

Nature Cures

The A to Z of Ailments and Natural Foods

Nat H Hawes



Hammersmith Books
London, UK

First published in 2015 by Hammersmith Health Books – an imprint of
Hammersmith Books Limited
14 Greville Street, London EC1N 8SB, UK
www.hammersmithbooks.co.uk

© 2016, Nat H Hawes

Nat H Hawes has asserted her right under the Copyright, Designs and
Patent Act 1988 to be identified as the author of this work.

All rights reserved. No part of this publication may be reproduced, stored
in any retrieval system or transmitted in any form or by any means,
electronic, mechanical, photocopying, recording or otherwise, without the
prior written permission of the publisher and the authors, except in the
case of brief quotations embodied in critical articles and reviews.

Disclaimer: The information contained in this book is for educational pur-
poses only. It is the result of the study of the author. Whilst the information
and advice offered are believed to be true and accurate at the time of going
to press, neither the author nor the publisher can accept any legal responsi-
bility or liability for any errors or omissions that may have been made of for
any adverse effects which may occur as a result of following the recommen-
dations given herein. Always consult a qualified medical practitioner if you
have any concerns regarding your health.

British Library Cataloguing in Publication Data: A CIP record of this book
is available from the British Library.

Print ISBN 978-1-78161-039-8
Ebook ISBN 978-1-78161-040-4

Commissioning editor: Georgina Bentliff
Designed and typeset by: Julie Bennett, Bespoke Publishing Ltd
Cover design and illustrations by: Nat H Hawes
Production: Helen Whitehorn, Path Projects Ltd
Printed and bound by: TJ International Limited, Padstow, Cornwall, UK

Contents

About the Author	v
Introduction	1
Section I: A to Z of the human body, ailments and natural remedies	3
Chapter 1: The human body	4
Chapter 2: Blood, circulation and heart	11
Chapter 3: Bones and joints	49
Chapter 4: Brain and nervous system	63
Chapter 5: Digestive system, gallbladder and liver	88
Chapter 6: Ears	138
Chapter 7: Eyes	145
Chapter 8: Glands, lymphatic system, pancreas and spleen	155
Chapter 9: Hair and nails	184
Chapter 10: Immune system	190
Chapter 11: Nose and throat	195
Chapter 12: Reproductive system	200
Chapter 13: Respiratory system	233
Chapter 14: Skin	248
Chapter 15: Teeth and gums	265
Chapter 16: Urinary system	271
Section II: A to Z of hazards to human health	285
Section III: A to Z of Nature Cures and safeguards	555
Chapter 17: A to Z of natural foods and derivatives	559
Chapter 18: A to Z of organic nutrients and compounds	859
Chapter 19: A to Z of minerals	991

Chapter 20: Nature's colour codes	1033
Chapter 21: Butter versus margarine	1036
Chapter 22: Cleanse and detoxify	1041
Chapter 23: Natural household cleaners	1048
Chapter 24: Create your own natural products	1054
Chapter 25: Brine pickling for health	1060
Chapter 26: Sprouting on the windowsill	1064
Chapter 27: Raw juice therapy	1068
Chapter 28: Nature Cures for pain and inflammation	1078
Chapter 29: Natural foods for the body	1084
Chapter 30: Daily essentials	1090
Chapter 31: Nature Cures high-nutrient diet plan	1092
Chapter 32: Nature Cures recipes for high nutrition	1098
Chapter 33: Nature Cures top tips to prevent ill health	1104
Index	1117

About the Author

Nat H Hawes has been researching the relationship between food, nutritional science and health for more than 12 years. Originally prompted to do so by her father's and friends' health problems, her research rapidly broadened to embrace all aspects of nutritional health and she launched the website naturecures.co.uk in 2010 to share this knowledge. Since that time – and at the time of going to press, the site has received almost 2 million hits from all over the world and acts as a barometer of health concerns internationally.

Since launching the site, Nat has gained diplomas with distinction in advanced and sports nutrition and provides health advice in person as well as via the website. She continues to track all the latest research findings and updates naturecures.co.uk frequently.

DEDICATION

This book is dedicated to Elsie Hawes, who showed me how to understand and love nature as a child in 1970, and David Attenborough who has sustained it ever since.

INTRODUCTION

This book has been 10 years in the making and in that time I have become a highly experienced researcher and developed a wide and in-depth knowledge of the therapeutic value of foods. I have also qualified as a nutritionist. I started out with a wish simply to help my family and friends, and myself, with individual health problems, but what I discovered developed in time into my website www.naturecures.co.uk which is now receiving several thousand hits per day from all over the world.

