysm	0	0	Low
3	Peripheral Arterial Disease	0	0	Low
4	Atherosclerosis	0	0	Low
5	Atrial Fibrillation	0.46	1	Low
6	Hypertrophic Cardiomyopathy	0.62	3	Low
7	Rheumatic Heart Disease	0.92	4	Medium
8	Abdominal Aortic Aneurysm	0.5	2	Low
9	High Blood Pressure	0.75	5	Medium
10	Cardiovascular Disease	0.34	1	Low
11	Dilated Cardiomyopathy	0.75	4	Medium
12	Myocardial infarction	0	0	Low
13	Heart Failure	0	0	Low
14	Vascular Dementia	0.63	3	Low
15	Stroke	0	0	Low
Respiratory Disorders				
No.	Disease	Risk Index	Risk Level	Degree of risk
16	Tuberculosis (TB)	0	0	Low
17	Pulmonary Fibrosis	0	0	Low
18	Chronic sinusitis	0	0	Low
19	Chronic Obstructive Pulmonary	1.33	6	Medium
20	Infections Of The Upper Respiratory Tract	0	0	Low
21	Asthma	0	0	Low
Metabolic Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
22	Type-2 Diabetes	1.33	7	Medium High
23	Type-1 Diabetes	0.26	1	Low
24	Gallstones	0.42	1	Low
25	Hypercholesterolemia	1	4	Medium
26	Hypertriglyceridemia	0	0	Low
27	Osteoporosis	0.48	2	Low
28	Gout	2.55	6	Medium
Digestive Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
29	Non-alcoholic Fatty Liver	0	0	Low

30	Liver Fibrosis	0.77	2	Low
31	Cirrhosis	0.92	3	Low
32	Alcoholic Hepatitis	1.5	4	Medium
33	Crohn's Disease	0	0	Low
34	UC (Ulcerative Colitis)	0.6	3	Low
35	Chronic Pancreatitis	2	5	Medium
36	Chronic Hepatitis B	0.42	1	Low
37	Chylous Diarrhea	0	0	Low
38	Chronic gastritis	0	1	Low
39	Gastric Ulcer	0	1	Low
40	Primary Biliary Cirrhosis	0	0	Low
Tumours				
No.	Disease	Risk Index	Risk Level	Degree of risk
41	Esophageal Cancer	0.67	2	Low
42	Liver Cancer	0	0	Low
43	Leukemia	0	0	Low
44	Gallbladder Cancer	1.12	3	Low
45	Colon Rectal Cancer	2.43	9	High
46	Pancreatic Cancer	0	0	Low
47	Endometrial Cancer	0.6	2	Low
48	Nasopharyngeal Cancer	0	0	Low
49	Cancer Of Biliary Duct	0	0	Low
50	Myeloma Multiplex	0.7	1	Low
51	Malignant Melanoma	0.87	3	Low
52	Non-Hodgkin's Lymphoma	0	0	Low
53	Lung Cancer	1.06	4	Medium
54	Carcinoma Of Uterine Cervix	0.35	0	Low
55	Laryngocarcinoma	1.1	4	Medium
56	Hodgkin's Lymphoma	0	0	Low
57	Thyroid Cancer	0	0	Low
58	Oral Cancer	0	0	Low
59	Lymphoma	0.42	1	Low
60	Ovarian Cancer	0	0	Low
61	Cerebral Cancer	0.5	2	Low
62	Bladder Cancer	0.73	3	Low
63	Skin Cancer	1.54	5	Medium
64	Breast Cancer	1.5	8	High
65	Neuroblastoma	1	4	Medium
66	Renal Carcinoma	0.5	2	Low
67	Gastric Cancer	1.27	5	Medium
Endocrine And Mental Disorders				
No.	Disease	Risk Index	Risk Level	Degree of risk

