



# Diet in Cancer

Cancer is a complex disease process influenced by many factors such as family history, genetic predisposition, poor immune function, exposure to toxins, nutritional imbalances and deficiencies, chronic stress, to name but a few.

Because the causes of cancer can be diverse, there is at present no clearly defined curative pathway.

Nevertheless, the body's ability to heal itself can be improved by taking a holistic approach which includes nutrition.

There is a significant body of evidence which indicates that up to 30% of all cancer, cardiovascular disease and diabetes can be prevented using a dietary approach. Nutrition therefore needs to form the foundation of our health and wellbeing.

A typical western style diet contains too much refined carbohydrate, animal protein, sugar and saturated fat and in general we eat too many processed foods.

## **Foods to eat liberally:**

Whole grains, brown rice, barley, oats, millet, rye, wheat, corn, quinoa. Vegetables, (preferably organic), fruits, legumes, peas, lentils, beans, seeds, particularly sesame, sunflower, pumpkin, nuts, water (filtered).

## **Foods to eat in moderate amounts:**

Eggs, fish, preferably deep sea oily fish such as salmon, tuna, mackerel, herring; sardines, pilchards, white meat and poultry, (preferably organic), soya protein such as tofu.

## **Foods and substances to avoid or to take in minimum amounts:**

Tobacco, alcohol, tea, coffee, caffeine drinks, chemical preservatives and processed foods, sugar, saturated fat, hydrogenated margarine, red meats, smoked and cured meats.

## **COMMON QUESTIONS AND ANSWERS**

### **Why organic fruits and vegetables whenever possible?**

Organic vegetables have higher contents of vitamins and minerals than non-organic, they also have significantly higher content of a class of substance known as isoflavins. These are cancerprotective. They are produced by the plant in order to resist attack by pests, or fungi. One class of these compounds, known as salvestrols, are different by orders of magnitude between organic vegetables and conventionally produced vegetables. Most conventionally produced vegetables on which pesticides and fungicides are used, have very low levels of salvestrols, because the plant does not need to produce these substances in order to resist attack by fungi and pests. An organically grown plant has to produce these substances in order to protect itself.

### **What meat/poultry?**

Organically grown chicken and turkey is preferable as it has a lower fat content and lower levels of growth-promoting hormone and additives, which are given to the bird to accelerate growth. Eating turkey is of some importance because it is the only meat containing tryptophan, important for T cell activity, which is fundamental to the normal functioning of cell mediated immunity. Cell-mediated immunity is our principle defence against cancer through the mechanism of immune surveillance. Small amounts of red meat are also permissible occasionally. Try to choose organic or farm assured meat which has been farmed to a good standard.

### **Why oily fish?**

Oily fish such as salmon, trout, tuna, herring, mackerel, sardines, pilchard contain high levels of Omega 3 fatty acids, particularly eicosopentaenoic acid . There are several studies in the peer reviewed literature showing disease modifying effects of high levels of Omega 3 fatty acids, particularly eicosapentaenoic acid. Non oily fish such as cod, haddock are an excellent source of protein but contain much lower Omega 3 levels.

### **Why reduce sugar?**

Unlike normal tissue, tumour tissue is much more glycolitic, i.e. metabolises glucose anaerobically (without oxygen) in order to produce energy.

Reducing sugar intake will significantly affect cell metabolism and change the internal environment of the body so that it becomes less conducive to tumour growth, effectively helping to “starve” the tumour.

The sugars to avoid are particularly the refined sugars in cakes, biscuits, sweets, processed foods and sweet drinks.

The fructose sugars found in fruit and vegetables are less harmful. Aim for an intake of 6-7 portions of whole fruits and vegetables daily of which 3 should normally be fruit.

The kind of fibre in whole fruits and vegetables is very important for the digestive system, helping to “soak up” toxins. Don’t rely on juices for your basic fruit and vegetable intake as these drinks lack necessary fibre and are comparatively high in sugar content.

If you are using juices as part of your regime to naturally boost vitamin and mineral intake concentrate on the vegetable based drinks which are less sweet.