Nature Cures is a distillation of the website. To make it work as a book I have done a considerable amount of reorganising – what works on a website is different from what works on the pages of a book. I have also had to be more aware of how much I am writing – a book has a limited size in the way a website does not. I have therefore organised it as follows:

Section I describes all the body parts/systems and the conditions that may affect them. It only goes into detail about the most common ailments. Some conditions are hereditary (genetic) and, in these cases, there are often very few natural remedies (if any). However, with all conditions, a healthy nutritious diet is important and, when there are natural medicinal foods that can help treat the symptoms of pain and inflammation caused by them, they have been listed.

Section II is an A to Z list of all the modern hazards to human health with natural remedies, alternatives and ways to avoid them. I have included cancer (see page 340) in this section because of its relationship to the toxic environment in which we now live.

Section III describes how a balanced and nutritious diet can create a healthy system and what properties and nutrients natural foods and derivatives contain by way of an A to Z list. It also explains the cellular processes that all nutrients are involved in and not only shows why it is so important to ensure that all these nutrients are included in the diet, but also gives ways to do so.

To make the book of real practical use I have written it so that readers may easily find out how to improve their health with natural foods without having to trawl through any complicated academic justifications. It has taken me 10 years to glean the information from scientific research papers and from libraries and educational websites as well as from the history of how our ancestors used natural foods for medication and sustenance. There are no names, dates, times or places of any studies as I have deemed this unnecessary information. *Nature Cures* simply provides the facts regarding which natural foods can help with any kind of human ailment and shows why what we eat and drink is so important for health and vitality.

What millennia of experience have taught us is that natural foods (note ‘foods’ – there are plenty of natural toxins too!) do no harm in moderation, but they will have different effects in each individual because every one of us is unique. However, it is worth trying any of the natural foods I have listed under each ailment, when suffering from that same condition, as they will all have worked for someone sometime and may just work for you and your loved ones too. If you then require more information about any particular food or nutrient mentioned, plus the natural sources of all nutrients, it may be found in the A to Z lists in Section 3 or through the index at the back of the book.

Some foods have been misunderstood over time and are often categorised wrongly, such as aubergine, courgettes and tomatoes, which are considered vegetables when they are in fact fruits. Peanuts are not actually nuts but legumes, and some ‘grains’ are seeds or nuts. Herbs, spices and vegetables are often muddled up too. So, to avoid confusing the reader, I have listed these foods as they are commonly thought of rather than what they technically are.

More research is being published all the time that contributes to this important body of knowledge. As far as I can determine, this book is up to date at the time of going to press. I am continuing to update my website on an ongoing basis and future editions of *Nature Cures* will draw on that. If you have concerns or questions about any of the information in the book please visit www.naturecures.co.uk in the first instance, and feel free to contact me via the contacts page on the website.

N H Hawes, 2015

SECTION I

A to Z OF THE HUMAN BODY, AILMENTS AND NATURAL REMEDIES

1. THE HUMAN BODY p 4
2. BLOOD, VEINS AND HEART p 11
3. BONES AND JOINTS p 49
4. BRAIN AND NERVOUS SYSTEM p 63
5. DIGESTIVE AND EXCRETORY SYSTEM, GALLBLADDER AND LIVER p 88
6. EARS p 138
7. EYES p 145
8. GLANDS, LYMPHATIC SYSTEM, PANCREAS, AND SPLEEN p 155
9. HAIR AND NAILS p 184
10. IMMUNE SYSTEM p 190
11. NOSE AND THROAT p 195
12. REPRODUCTIVE SYSTEM, PREGNANCY, CHILDBIRTH AND INFANT CARE p 200
13. RESPIRATORY SYSTEM p 233
14. SKIN p 248
15. TEETH AND GUMS p 265
16. URINARY SYSTEM p 271

1

THE HUMAN BODY

“It is far more important to know what person the disease has than what disease the person has.”

Hippocrates, 460–370 BC

The incredible human machine that has evolved amazing complexity, over thousands of years, works in harmony with all the organic and inorganic elements that surround it. It is also made up of all these things and uses many of them to carry out its internal processes. However, it can become overwhelmed; we often tend to poison it and spend a great part of our lives recovering from ailments that have been induced by toxic overdose, nutrient deficiencies and infections which, mostly, have been self-imposed.