68	Hypothyroidism	0.12	1	Low
69	Hyperparathyroidism	0	0	Low
70	Hypothyroidism (Goiter)	0.5	3	Low
71	Schizophrenia	0.83	2	Low
72	AD (Alzheimer's Disease)	0	0	Low
73	Parkinson	0	0	Low
74	OCD (Obsessive Compulsive	0	0	Low
75	Social Phobia	0.68	3	Low
76	Diabetic Neuropathy	0	0	Low
77	Graves' Disease	0.85	2	Low
Eye, Ear, Nose & Mouth Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
78	Otitis	0.75	3	Low
79	Age-related Macular Degeneration	0.75	0	Low
80	Glaucoma	0	0	Low
81	Diabetic Retinopathy	1.12	1	Low
82	Hearing Loss	0	0	Low
83	Periodontitis	0	0	Low
Urinary System Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
84	IgA Nephropathy	0	0	Low
85	Chronic Kidney Disease	0.83	2	Low
86	Kidney Stones	0.82	4	Medium
87	Diabetic Nephropathy	0.31	1	Low
Auto-immune Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
88	Multiple Sclerosis	0	0	Low
89	Psoriasis	0	0	Low
90	Sjögren's Syndrome	0.8	3	Low
91	Rheumatoid Arthritis	0.9	3	Low
92	Ankylosing Spondylitis	1.5	3	Low
93	Systemic Lupus Erythematosis	0.7	2	Low
94	Aplastic Anemia	0	0	Low
Female-related Diseases				
No.	Disease	Risk Index	Risk Level	Degree of risk
95	Gestational Diabetes Mellitus	0	0	Low
96	Pre-eclampsia	0.65	3	Low
97	Endometriosis	0.42	0	Low
Others				
No.	Disease	Risk Index	Risk Level	Degree of risk
98	Resistance to HIV & AIDS	0.8	4	Medium
99	Osteoarthritis	0	0	Low
100	Sciatica	0	0	Low

Breast Cancer

Breast cancer is a cancer of the glandular breast tissue.
Worldwide, breast cancer is the fifth most common cause of cancer death (after lung cancer, stomach cancer, liver cancer, and colon cancer). In 2005, breast cancer caused 502,000 deaths (7% of cancer deaths; almost 1% of all deaths) worldwide.[1] Among women worldwide, breast cancer is the most common cancer.

【Clinical Symptoms】

1. Painless lumps: This is the main symptoms which leads the patient to seek medical attention.
2. Discharge from the nipples: Can be clear, white, yellowish, brownish, blood stained…etc. The discharge can be watery, bloody, serous or septic at varying quantity, at different interval.
3. Malformation of nipples and areola: Flat, retracting, sunken nipples below areola, with invisible nipples. Occasionally, when elevating the breast, both nipples are not at the same level. Erosive nipple is also typical sign of Piaget's syndrome.
4. Inflammative breast cancer can cause localized inflammed response to the skin. The skin color may change from light to dark red, with restricted area upon onset but soon spread to other area of mammary skin. This may be accompanied by skin edema, thickening and coarse skin texture with surface hyperthermia.

Early breast cancer can in some cases present as breast pain (mastodynia) or a painful lump. Since the advent of breast mammography, breast cancer is most frequently discovered as an asymptomatic nodule on a mammogram, before any symptoms are present. A lump under the arm or above the collarbone that does not go away may be present. When breast cancer associates with skin inflammation, this is known as inflammatory breast cancer. In inflammatory breast cancer, the breast tumor itself is causing an inflammatory reaction of the skin, and this can cause pain, swelling, warmth, and redness throughout the breast.

Changes in the appearance or shape of the breast can raise suspicions of breast cancer.
Another reported symptom complex of breast cancer is Paget's disease of the breast. This syndrome presents as eczematoid skin changes at the nipple, and is a late manifestation of an underlying breast cancer.
Most breast symptoms do not turn out to represent underlying breast cancer. Benign breast diseases such as fibrocystic mastopathy, mastitis, functional mastodynia, and fibroadenoma of the breast are more common causes of breast symptoms. The appearance of a new breast symptom should be taken seriously by both patients and

their doctors, because of the possibility of an underlying breast cancer at almost any age.

