

Penny Brohn
Cancer Care

Life changing complementary cancer care

The Bristol Approach to Supplements

A guide on how to maintain optimal
nutrient levels whilst living with cancer

Developed by Penny Brohn Cancer Care, the Bristol Approach is a unique combination of physical, emotional and spiritual support using complementary therapies and self-help techniques to help you live well with and beyond cancer.



The Bristol Approach to Supplements has been written to provide information on specific nutrients and how they are important for the health of those living with cancer.

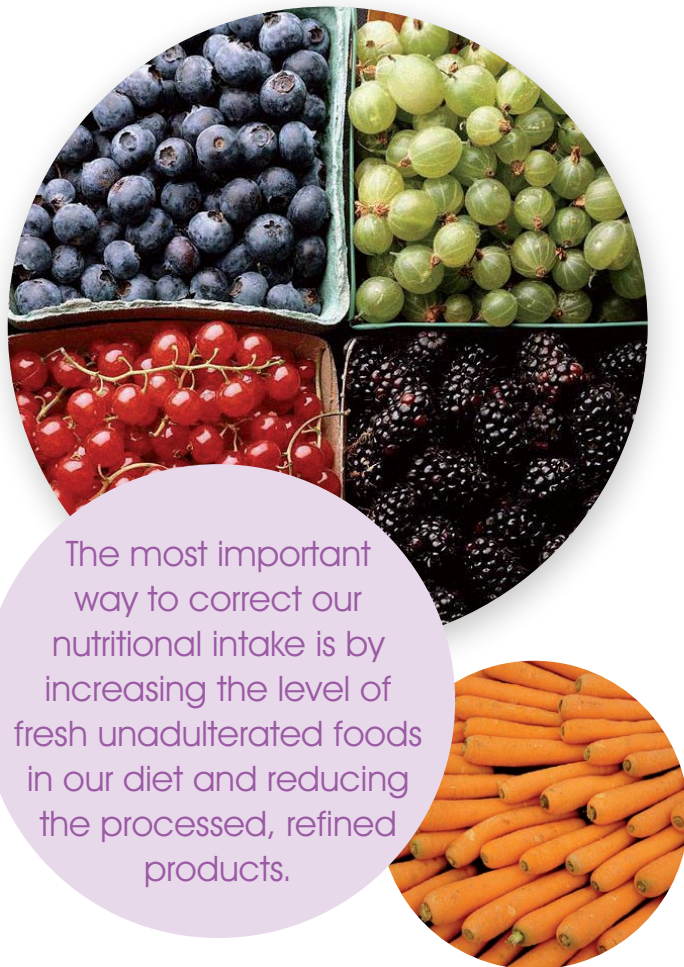
This document offers guidance on how to obtain the essential nutrients and other health promoting compounds primarily from food but also with the help of supplements when necessary. Recommendations are given for

particular supplements along with advice on how to combine these with mainstream cancer treatments. The Bristol Approach to Supplements has been designed to accompany the Bristol Approach to Healthy Eating.

Food and nutrients

Nutrients are compounds required by the body to provide energy or build tissue for growth

and repair. Our foods contain an array of nutrients along with other compounds that assist the digestion, absorption or utilisation of these nutrients. They also contain chemicals not essential for our body but with powerful health promoting properties nonetheless. Many phytonutrients (nutrients of plant origin) such as lycopene and curcumin fall into this category.



The most important way to correct our nutritional intake is by increasing the level of fresh unadulterated foods in our diet and reducing the processed, refined products.

Nutrient deficiencies

While we may be getting plenty of food and an abundance of calories in the Western world, increasing evidence suggests that often we are eating foods that do little to support our health. Modern farming techniques and animal rearing practices have resulted in a change in the nutritional content of our basic foods. Added to this, our diet has become increasingly refined and processed which has further altered our nutritional intake. In particular, these changes have led to a decline in our intake of micronutrients such as certain vitamins, minerals and the omega 3 essential fatty acids, and a rise in our intake of refined carbohydrates and sugar as well as processed fats. Many experts believe such alterations to our nutritional intake have played a significant role in the rise of chronic conditions and diseases such as obesity, heart disease, diabetes, osteoporosis and cancer.