In a healthy person, if the skin is cut open it will heal automatically. If part of the liver is lost, it regenerates itself. If a bone is fractured or broken it will begin healing itself immediately. Healing occurs naturally if the body is taken care of through its being given the right nutrients and through its not being repeatedly subjected to synthetic unnatural chemicals, heavy metals and damage.

THE AMAZING NUMBERS WITHIN THE HUMAN BODY

It is difficult to comprehend the enormous numbers involved in the construction and maintenance of the human body. The following shows the complexity of an average sized adult.

- The human body consists of 300 bones at birth, many of which fuse to become 206 as an adult, plus 642 muscles, 900 ligaments and 4000 tendons.
- The skin, spread out, would cover 16 square feet (1.5 m²) and there are approximately 250,000 hairs on the head.
- There are 1,500,000 sweat glands, which, if spread out on one surface, would occupy over 10,000 square feet (929 m²).
- The maximum sweat rates of an adult can be up to four litres per hour or 14 litres per day.
- There are 550 named arteries and 100,000 miles of blood vessels which could encircle the circumference of the earth four times.

- In 70 years, the heart beats 2,500,000,000 times and pumps 500,000 tons of blood around the body.
- There are 30,000,000 white corpuscles and 180,000,000,000,000 red corpuscles in the blood.
- The lungs are composed of 700,000,000 honeycomb-like cells, all of which are used in breathing; this is equal to a flat surface of 2000 square feet.
- The average adult at rest inhales and exhales seven or eight litres (about a quarter of a cubic foot) of air per minute which totals approximately 11,000 litres of air (388 cubic feet) per day.
- The air inhaled is approximately 20% oxygen and air exhaled is approximately 15% oxygen, so about 5% of the volume of air is consumed in each breath and converted to carbon dioxide. A human being uses about 550 litres of pure oxygen (19 cubic feet) per day. Physical activity increases this number.
- Altogether 133 billion cubic feet of oxygen is required per day for the seven billion humans currently alive on earth, to breathe.
- The human brain uses about 200 kilocalories of energy per day, which is equivalent to the amount of power a 10-watt light bulb uses.
- The nervous system, controlled by the brain, has 3,000,000,000,000 nerve cells, 9,200,000,000 of which are in the cortex (outer layer) of the brain alone.
- Nerve impulses to and from the brain travel as fast as 250 miles per hour, which means a nerve impulse can travel six feet from the head to the toe within a hundredth of a second.
- Water is the most abundant chemical compound in living human cells, accounting for 65 to 90% of each cell.
- The human body can consist of anything between 65% and 90% water and the total amount is dependent on body mass. Infants' bodies contain up to 75% water. The adult average is between 12 and 18 gallons of water.
- Almost three pints of saliva are swallowed every day.
- The stomach generates daily from five to 10 quarts of gastric juice, which digests food and destroys germs; this is equal to two gallons daily.
- The entire human intestine is 10 feet (3.04 m) longer than the body.
- The average small intestine is approximately 23 feet (7 m) long.
- The average large intestine is approximately five feet (1.5 m) long.
- The human body expels methane gas on average 14 to 23 times per day, totalling about two pints in volume, mostly through burping.
- The entire body is also made from the following elements: oxygen (65%), carbon (18%), hydrogen (10%), nitrogen (3%), calcium (1.5%), phosphorus (1.2%), potassium (0.2%), sulphur (0.2%), chlorine (0.2%), sodium (0.1%) plus traces of each of the following: cobalt, copper, fluorine, iodine, iron, manganese, molybdenum, selenium and zinc and even smaller amounts of aluminium, arsenic, bromine, lead, lithium, silicon, strontium, vanadium and many others.
- There are 100,000,000,000,000 or 100 trillion cells in the human body but only one in 10 is human. Of these, 90% are bacterial and fungal microbes and often viruses too. That is more than there are stars in the galaxy.
- Every day the body generates 300 billion cells to replace those that die.
- It takes one month for the liver to replace itself and every seven years the entire body has replaced itself.
- Each eye is comprised of 130 million photo-receptor cells.