Occasionally, breast cancer presents as metastatic disease, that is, cancer that has spread beyond the original organ. Metastatic breast cancer will cause symptoms that depend on the location of metastasis. More common sites of metastasis include bone, liver, lung, and brain. Unexplained weight loss can occasionally herald an occult breast cancer, as can symptoms of fevers or chills. Bone or joint pains can sometimes be manifestations of metastatic breast cancer, as can jaundice or neurological symptoms. Pleural effusions are not uncommon with metastatic breast cancer. Obviously, these symptoms are "non-specific," meaning they can also be manifestations of many other illnesses.

Diagnosis

The diagnosis of breast cancer is established by the pathological (microscopic) examination of surgically removed breast tissue. A number of procedures can obtain tissue or cells prior to definitive treatment for histological or cytological examination. Such procedures include fine-needle aspiration, nipple aspirates, ductal lavage, core needle biopsy, and local surgical excisional biopsy. These diagnostic steps, when coupled with radiographic imaging, are usually accurate in diagnosing a breast lesion as cancer. Occasionally, pre-surgical procedures such as fine needle aspirate may not yield enough tissue to make a diagnosis, or may miss the cancer entirely. Imaging tests are sometimes used to detect metastasis and include chest x-ray, bone scan, CT, MRI, and PET scanning. While imaging studies are useful in determining the presence of metastatic disease, they are not in and of themselves diagnostic of cancer. Only microscopic evaluation of a biopsy specimen can yield a cancer diagnosis. Ca 15.3 (carbohydrate antigen 15.3, epithelial mucin) is a tumor marker determined in blood which can be used to follow disease activity over time after definitive treatment. Blood tumor marker testing is not routinely performed for the screening of breast cancer, and has poor performance characteristics for this purpose.

Treatment

The mainstay of breast cancer treatment is surgery when the tumor is localized, with possible adjuvant hormonal therapy (with tamoxifen or an aromatase inhibitor), chemotherapy, and/or radiotherapy. At present, the treatment recommendations after surgery (adjuvant therapy) follow a pattern. This pattern is subject to change as every two years a worldwide conference takes place in St. Gallen, Switzerland to discuss the actual results of worldwide multi-center studies. Depending on clinical criteria (age, type of cancer, size, metastasis) patients are roughly divided to high risk and low risk cases which follow different rules for therapy. Treatment possibilities include Radiation Therapy, Chemotherapy, Hormone Therapy, and Immune Therapy.
An online resource for helping to quantify the relative risks and benefits of chemotherapy and hormonal therapy is Adjuvant.

In planning treatment, doctors can also use PCR tests like Oncotype DX or microarray tests like MammaPrint that predict breast cancer recurrence risk based on gene expression. In February 2007, the MammaPrint test became the first breast cancer predictor to win formal approval from the Food and Drug Administration. This is a new gene test to help predict whether women with early stage breast cancer will relapse in five or 10 years, this could help influence how aggressively they fight the initial tumor.

【Prevention】

1. Conduct self check regularly and seek medical treatment immediately upon detection of abnormalities.
2. Never use contraceptive pills or hormonal creams as they are donors of estrogen.
3. When a malignant tumor occurs in one side of the breast, chances of malignancy on the other side of breast become much higher. Hence it is important to check the other breast regularly for early detection and treatment.
4. Maintain optimistic emotions, do not get angry easily, avoid persistent depression…etc.
5. Immediately treatment of fibroblastic mammary diseases without delay is necessary.
6. Giving birth before the age of 30 helps protects against breast cancer. Breast feeding women should try their best to excrete as much milk from the breast as possible, this not only will increase the secretion of milk, and at the same time can reduce the accumulation of milk in the breast.
7. Reduce or quit alcohol intake.
8. Reduce the frequency of dying hair or working with hair dye as it is a trigger of breast cancer.
9. Women with family history of breast cancer should conduct self check and full medical examination regularly. A regular hormonal test is important as it shows the hormonal balance between estrogen and progesterone.
10. If a woman is estrogen dominant, using progesterone cream might be of help.