### **What about acid/alkali balance?**

This is very important. Pathogenic changes of all sorts including cancer will take place much more easily in an internal environment which has become more acidic. Sugars, animal protein, dairy products and grains are all in general acid forming foods.

Fruits, vegetables, beans, pulses, fresh herbs, ginger, turmeric are all examples of alkaline forming foods.

The aim should be to create a “neutral” or more alkaline meal. In reality therefore a meal of fish (acid forming) should be balanced by lots of vegetables (alkaline forming), no more than 25% of the plate should be protein whilst 75% should be vegetables.

It is advisable therefore to have no more than one meal per day which is based on animal protein.

Other meals during the day should be based on vegetables, fruits, beans, pulses, lentils, nuts, seeds, tofu and nutritious grains such as quinoa.

Measuring the urinary pH is a helpful indicator of correct balance. A normal reading should be between 6 – 7, readings below 6 are an indicator that the body is too acidic and that the diet needs to be adjusted.

In some cases it may be necessary to implement further therapy to affect change.

Your medical practitioner will advise you further about monitoring acid/alkaline balance if this is required in your case.

## **Pattern of meals during the day**

“Breakfast like a King  
Lunch like a Prince  
Dine like a Pauper”

Following an overnight “fast” the body needs a good breakfast to boost energy levels for the day.

Breakfast and lunch should primarily contain complex carbohydrates and vegetable based proteins from whole grains, nuts, seeds, lentils, fruits and vegetables.

An ideal supper dish by comparison would consist of simple chicken, fish or vegetable protein such as tofu, with lightly steamed vegetables.

This is because overnight the body uses dietary protein for cellular repair. It does not require large quantities of carbohydrate for energy since it is at rest. Excess carbohydrate taken with the evening meal will be converted and stored as fat.

Fat cells act like “bin bags” for body toxins. A general principle of any cleansing diet is to get rid of stored toxins by reducing the amount of body fat.

Adjusting the diet in this way will encourage detoxification, boost energy levels and aid cell repair.

## **Specific diets often used by cancer patients**

Please note that none of these diets alone have been proven to be completely curative.

However, research indicates that they may be helpful in cancer prevention.

### **The Gerson Regime**

This is the most extreme of all the cancer diets.

The programme is designed to aid in the detoxification of waste and toxic products which impede normal metabolism and the natural healing process and to infuse the body with highly therapeutic dietary nutrients available in a bioavailable form.

#### **The main components of the Gerson Regime include:**

1. More than a dozen glasses a day of freshly pressed vegetables and fruit juices, much of which is carrot juice, which has to be consumed fresh: This diet is very time consuming; for somebody who is stressed with advanced cancer it may be too arduous.
2. Reduced sodium, increased potassium in the diet, and in some cases including potassium supplementation (bananas are high in potassium).

3. Three meals daily (vegetable soup, salad, potatoes etc).

4. Coffee enemas every three to four hours: (If you would like further details on coffee enemas please ask for our information leaflet).

There is some evidence in the peer reviewed literature indicating benefits from this approach with less cachexia (wasting), and reduction in secondary tumours in patients with liver metastases.

In order to find books relating to the Gerson Programme, go to [amazon.co.uk](https://www.amazon.co.uk) and type in the author Max Gerson.

## **The Plant Programme**

Devised by Professor Jane Plant, two principle books relate to this: *The Plant Programme* and *Your Life in your Hands*.

This diet is essentially an oriental diet, avoiding all milk and dairy products, the soy content is not excessive, but in simple terms milk and dairy products are replaced by soya products.

This diet is relatively easy to follow, it contains a lot of varied vegetables, and reduced animal protein. This is a particularly important principle with all the cancer diets, you should have minimal quantities of red meat and should reduce your animal protein from white meat and fish to a maximum of 40 g daily, a good sized chicken thigh is equivalent to 40 g of protein.

A similar book to the Jane Plant book is one by Dr Thomas Rau: *The Swiss Secret to Optimal Health*.

We have collaborated with Professor Jane Plant and Dr Thomas Rau for a number of years.