- Each cell in the human body contains 23 pairs (46 in total) of chromosomes. The largest, chromosome 1, contains about 8000 genes. The smallest, chromosome 21, contains about 300 genes. (Chromosome 22 should be the smallest, but the scientists made a mistake when they first numbered them.)
- There are approximately 23,000 genes, which make up only 3% of the DNA.
- For every human gene in the human body there are 360 microbial genes.
- There are two metres of DNA in the nucleus of every cell.
- One gram of DNA can hold about two petabytes of data, which is the equivalent of about three million CDs.
- Using the same amount of space, DNA can store 140,000 times more data than ferric oxide molecules, the substance which stores information on computer hard drives.
- It can be argued that a human possesses enough DNA, stretched out in a line, to reach from here to the sun and back more than 300 times, which is approximately 6000 million miles of DNA strands in the entire body.
- Cells are made of molecules. Molecules are made of atoms. There are 118 different types of atoms known so far.
- There are 100,000,000,000,000 or 100 trillion atoms in an average human cell.
- There are approximately 7,000,000,000,000,000,000,000,000,000 (seven billion billion billion) atoms in one average-sized human body.
- It is estimated that each cell in the human body contains about 100 times as many atoms as there are stars in the Milky Way. The Milky Way has 200 billion stars.

HUMAN CELLS

The human body is made up of over 200 types of specialised cells. Each cell is an amazing world in itself. The inherent nature of a cell is to regenerate to make good any damage and to reproduce, through cell division (mitosis) and planned cell death (apoptosis – see below), to sustain growth and to maintain the same number of cells in the body. The human body experiences about 10,000 trillion cell divisions in a lifetime.

A cell is the basic structural and functional unit of all living organisms, the building block of life. All organisms are composed of one or more cells. Single-celled organisms emerged on earth at least four billion years ago and their main purpose is to reproduce in order to ensure survival of future generations. All cells existing today are the product of a continuing process of evolution. Just as bacteria have, in recent years, evolved to become resistant to antibiotics, the human body cells are evolving to survive the worst damage that nature (or man himself) can impose.

During cell duplication about one in every million of the new cells produced in the body has an inherent fault. Cells that are abnormal or damaged beyond repair are programmed to self-destruct through a process called ‘apoptosis’, which makes cell damage irrelevant. When this vital process fails, the result can be anomalous cells replicating out of control and becoming cancerous tumours.

The body also includes stem cells which act as a maintenance system. Stem cells divide, through

mitosis, and self-renew to produce more stem cells. Stem cells can differentiate into diverse specialised cell types such as ‘chondroblasts’ which produce a special secretion called ‘chondrin’ which actively builds and repairs cartilage. As the chondroblasts mature they become ‘chondrocytes’ which replace the damaged tissues, effectively repairing the wear and tear of the cartilage.

Cells have different life spans and millions die every minute with or without damage. Cell damage and cell death therefore do not cause illness, because the cells naturally reproduce to provide a fresh start. These and other cellular functions are the natural processes that keep the body healthy. The cells will continue to repair or destroy themselves as required and will reproduce to replenish themselves, as long as they are supplied with the essential nutrients to enable them to do this. Illness develops when cellular functions break down and is very often due to missing elements in the diet.

With all the intricate processes and vast numbers in mind, it is no wonder that keeping this amazing machine in perfect working order is almost impossible, especially because of the hazards that are constantly encountered with the advent of fuel-driven travel and the advancement of chemical technology. This has produced pollutants, toxins and biological mutations which the human body has not yet had time to evolve a defensive resistance to. For this reason, humans must take care to provide the right environment to cleanse and repair the system using natural means which the body can deal with expertly. It is important to know how much the body can withstand and how much of each nutrient it needs (and how often) and this is the challenge as every human body is unique.

CONVENTIONAL MEDICINE

Excellent as it may be for treating serious illness, modern medicine does not take individuality into account and tries to provide a ‘one size fits all’ bullet to fix common ailments. Very often it does not investigate the actual root cause of a condition but simply tries to relieve the symptoms. Doctors seem to have become reliant on pharmaceutical medicines as a first recourse as they do not have the time to fully investigate a patient’s symptoms, lifestyle and diet. Drugs can do much collateral harm, especially antidepressants, painkillers and sleeping tablets, and should, in my view, only be the ‘alternative’ treatment when dietary and lifestyle changes have not worked. Likewise, antibiotics should only ever be used when the body is unable to cope with an infection, and not just in case an infection might develop; antibiotics compromise the body’s natural flora and fauna and this can lead to many secondary health problems going forward. I believe patients should be given the choice of healing themselves with natural foods as these have multiple benefits, not just for the particular ailment being treated, whereas drugs can cause multiple adverse reactions.