Correcting nutritional intake

The most important way to correct our nutritional intake is by increasing the level of fresh unadulterated foods in our diet and reducing the processed, refined products.

While foods are our primary line of defence against nutritional deficiencies and imbalances, even those following a healthy diet may not receive adequate nutrients if their digestive system is not functioning optimally. Also, those living with disease may be unable to eat well due to a lack of appetite or other symptoms caused by illness or its treatment.

Given this and the fact that it can be difficult to follow a perfectly balanced diet every day, supplements are often recommended as nutritional insurance alongside a healthy diet.

Choosing supplements

If you want to provide your body with a little extra nutritional support by taking supplements alongside your healthy diet, there are a few simple guidelines to follow:

1. If possible buy your supplements from a shop where the staff are knowledgeable about their products and can answer any questions you may have
2. If possible avoid products containing sugar, artificial sweeteners and hydrogenated fats
3. Always stick to the recommended dosage instructions unless advised otherwise by a doctor or nutritionally qualified health professional
4. Use the products within the use-by date indicated and follow any storage instructions
5. Read the product label to check for contraindications (factors that would mean taking a certain product is inadvisable)
6. Only take products designed for **general** nutritional support unless you are being guided by a nutritionally qualified health professional

If you would like to know more about the functions of certain essential nutrients and their possible anti-cancer effects, see the table at the end of this document.



Common questions about: Supplements



Why do some supplements contain nutrient levels that are higher than the recommended daily allowance (RDA)?

The RDA is often the level that prevents a deficiency disease, for example scurvy, but will not necessarily be at a level for optimum health maintenance.

Is it possible to take too much of a nutrient?

Yes, it is possible to take too much of a nutrient which is why guidance is often required. As a general rule, the nutrient levels

in a multivitamin and mineral, although often higher than the RDA, will be safe and appropriate for most people. However, supplements containing few or just one nutrient may contain levels that are not appropriate for some people.

What are antioxidants?

Antioxidants are substances that help to prevent damage caused by excess free radical activity. Free radicals are highly reactive chemicals that can cause damage to cells. Free radicals are known to be involved in the development of cancer.

When should I take my supplements?

Unless otherwise stated on the label, supplements are usually best taken with food.

What should I do if I have difficulties swallowing tablets?

Large tablets can be crushed and stirred into a cold drink. Alternatively, many nutrients can be obtained from powder and liquid supplements. These are also often recommended for those with poor digestion as they are easier for the body to break down.

Supplement recommendations for general nutritional support

At Penny Brohn Cancer Care we recommend three supplements as general nutritional support. These are:

1. A multivitamin and mineral – to help ensure adequate intake of the essential nutrients
2. A multi-antioxidant – to provide a mix of phytonutrients with antioxidant activity that protect against free radical damage such as curcumin, lycopene and green tea extract
3. An essential fatty acid product rich in omega 3 fats – to protect against omega 3 deficiency and help support general health

Other supplements can be useful

Apart from their role as general nutritional support, supplements can be used to correct specific nutrient deficiencies or support particular body systems. In these situations nutrients and nutrient-related compounds are used to directly influence an aspect of a person's health for example the digestive, immune or nervous system.

There are also supplements that have specific benefits for those with cancer, for example certain nutrients and herbs offer cardio-protection for those taking chemotherapy drugs that can damage the heart, whilst others can diminish chemotherapy-associated nausea.

In all cases it is strongly advised that people taking such supplements seek guidance from a nutritionally qualified health professional. It is important that a supplement programme is tailored to meet the specific nutritional needs of an individual and also that the programme can be adapted as needs change with time.

Combining supplements with treatment

It is important to be cautious when combining supplements with treatments because of the potential for interaction.