The rationale for avoiding milk and dairy products is that they are high in oestrogenic factors. This is particularly important in oestrogen dependent cancers such as breast cancer and in some cases ovarian cancer. Also, milk and dairy products are high in insulin like growth factor number 1 and epidermal growth factor. These are important growth factors affecting cancer tumours. It is wise therefore to have a diet which is low in these. Several targeted cancer drugs such as Erbitux, and Tarceta down-regulate epidermal growth factor. A more recent epidermal growth factor antagonist, Lipatinib, has had particularly encouraging results in breast cancer and shows a reduction in the proportion of cancer stem cells in a breast cancer tumour. This is important, as chemotherapy is ineffective against cancer stem cells and cancer stem cells are the cell type which is most likely, on current scientific evidence, to cause tumour recurrence following chemotherapy.

As a result of these findings, and the results of Lipatinib in reducing cancer stem cell populations in a common solid tumour; breast cancer, it makes no sense to have increased epidermal growth factors from milk and dairy products in the diet at the same time-

Due to the fact that epidermal growth factor and epidermal growth factor receptors appear on current scientific evidence to be crucial in cancer stem cells, it seems sensible to do everything possible to reduce any epidermal growth factor in the diet.

Therefore eliminating all milk and dairy products in the diet is particularly important.

Many other foods contain calcium ~ nuts and seeds, beans, pulses and lentils, green leafy vegetables, tofu, sardines (canned). As long as the diet is adjusted, reducing the dairy intake will not result in calcium deficiency

## **Macrobiotic Diets**

The Macrobiotic Diet is a high fibre, low fat, low animal protein diet and seeks to achieve a balance between yin at one extreme and yang at the other in every aspect of one's life. Pertaining to food, sweet foods, alcohol and drugs are extremely yin, while meat, cheese, dairy and eggs are at the extreme end of the yang spectrum. At the centre are the continuum from which the Macrobiotic Diet is selected; grains, fruits and vegetables. The main functions of the Macrobiotic Diet are:

To eliminate toxins accumulated through eating excess sweet, greasy, animal and dairy foods and alcohol, and restore health by eating a balance, centred diet.

Eating foods appropriate for any particular geographic area and climate; in other words diets for those living in temperate climates wouldn't include tropical foods, and those in cold climates wouldn't eat a primarily raw diet.

The Macrobiotic diet is comprised of the following proportions of foods:

1. Wholegrains: Brown rice, barley, millet, oats, corn, wheat, buckwheat – 50-60%
2. Vegetables: Organic, a wide variety of locally organically grown vegetables including cabbage, kale, greens, broccoli, cauliflower, squash and many more – 25 -30%
3. A variety of beans including tofu, tempeh and natto, and sea vegetables – 5-10%
4. Soups especially miso soup - 5%
5. Fish, seafood, seasonal fruits, condiments and seasonings are supplements to the main diet.

**Dr Julian Kenyon**  
**Medical Director,**  
**The Dove Clinic for Integrated Medicine**  
**London and Winchester [www.doveclinic.com](http://www.doveclinic.com)**

Potential Renal Acid Load (PRAL) of foods and beverages (related to 100g portions)