The profit-led pharmaceutical industry inevitably carries out serious scientific research only on medicines that will bring in the highest returns, and certainly in the past there have been cases where they have not presented adverse test results to the doctors who are prescribing these medications. The patient may then not be made aware of the risks. In addition and more recently, ‘medications’ have been developed for people who are not actually ill but who are told that taking a tablet for the rest of their lives will ‘protect from future illness’, as in the case of cholesterol-lowering medications. How can

such a statement be uniformly true when human beings are so individually unique? Furthermore, in this particular case, there is much research that shows high cholesterol is a marker for other health problems (such as hypothyroidism, p 181) rather than being the problem that in itself needs treating. This idea of 'protection' is a clever manipulation of people's fears while actually causing immeasurable and unnecessary suffering to many from the 'side effects' of such drugs. The elderly are prime targets because, as their bodies age and break down, they think they have no choice but to take medications as they are not provided with the information they need about how foods and drinks can affect their bodies. I hope this book can address this lack of knowledge.

SIDE EFFECTS

The debilitating side effects of ingesting some medications over long periods are generally ignored until hundreds of people show signs of damage. In other words, people are being used as 'guinea pigs' to test some drugs for free. Side effect is a strange term to use for something that has actually induced a secondary condition while supposedly 'fixing' the symptom of another. (A little like that other ominous term 'friendly fire'.) And then, instead of removing the drug which is causing the side effect, even more drugs are prescribed to 'fix' the symptoms of the secondary ailment. This may add further to the drug-induced damage that is being caused to the body (especially to the liver) of the recipient of these powerful medications – and still the root cause of why they became ill in the first place remains unresolved. Scientists have estimated that in 50% of human ailments, the root cause is the diet. It is very probable that many cases are also drug induced.

Synthetic tablets and capsules, injections and absorption of powerful chemicals through the skin, eyes, nose and lungs, bypass the body's natural defences, which would otherwise quickly flush them out through vomiting, sweating profusely to try to expel them through the skin, or releasing extra fluids into the intestines to quickly flush poisons out through the anus (by way of diarrhoea) before they can do harm. This natural reaction to toxins explains why the side effects of some medications and chemical food additives are diarrhoea, fever, nausea, pain and vomiting. The body is rejecting and trying to expel the poison being forced into it. Some of these toxins are absorbed and stored in various places within the body, including the bones and the brain, and put unnecessary strain on the liver and kidneys. This can then cause serious problems many years later.

NATURE CURES

Nature, on the other hand, works harmoniously on a molecular level which scientists do not yet fully comprehend due to the complexity of reactions that take place between inorganic and organic elements and microbes in a world too small to be seen by the naked eye. The human machine automatically takes the elements it needs from natural foods and expels the rest. Interfering in this process can cause unforeseen problems and will continue to do so until humans have learned all there is to know about the millions of molecular processes taking place deep within the body.

VESICLES

‘Vesicles’ are tiny bubbles of fat which act as the living cell’s internal shipping service, transporting their goods to the exact destination requiring those goods. They carry material such as enzymes, neurotransmitters and hormones around the body and they can also fuse with the outer surface of the cell and release their contents into the wider body. They are crucial for the way the brain communicates with the rest of the body, the release of hormones and the correct functionality of the immune system. Without this precise organisation the cell would lapse into chaos.

When the vesicle system is defective it can be due to brain and glandular disorders, interference by synthetic chemicals or simply missing nutrients required for the chain of commands to take place. This is why consuming the correct nutrients at the right time is so vital. If any substances are missing in the diet and cannot be manufactured by the body, or if stores become depleted, these miniscule processes begin to fail. This then affects the more complex functions of organs, such as the liver, which cleans waste, excess fats and toxins from the blood. Then, like a ‘domino effect’, the system starts to break down, allowing pathogenic (disease-causing) bacteria, viruses and fungi to invade and proliferate, in turn causing further damage to the already weakened machine.

TOXIC SOUP

In order to remain healthy and disease-free, it is far better to try to avoid synthetic chemicals as much as possible and thereby retain the precise balance of processes constantly taking place within the human body. When this is not possible it is advisable to flush the body regularly through the ingestion of naturally cleansing plant foods. See *Cleanse and Detoxify* p 1041.