【Nutritional Recommendations】

1. Avoid milk and dairy products.
2. Appropriate increase in the intake of anticarcinogenic foods (sweet potato, 2-3 cups of green tea…etc).
3. Quit or reduce eating carcinogenic foods, e.g. fried, smoked. Pickled, modified foods…etc.
4. Eat a high – Diets high in **fiber** are associated with a lowered risk of breast cancer. fiber diet based on fresh fruits and vegetables, plus grains, legumes, raw nuts (except peanuts) and seeds, and soured products such as low – fat yogurt. Very important are the cruciferous vegetables, such as broccoli, Brussels sprouts, cabbage, and cauliflower, and yellow / orange vegetables, such as carrots, pumpkin, squash, sweet potatoes, and yams. Eat vegetables

raw or lightly steamed. For grains, use unpolished brown rice, millet, oats, and wheat. Eat whole grains only. If at all possible, consume only organically grown foods. Pesticides and other chemicals have been linked to breast cancer (they may mimic the effect of estrogen on the body).

5. Soy food consumption in your diet must be in moderation, not to over consume it.
6. Include in your diet fresh apples, pineapples, cherries, grapes, plums, and all types of berries.
7. Eat onions and garlic, or take garlic in supplement form.
8. Make sure your diet provides adequate amounts of essential fatty acids. Omega – 3, and omega – 9 fatty acids lower cancer risk. Eating salmon weekly and tuna three times a week will provide a good amount of fatty acids. Processed fish oil supplements are also a good idea, but avoid too much cod liver oil, as its levels of vitamin A and D are too high. Omega 3 fish oil has been reported to possibly slow tumor growth. Flaxseed oil is also good and can be sprinkled onto food.
9. Make a daily juice using a combination of **cruciferous vegetables** such as broccoli, cabbage, cauliflower, brussel sprouts. These are high in Indole-3 Carbinol and phytochemicals that help to combat breast cancer.
10. Limit your intake of fatty, charred, or grilled foods, which have been linked with a higher risk of cancer.
11. Drink spring or filtered water only, never tap water. Also drink fresh homemade vegetable and fruit juices. Drink fruit juice in the morning and vegetable juices in the afternoon.
12. If you consume meat, poultry, and dairy products, select organic, hormone – free products. Otherwise, these foods often contain residues of estrogenic hormones that are given to animals in order to promote growth. Well – done red meat has been linked to a higher risk for breast cancer in some studies. Do not consume any alcohol, caffeine, junk foods, processed refined foods, saturated fats, salt, sugar, or white flour.
13. Add longan and wild yam in your diet. Limit the intake of soy products, royal jelly, honey and milk.
14. Essential nutrients are **Indole-3 Carbinol, Omega 3 fish oil, Fenugreek and antioxidants.**

Colon Rectal Cancer

Colon rectal cancer is a common type of malignancy (cancer) in which there is uncontrolled growth of the cells that line the inside of the colon or rectum. Colon cancer is also called colorectal cancer.

- The colon, also known as the large intestine, is the last part of the digestive tract.
- The rectum is the very end of the large intestine that opens at the anus.

The body is made up of different types of cells that normally divide and multiply in an orderly way. These new cells replace older cells. This process of cell birth and renewal occurs constantly in the body.

Cancer or malignant growths occur when:

- Some cells in the body begin to multiply in an uncontrolled manner.
- The body's natural defenses, such as certain parts of the immune system, cannot stop uncontrolled cell division.
- These abnormal cells become greater and greater in number.
- In some types of cancer, including colon cancer, the uncontrolled cell growth forms a mass, also called a **tumor**.

Some tumors are benign, which means that they are not cancerous. Cancerous or malignant tumors grow out of control and can invade, replace, and destroy normal cells near the tumor. In some cases, cancer cells spread to other areas of the body.
There are two kinds of growths that occur in the colon:

- Noncancerous growths, such as **polyps**.
- Malignant or cancerous growths. Colon cancer usually begins with the growth of benign growths such as polyps.