Unfortunately, the study of interactions between nutrients or herbs and conventional drugs or other treatments is in the very early stages and there are still very many gaps in the knowledge. It does appear from the limited research that certain supplements may be of benefit during treatment. However, because there are still uncertainties in this area we have chosen to recommend a cautious approach. If you feel you would like to continue taking supplements during your treatment we suggest that you seek advice from a nutritionally qualified health professional.

Penny Brohn Cancer Care recommendations

1. Always inform your medical team of the supplements you are taking
2. For those having chemotherapy – stop taking all supplements 2 days before your chemotherapy session and restart 2 days after your chemotherapy session. If you are on continuous chemotherapy and would like to take some supplements throughout, seek the advice of a nutritionally qualified health professional
3. For those having radiotherapy – stop taking all supplements 2 days before your radiotherapy session and restart 2 days after your radiotherapy session. If you are having daily radiotherapy treatments and would like to take some supplements throughout, seek the advice of a nutritionally qualified health professional
4. For those having surgery – stop taking all supplements 2 days before your surgery and restart 2 days afterwards or when you feel ready
5. For those taking medication – the supplements Penny Brohn Cancer Care recommend for general nutritional support are safe to take with most medication. However, you will need to inform your doctor of these supplements if you are taking blood thinning drugs and you should double check that there are no other contraindications with your medical team
6. If you are taking supplements other than those Penny Brohn Cancer Care recommend for general nutritional support talk to a nutritionally qualified health professional about the possibility of contraindications

Further information and support

Penny Brohn Cancer Care is the UK's leading provider of complementary support for people living with cancer and their loved ones. The charity gives people the practical tools needed to improve their life and help manage their fear of cancer. Funded entirely by voluntary income, Penny Brohn Cancer Care's services are delivered through a carefully designed programme of support, which works well alongside conventional medical treatment, known as the Bristol Approach.

For further information please contact us:

Helpline: **0845 123 2310**

helpline@pennybrohn.org

Available 9.30am - 5pm weekdays, outside of these hours please leave a message and we will call you back.

At Penny Brohn Cancer Care we hold regular courses focused on nutrition and healthy cooking. We also have a range of information sheets on subjects such as dairy foods and phytoestrogens. If you would like further details please check the website, www.pennybrohncancercare.org

Finding a Nutritionally Qualified Health Professional

British Association of Nutritional Therapists.

Telephone: **08706 061284**

Web: www.bant.org.uk

Nutrition Society.

Telephone: **020 7602 0228**

Web: www.nutritionssociety.org

British Dietetic Association.

Telephone: **0121 200 8080**

Web: www.bda.uk.com

Other sources of information

NHS National Library for Health.

Web: www.library.nhs.uk

World Cancer Research Fund.

Telephone: **020 7343 4205**

Web: www.wcrf-uk.org

Supportive research

For details of the supportive research for these guidelines, please see the Penny Brohn Cancer Care website, www.pennybrohncancercare.org

© Penny Brohn Cancer Care 2010 – All rights reserved. Whilst every care is taken to provide accurate information, neither the Charity, the editor, nor the contributors undertake any liability for any error or omission. Copyright and all other intellectual property rights in all information, materials and images contained within this publication is owned by and remains the property of Penny Brohn Cancer Care. Any unauthorised copying, citing, publication or reproduction of the content of this publication is strictly prohibited and constitutes an infringement of copyright. Requests for permission to use the copyright materials in this publication should be emailed to copyright@pennybrohn.org