Intestinal flora within the human body have vital purposes which are often disrupted by regular over-exposure to toxic substances. Living in an increasingly ‘toxic soup’ and ingesting pesticides, fungicides, herbicides, pollutants, powerful medications, recreational drugs, alcohol and synthetic chemical food additives, as well as the daily use of toxin-laden cosmetics, chemical cleaning products and tobacco (which are absorbed through the skin and breathed in through the lungs), all upset the fragile balance of these microbes and this allows pathogenic bacteria, yeasts and viruses to invade, take hold and proliferate. Eliminating the use of harsh chemicals in the home and avoiding synthetic cosmetics will reduce toxin build-up in the system. For natural alternatives see *Natural Household Cleaners* p 1049.

SELF-AWARENESS

The body is also at a disadvantage when poor-quality food has been ingested for a long period, especially if fast food has been over-consumed, which often contains too much salt, trans-fats and sugar or cheap refined foods with most of the health-giving nutrients stripped out. It is simply a case of moderation and balance. Over-consumption of any one substance, even water, can be poisonous and adversely affect the balance of nutrients and intestinal flora (micro-organisms in the intestines which aid digestion).

It can be very difficult to cut down or abstain from any unhealthy substance, the consumption of which has become a habit, be it alcohol, caffeine, drugs, sugar, salt, fried fatty foods or smoking tobacco. This is not helped by the easy availability of these substances or the aggressive marketing ploys of the producers and manufacturers. However, being informed about the dangers of constantly ingesting these substances can help to provide the strength of mind to protect the body (and those of loved ones) and will result in a longer and far more comfortable and ailment-free life and is the reason this book was written.

SECTION II

A to Z OF HAZARDS TO HUMAN HEALTH

- ACRYLAMIDE, 286
 ADDICTIONS, 288
 AGAVE NECTAR AND CORN SYRUP, 310
 AIR FRESHENERS, 311
 ALCOHOL, 311
 ALLERGIES, 315
 ANIMALS, 318
 ART AND CRAFT PRODUCTS, 320
 ARTIFICIAL SWEETENERS, 322
 BACTERIA, 325
 BROMINATED VEGETABLE OIL, 339
 CANCER, 340
 CHLORINE, 362
 CLEANING PRODUCTS, 362
 COFFEE, 363
 COSMETICS, 366
 DEODORANTS, 367
 DISTILLED WATER, 367
 DRUGS – PRESCRIBED AND RECREATIONAL, 368
 FAT-FREE AND LOW-FAT PRODUCTS, 401
 FEMALE GENITAL MUTILATION, 402
 FLAME-RETARDANT CHEMICALS, 403
 FOOD ADDITIVES, 404
 FRUIT JUICE, 413
 FUNGI, MOULDS AND YEASTS, 414
 HAIR DYE, 422
 HEAVY METALS, 423
 HEREDITARY CONDITIONS AND CONCEPTION, 428
 INSECT BITES, 429
 LAXATIVE ABUSE, 437
 LITHIUM BUTTON BATTERIES, 438
 MALNUTRITION, 439
 MESH IMPLANTS, 443
 MICROWAVE MYTHS, 444
 MILK, LACTOSE AND CASEIN, 445
 NITRATES AND NITRITES, 448
 NON-STICK AND STAIN-RESISTANT MATERIALS, 448
 OBESITY, 449
 PAINT, 465
 PARASITES, 466
 PESTICIDES, FUNGICIDES, HERBICIDES, FERTILISERS AND GM CROPS, 496
 PHYTIC ACID, 499
 PLASTICS, 500
 POLLUTION, 501
 PROCESSED AND REFINED FOODS, 502
 RADIATION, 502
 SALT, 503
 SEEDS, STONES AND PIPS, 506
 SEXUALLY TRANSMITTED DISEASES, 507
 SPONGES, 513
 SUGAR, 513
 SUPPLEMENTS, 516
 TALCUM POWDER, 518
 TATTOOS, 518
 TEA BAGS AND COFFEE FILTERS, 518
 TIN CANS, 519
 TOBACCO, 519
 TRICLOSAN ANTIBACTERIAL AGENT, 529
 TRIGLYCERIDES, 530
 TRIMETHYLAMINE N-OXIDE, 530
 VIRUSES, 531
 WAXED FRUIT AND VEGETABLES, 545
 WHEAT AND GLUTEN, 545
 WHICH FOODS TO AVOID AND WHEN 547

'Primum non nocerum' (First do no harm)

Hippocrates 460 BC

There are many ways to improve health with a little knowledge of what could be causing the symptoms. By eliminating that which can do harm, the body has the chance to recover from most ailments and disorders. It is important to remember that not taking care of one's health and allowing toxic overload of the body, or failing to eat nutritious foods – all of which can leave the body open to infections – means the continuation of the spread of disease and suffering to others.