Most types of colorectal cancer are **adenocarcinomas**. This means that the cancer cells are formed from abnormal gland cells that line the inner surface of an organ. The prefix "adeno" means "gland." In colorectal cancer, the abnormal growth begins to form in the inner lining of the large bowel.
There are several causes for colorectal cancer as well as factors that place certain individuals at increased risk for the disease. There are known genetic and environmental factors.
People at risk for colorectal cancer:

- The biggest risk factor is age. Colon cancer is rare in those under 40 years. The rate of colorectal cancer detection begins to increase after age 40. Most colorectal cancer is diagnosed in those over 60 years.
- Have a mother, father, sister, or brother who developed colorectal cancer or polyps. When more than one family member has had colorectal cancer, the risk to other members may be three-to-four times higher of developing the disease. This higher risk may be due to an inherited gene.
- Have history of benign growths, such as polyps, that have been surgically removed.

- Have a prior history of colon or rectal cancer.
- Have disease or condition linked with increased risk.
- Have a diet high in fat and low in fiber.

Having certain diseases or conditions may place people at increased risk for colorectal cancer. These include

- Chronic **ulcerative colitis**, an inflammatory condition of the colon. People in this risk category have long-term disease, most for ten years or more.
- **Crohn's disease**, which is an inflammatory disease of the gastrointestinal tract. This disease may increase colorectal cancer risk, although not as much ulcerative colitis. A lack of vitamin K will aggravate the condition.
- A history of breast, uterine, or ovarian cancer in women.
- Inherited a specific colorectal cancer syndrome. Those with an inherited syndrome may develop colorectal cancer at a much younger age, in their 30s or even younger.

Symptoms

- Symptoms usually include changes in bowel habits (constipation, diarrhea, bloating, pain with bowel movements), an abdominal mass, weight loss, decreased appetite and blood in the stool.
- Any tumor that causes complete obstruction of the large bowel can cause bowel perforation and spread of the tumor cells within the abdominal cavity.
- Colorectal carcinoma is rarely suspected in pediatric patients.
- If the tumor is suspected the stool should be checked for blood, a blood test to measure the levels of carcinoembryonic antigen (CEA) should be done and various medical imaging studies. A direct examination of the large bowel by a fiber optic instrument, known as a colonoscope, should be done. Other radiographic tests include a barium enema, which highlights features of the colon, a CT scan or MRI of the abdomen. Patients are also examined for metastasis using CT scans of the chest and bone scans.

Treatment

- Complete surgical removal of the involved part of large intestine is the best option, but in many instances this is impossible because it may be in advanced stages.
- Chemotherapy and radiation therapy are other treatment choices and they are used, depending on location of the tumor and how far it has spread (stage). Chemotherapy drugs that are commonly used include 5-fluorouracil, leucovorin, irinotecan and oxaliplatin.

There are several techniques, including screening tests and lifestyle changes, associated with the prevention of colorectal cancer. The best way to help prevent colorectal cancer is to:

- Schedule regular colorectal cancer screening tests with your doctor. In this way, small **polyps** may be discovered before they become cancerous.
- Avoid diets high in fat, alcohol, protein, calories, and red and white meat. **Colon** cancer is more common in the U.S. and other Western countries where people eat foods high in saturated fat and low in fiber.
- The use of nonsteroidal anti-inflammatory medications (such as aspirin) may decrease the risk of colon cancer.
- Eat foods rich in fiber. Dietary fiber is thought to protect against colon cancer because fiber-rich food is digested faster. Therefore undigested food remains in the colon for a shorter period of time.

What Is Fiber?

Fiber is a virtually indigestible substance that is found mainly in the outer layers of plants. Fiber is a special type of carbohydrate that passes through the human digestive system virtually unchanged, without being broken down into nutrients. Carbohydrates constitute the main source of energy for all body functions.

Almost everyone hears about the need for enough fiber in the diet. But few people understand the importance of dietary fiber - or where to get it.