Nutrient <i>rich food sources</i>	General functions	Protection against cancer	Supplementing
<p>Vitamin A and beta-carotene</p> <p>Vitamin A – meat, particularly liver, eggs, milk and dairy foods</p> <p>Beta-carotene – vegetables and fruit, particularly carrots, green leafy vegetables, sweet potatoes</p>	<p>Vitamin A aids in the growth and repair of body tissues and is particularly important for the health of the mucous membranes. It is required for healthy bones, teeth and blood and is essential for maintaining good eye sight and a healthy immune system. Beta-carotene can be converted to vitamin A by the body and also possesses antioxidant activity.</p>	<p>The importance of vitamin A in supporting the immune system and beta carotene as an antioxidant, mean these nutrients have an important role in cancer protection. Foods rich in beta carotene have been shown to protect against cancer.</p>	<p>Vitamin A and beta carotene are usually present in multivitamins and sometimes also antioxidant supplements. Beta carotene should always be supplemented in its natural form rather than a synthetic version.</p> <p>Vitamin A supplementation is not recommended during pregnancy.</p>
<p>B vitamins</p> <p>Meat, eggs, wholegrains, pulses</p>	<p>The B vitamins function as enzyme cofactors and they play vital roles in the metabolism of carbohydrates, protein and fats. The B vitamins are also very important in maintaining the health of the nervous system.</p>	<p>The B vitamins are required for the functioning of the DNA repair enzymes. Preventing DNA damage is important for protection against cancer.</p>	<p>The B vitamins are usually present in multivitamins or they can be taken as a complex. Supplementation of single B vitamins is not recommended without guidance from a nutritionally qualified health professional.</p>
<p>Vitamin C</p> <p>Many vegetables and fruit but particularly citrus fruit, berries, peppers, broccoli</p>	<p>Vitamin C is a nutrient with antioxidant activity and it helps the body to fight infection. It is also required for the formation of the protein collagen which means it is essential for healthy skin, blood vessels, ligaments and bones.</p>	<p>The role of vitamin C in immune support and its antioxidant activity mean that it is important for cancer protection. Studies show that foods rich in this vitamin help reduce the risk of cancer.</p>	<p>Vitamin C is usually present in a multivitamin and sometimes antioxidant supplements. Vitamin C in its most basic form (ascorbic acid) can cause gastric irritation at high levels</p>
<p>Vitamin D</p> <p>Oily fish, eggs</p> <p>The best way to increase vitamin D levels is through safe exposure to sunlight</p>	<p>Vitamin D is closely involved in regulating the body's absorption and use of calcium. It is important for bone health, nervous function, the immune system and the health of the cardiovascular system.</p>	<p>Vitamin D has a role to play in regulating cell replication and in this way helps to protect against cancer. Vitamin D deficiency is linked to increased risk of cancer.</p>	<p>Vitamin D is usually present in a multivitamin and naturally present in fish liver oils. Deficiency is relatively common during winter months.</p>
<p>Vitamin E</p> <p>Vegetable oils, nuts and seeds, avocado</p>	<p>Vitamin E is a nutrient with antioxidant activity and it therefore helps to protect the body from oxidation due to excess free radicals. This nutrient is particularly important for supporting the health of the cardiovascular system.</p>	<p>In helping to protect the body against free radical excess, vitamin E is important in defending against cancer.</p>	<p>Vitamin E is usually present in a multivitamin and sometimes antioxidant supplements. High doses may interfere with anti-coagulant drugs such as Warfarin.</p>
<p>Vitamin K</p> <p>Vegetable oils, green leafy vegetables, broccoli</p>	<p>A key function of vitamin K is its essential role in the clotting of blood. It is also an important nutrient for bone health and cell growth regulation.</p>	<p>Its role in cell growth regulation means vitamin K is an important anti-cancer nutrient. Recent research supports its role as a cancer-preventative nutrient.</p>	<p>Vitamin K is present in some multivitamins. High doses may interfere with anti-coagulant drugs such as Warfarin.</p>
<p>Calcium</p> <p>Milk and dairy foods, pulses, green leafy vegetables</p>	<p>Calcium is used in the development and maintenance of bone structure and rigidity. It is also involved in the blood clotting process, nerve transmission and muscle stimulation.</p>	<p>By helping to maintain correct pH levels within cells, calcium may help to protect against DNA damage which is important in the prevention of cancer.</p>	<p>Calcium is found in multiminerals. Calcium should always be taken alongside magnesium to ensure adequate utilisation. People with hyperparathyroidism or hypercalcaemia should only take calcium supplements under the supervision of a doctor.</p>