		-20	-10	-5	-0.5	0.5	5	10	20
	<i>Very Strongly Alkaline</i>	<i>Strongly Alkaline</i>	<i>Alkaline</i>	<i>Moderately Alkaline</i>	<i>Nearly neutral</i>	<i>Moderately Acid</i>	<i>Acid</i>	<i>Strongly Acid</i>	<i>Very strongly acid</i>
Herbs «	Parsley dried	Curry powder		Chives -3.6					
Spices	-62.4 Basil dried -57.9 Ginger -23	-19.9 Black Pepper -19.7							
Fruits	Raisins -21		Black-currants -6.5 Bananas - 5.5	Apricots -4.8 Kiwi Fruit 4.1 Tomato Juice -3.8  Cherries -3.6 Orange Juice -2.9 Pears -2.9 Oranges -2.7 Pineapple -2.7 Lemon Juice -2.5 Peaches -2.4 Apple Juice -2,2 Apples -2.2 Strawberries -2.2 Watermelon -1.9					
Vegetables		Spinach -14	Celery -5.2	Carrots, young -4.9  Zucchini -4.6 Cauliflower -4,0 Potatoes old -4.0 Radish, red -3,7 Eggplant -3.4 Tomatoes -3,1 Beans, green -3.1 Lettuce -2.5 Chicory -2.0 Leeks -1.8 Lettuce, iceberg -  Onion -1.5 Mushrooms -1,4 Peppers -1,4 Broccoli -1.2 Cucumber -0.8	Asparagus -0.4				
Beverages				Red Wine -2.4 Mineral Water (example) -1.8  Coffee -1.4  White Wine, dry -1,2 Grape Juice -1	Cocoa -0.4 Tea -0.3 Beer, draught - 0.2 Beer, stout - 0,1 Mineral Water (example) -0.1 Cola 0.4	Beer, pale 0.9			
Fats S, Oils					Margarine -0.5 Olive Oil -0.0 Sunflower seed oil 0.0				
Sugars, sweets and preserves				Marmalade -1.5	Honey -0.3 Sugar, white - 01	Chocolate Milk 2.4 Madeira cake 3.7			

	<i>Very Strongly Alkaline</i>	<i>Strongly Alkaline</i>	<i>Alkaline</i>	<i>Moderately Alkaline</i>	<i>Nearly neutral</i>	<i>Moderately Acid</i>	<i>Acid</i>	<i>Strongly Acid</i>	<i>Very strongly acid</i>
<i>Legumes &amp; Nuts</i>			Soya Flour 5, 9	Soya beans -4.1 Natto-3.2 Hazelnuts -2.8	Soya milk -0.3 Soya bean Sprouted Raw 0.3	Peas 1.2 Mori-Nu tofu 2.0 Tofu 3.4 Lentils 3.5 Soya Sauce 4,5	Miso 6.9 Tempeh 8.2 Tofu, prepared with calcium sulphate 8.3 Walnuts 6,8 Peanuts, plain 8.3		
<i>Grain</i>						Rice, white boiled 1.7 Bread wheat Wholemeal 1,8 Crispbread, rye 3.3 Bread, wheat, white 3.7 Bread, wheat, mixed 3.8 Bread, rye, mixed 4.0 Bread, rye 4.1 Rice, white 4,6	Rye flour, whole 5.9 Cornflakes 6.0 Noodles, egg 6.4 Spaghetti, white 6.5 Wheat flour white 6.9 Spaghetti wholemeal 7.3 Wheat flour, wholemeal 8.2	Oat flakes 10.7 Rice, brown 12.5	
<i>Meat</i>							Frankfurters 6.7 Beef, lean 7.8 Pork, lean 7.9 Chicken, meat 8.7 Steak, lean and fat 8.8 Veal 9.0 Turkey, meat 9.9	Luncheon meat 10.2 Liver sausage 10.6 Salami 11.6 Corned beef 13.2	
<i>Fish &amp; Eggs</i>						Eggwhites 1.1	Haddock, 6.8 Herring 7.0 Cod 7.1 Eggs, whole 8.2	Trout 10.8	Egg yolks 23.4
<i>Dairy</i>						Butter 0.6 Ice cream 0.6 Milk, whole 0.7 Milk, evaporated 1.1 Creams, fresh, sour 1.2 Yoghurt, fruit 1.2 Yoghurt, plain 1.5 Soft cheese 4.3	Cottage cheese 8.7	Fresh cheese 11.1 Camembert 14.6 Cheese: Gouda 18.6 Hard cheese 19.2	Cheese, Cheddar-type, reduced fat 26.4 Processed cheese 28.7 Parmesan 34.2

In association with Remer, T and Manz, F 1995. Potential renal acid load of foods and its influence on urine pH. J Am Diet Assoc, 95.

PRAL values are expressed in milli-equivalents of X per 100g portion of food consumed, where X is the percentage of principal acids (chloride (C1) + phosphate (P04) + sulphate (SO4)) minus the percentage of principal bases (sodium (Na) + potassium (K) + calcium (Ca) + magnesium, (mg)) present in the food,