Fiber is important because it has an influence on the digestion process from start to finish:

- Because it demands that food be more thoroughly chewed, fiber slows down the eating process and helps contribute to a feeling of being full, which in turn can help prevent obesity from overeating.
- Fiber makes food more satisfying, probably because the contents of the stomach are bulkier and stay there longer.
- Fiber slows digestion and absorption so that glucose (sugar) in food enters the bloodstream more slowly, which keeps blood sugar on a more even level.
- Fiber is broken down in the **colon** (the main part of the large intestine) by bacteria (a process called fermentation), and the simple organic acids produced by this breakdown helps to nourish the lining of the colon.
- These acids also provide fuel for the rest of the body, especially the liver, and may have an important role in metabolism.

Substantial amounts of fiber can be found in foods such as:

- All-natural cereals, Whole-grain breads, Beans, Fruits, Vegetables, Nuts

Facts about fiber

- Fiber keeps stool soft and keeps the contents of the intestines moving.
- Americans consume only about 10% of the fiber that they did 100 years ago.
- A good diet should contain approximately 25 to 30 grams of fiber a day. The average American eats less than half of that.
- The change in the way wheat was processed into flour at the turn of the century-from a crushing to a finer rolling process - accounts substantially for the depletion in dietary fiber.
- Bran has the highest fiber content - about 25% to 45%.

For people who are over 20 years old, it is recommended to go to visit a doctor for further examination immediately if the following symptoms displayed:
(1) Persistent abdominal distention or pain recently;
(2) Bowel habits or stool feature altered, for example, constipation or diarrhea, or constipation alternating with diarrhea;
(3) Blood in the stool;
(4) Unexplained weight loss, anemia, and fatigue;
(5) Unexplained abdominal mass.

Weight control
Overweight means increased pressure on joints. Additionally, inflammatory cytokines secretion increases, leading to the risk of rheumatoid arthritis.

Keep a balance between work and rest
Take time to rest and relax to reduce stress.

Water - Research has shown that our sense of thirst is an "After the Fact" response. Our thirst craving isn't activated until we have lost about 28% of our blood plasma. This means we have lost about two quarts of our normal seven quarts of blood liquid. Time to stop and rehydrate yourself or risk having the "solids in your blood" come out of solution and plug up your circulatory system. Lack of water or dehydration is one of the main causes of diseases. So drink enough every day.

Probiotics – Good bacteria are required to keep the bad bacteria at bay. Miso soup and fermented food are good for colon’s health.

Prevent constipation - Colon irrigation or enema does help in cleaning the colon and getting rid of accumulated feces.

Oxygenated-Filtered Water is recommended. Cancer cells are anaerobic, which means that they derive their energy without needing oxygen. Cancer cells cannot survive in the presence of high levels of oxygen.

Type II Diabetes

Type II diabetes mellitus

Diabetes mellitus is a condition with elevated blood sugar level (hyperglycemia) due to impaired utilization of insulin, decreased production of insulin, or both. Diabetes is the seventh leading cause of death in the United States. An estimated 18% of all Americans over 65 years of age have diabetes. Over ten million Americans have been diagnosed with diabetes, and at least half as many more are thought to have diabetes that is undiagnosed. Many more have a condition that precedes diabetes, referred to as prediabetes, characterized by elevated blood sugar levels but to a lesser degree than is present in those with diabetes. Diabetes is the leading cause of new cases of blindness in adults aged 20-74 years, the leading cause of chronic kidney failure, and the leading cause of lower extremity amputations not related to injury. Individuals with diabetes are two to four times as likely to have a heart attack or stroke as are those without diabetes.

Tests or procedures for type II diabetes mellitus

Tests for diabetes mellitus

- Fasting blood sugar (blood sugar test after at least 8 hours without calories), normal level less than 126 mg/dl
- Two hour postprandial blood sugar (blood sugar test 2 hours after a meal), normal level less than 140mg/dl

Who to test and how often

Healthy adults over 45 years should have fasting blood glucose level checked every 3 years.

Adults at a higher than normal risk of developing diabetes mellitus should be checked more frequently than every three years; these individuals include:

- People who are overweight
- Blood relatives with type II diabetes (Genetic Predisposition)
- Certain ethnic groups such as certain Native Americans, African-Americans, Hispanics, and Asians
- Individuals with prediabetes
- Low HDL cholesterol (35 mg/dl. or less) or elevated triglyceride level (over 250 mg/dl)

Benefits of early detection

- Diabetes mellitus can cause atherosclerosis that can lead to heart attack, stroke, and compromise of arterial circulation to the legs and feet. Diabetes mellitus also can damage the nerves, eyes, and kidneys.
- Diabetes mellitus commonly causes organ damage without symptoms until extensive damage is present.