Nutrient <i>rich food sources</i>	General functions	Protection against cancer	Supplementing
<p>Iodine Fish and seafood, milk and dairy foods, seaweed</p>	<p>Iodine aids in the development and functioning of the thyroid gland. It plays an important role in regulating the body's production of energy and growth and development.</p>	<p>Iodine deficiency appears to result in compromised immunity. Low levels of iodine have been associated with certain types of cancer.</p>	<p>Iodine is found in many multiminerals. Iodine supplements are contraindicated for those having radioactive iodine treatment.</p>
<p>Iron Meat, particularly red meat, seafood, pulses, dried fruit</p>	<p>Iron is abundant within the blood and is the main carrier vehicle for delivering oxygen to all the cells of the body.</p>	<p>Iron deficiency can cause anaemia resulting in fatigue and breathlessness. In relation to cancer, excess levels of this mineral can act as a catalyst for free radical formation and at high levels iron is associated with increased cancer risk.</p>	<p>Iron is found in most multiminerals. Iron supplements above the level found in a multimineral should only be used when tests indicate a deficiency.</p>
<p>Magnesium Wholegrains, green leafy vegetables, nuts, pulses</p>	<p>Magnesium is involved in many essential processes including energy production, vascular tone, muscle impulse transmission and electrical stability of cells. It is also important for bone health.</p>	<p>Magnesium is involved in synthesis of genetic material such as DNA as well as cell signalling. Both functions help to maintain a healthy community of cells which is important for reducing cancer risk.</p>	<p>Magnesium is found in multiminerals. This is an important mineral to supplement alongside calcium.</p>
<p>Potassium Vegetables and fruit</p>	<p>Potassium is one of the key minerals that help to maintain a healthy environment inside and outside of the cell. It is also vital for the electrical functions of the body such as nerve impulse transmission and heart contraction.</p>	<p>By helping to maintain correct pH levels within cells, potassium may help to protect against DNA damage which is important in the prevention of cancer.</p>	<p>Potassium is found in some multiminerals. Potassium supplementation above the level found in a multimineral is rarely required.</p>
<p>Selenium Nuts and seeds, wholegrains, seafood</p>	<p>Selenium possesses antioxidant activity and it works closely with vitamin E to protect cells from free radical damage.</p>	<p>Selenium's antioxidant activity means that it is an important anti-cancer nutrient. Deficiency of selenium is associated with impaired immune function and an increased risk of cancer.</p>	<p>Selenium is usually present in a multimineral and sometimes antioxidant supplements.</p>
<p>Zinc Seafood, meat, nuts pulses</p>	<p>Zinc has many important roles within the body. It is involved in metabolism and energy production and is required for healthy immune function.</p>	<p>Due to its key role in supporting immune health, zinc is an important nutrient in the protection against cancer.</p>	<p>Zinc is usually present in a multimineral.</p>
<p>Essential fatty acids (EFAs) Omega 3 – fish and seafood, particularly oily fish, flaxseeds, certain other nuts and seeds Omega 6 – nuts and seeds, vegetable oils, eggs, whole grains</p>	<p>EFAs must be provided by the diet as they have a wide range of essential functions and can't be manufactured by the body.</p> <p>There are two EFAs, one is known as an omega 3 EFA, and the other an omega 6 EFA. The two work closely and must be in balance in order to regulate the inflammatory response and blood clotting, and keep cell membranes flexible, amongst other things.</p>	<p>One of the underlying causative factors in certain degenerative diseases, including cancer, is low-level, chronic inflammation. An imbalance of the EFAs will contribute to this type of inflammation.</p>	<p>Most people have a deficiency of the omega 3 EFA in relation to the omega 6 EFA and usually omega 3 supplements are recommended. However, excess omega 3 can lead to a deficiency of omega 6 and may interfere with anti-coagulant drugs such as Warfarin. Therefore, high-dose supplements are not recommended without guidance from a nutritionally qualified health professional.</p>