- There is good evidence that controlling hyperglycemia in diabetes with medications, diet, weight control, and regular exercise can slow the development of atherosclerosis and heart, eye, nerve, and kidney damage.
- There is good evidence that curtailing total calorie intake (especially intake of processed starches, sugar and sweets), regular exercise, and losing excess weight can help prevent the development of type II diabetes mellitus, especially in adults at higher than normal risk of developing diabetes.

Dietary guidance
Temperance dietary
Eat three meals a day at least; recommended small servings and more mealtimes; do not overeat.

Avoid high-sugar foods
Stay away from high-sugar foods, including sugar, rock sugar, brown sugar, glucose, maltose, honey, candied fruit, toffee, fruit candy, canned fruit, sugary drinks, high sugar content of fruit, cream cake, chocolate, ice-cream and highly starchy food.

Avoid food rich in saturated fatty acids
This includes fats (especially Pork), lard, animal skin, beef, and canned meat.

Avoid high cholesterol foods
High-cholesterol foods: egg yolk, squid, cuttlefish, animal offal, shrimp cake and so on.

To eat more high-fiber food
Fiber-rich foods such as buckwheat noodles, cornmeal, oats, noodles, sorghum, rice, mung bean, spinach, celery, chives, bean sprouts, seaweed and so on.

Lifestyle guide - Weight control
Control body mass index at about 22. Men's waist circumference should be less than 90 cm, while waist circumference of female should be less than 80 cm.

Avoid active and passive smoking.

Restrict alcohol.
Refrain from drinking alcohol.

Exercise guide
Do more aerobic exercise, including walking, doing housework, playing Taijiquan, traditional Chinese sword-play, gymnastics, ballroom dancing, riding bicycles on flat, and billiards. **Oxygen** helps in metabolizing sugar into energy.

Medical Examination Guide

Regularly measurement of body weight

Regularly testing of blood sugar, urine sugar

If blood sugar and/or urine sugar is abnormal, please perform oral glucose tolerance test after a recommended doctor's advice.

Nutritional Recommendation

1. Do not take fish oil capsules or supplements containing large amount of para-aminobenzoic acid, and avoid salt and white flour products.
2. Do not take supplements containing the amino acid cysteine.
3. Do not take extremely large doses of vitamins B1, B3 and C.
4. **Propolis, Baby Bittergourd and Fenugreek** help in lowering the blood sugar.
5. Take more **chromium**-rich foods, such as wheat germ, algae food, asparagus, mushrooms, peas, spinach, carrots, and so on.
6. Take more **selenium**-rich foods such as mushrooms, algae food, cabbage, tomato, onion, and so on.
7. Take more foods rich in **zinc**, such as the edible category, algae food, walnut, apricot, chestnut, hazelnut, and so on
8. Take more **copper**-rich foods, such as shrimp, algae food, oranges, broccoli, garlic, mushrooms, lentils, walnuts, and so on.

Consuming algae as regular health supplement helps improve the overall development and growth of the body, as it contains almost all nutrients, minerals, vitamins, proteins, amino acids and nucleic acids, chlorophyll, fiber, etc. There are many types of algae available like, cryptomonadales, spirulina or chlorella. It is mostly available as powders, capsules, tablets, etc. While algae health benefits are enormous, it's best to consult a medical practitioner on the type and the amount one needs to consume to achieve maximum health benefits.

Oxygenated-Filtered/pH-Balanced Water is recommended. Cancer cells, viruses, bacteria, moulds or fungus are anaerobic creatures, which mean that they derive their energy without needing oxygen. These harmful elements mentioned cannot survive in the presence of high levels of oxygen. Sufficient Oxygen helps metabolize sugar into energy. Good quality water is your best bet yet.