The following are just some of the daily hazards to the human body that can be avoided. Some may take a little effort, whilst others mean a complete change of lifestyle and habits. However, if good health, vitality and longevity are desired, then such change must be worthwhile.

ACRYLAMIDE

Acrylamide is a potentially toxic, cancer-causing substance that can be naturally present in uncooked, raw foods in very small amounts. For this substance to pose a risk of toxicity or cancer, however, it must be present in much larger amounts and these larger amounts do not occur unless foods have been heat-treated during processing or cooking.

There are many non-dietary sources of exposure to this substance, such as cigarette smoke (about one or two micrograms per cigarette) and cosmetics. Acrylamide is also released into the air during many different manufacturing processes, including the making of asphalt, construction adhesives, dyes, paper, petroleum, photographic film and varnishes.

Acrylamide is currently classified as a *probable* human carcinogen. It has also been shown to be a neurotoxin that can damage nervous-system function; it most likely does so by disrupting the signal that gets sent by nitric oxide at the onset of the nerve-firing process. The neurotoxin and probable cancer-causing aspects of acrylamide make it clear that humans should not be exposed to excess amounts of acrylamide from any source.

In food, acrylamide can be formed when amino acids (the building blocks of proteins) interact with sugars in the presence of heat. Many different kinds of sugars and many different amino acids can interact in this way. However, one particular amino acid, **asparagine**, has a far greater tendency to do this than any other amino acid.

The list of amino acids below shows the level of acrylamide formation after combination with sugar and the application of heat. **NOTE:** ppb = parts per billion.

Alanine	50 ppb
Asparagine	9270 ppb
Aspartic acid	50 ppb
Cysteine	50 ppb
Glutamine	156 ppb
Lysine	50 ppb
Methionine	50 ppb
Threonine	50 ppb

It is also possible to form acrylamide without the presence of sugars. When fats in food are oxidised, unique 3-carbon molecules (including acrylic acid and acrolein) can be formed. In the presence of heat, these 3-carbon molecules can interact with asparagine to form acrylamide. It's common for fried foods to form acrylamide in this way, even when there is little sugar found in the foods, no sugar added during frying and little breakdown of starch into sugar.

Higher levels of acrylamide have been found in asparagus baked at 220°C (428°F) for five minutes. The levels fell into the 200 to 250 ppb range. Other foods with significant acrylamide levels are listed below. **NOTE:** ppb = parts per billion; ppm = parts per million, that is, 1000 times greater than ppb levels.

Broccoli, tinned	235 ppb
Biscuits	0.995 ppm
Chips (French fries)	1.325 ppm
Cocoa	0.909 ppm
Coffee	300 ppb
Dehydrated onion soup mix	1.184 ppm
Grain-based coffee substitutes	5.399 ppm
Potato crisps	9270 ppb
Toasted wheat cereals	1.057 ppm

Foods must contain at least minimal amounts of the amino acid asparagine in order for substantial amounts of acrylamide to be formed. However, the amount of acrylamide formed cannot be predicted based solely on the amount of asparagine found in a food, as other factors are involved in the process. When all factors for forming acrylamide are present, it takes temperatures of approximately 121°C (250°F) for the formation of acrylamide in most foods. Acrylamide formation may peak in temperature ranges commonly used for roasting 121–191°C (250–375°F).

Formation of acrylamide occurs in green tea and coffee beans when roasted at these temperatures. The toasting of wheat bread (also commonly done within this temperature range) has also been shown to increase acrylamide formation. A temperature range of 163–191°C (325–375°F) is also frequently used for the deep frying in oil of French fries and potato crisps. Once again, it is important to realise that the heating of foods at temperatures between 121 and 191°C (250–375°F) does not automatically mean that acrylamide is being formed in the food. It takes a combination of the amino acid asparagine together with a form of sugar, or the oxidation of fat into smaller carbon molecules, or both, to result in substantial formation of acrylamide.

Acrylamide levels are high in certain canned black olives depending on the specific handling, storage, processing (especially preservation and darkening methods) and heating steps taken. Olive oil, however, appears not to undergo this process so shows no sign of dangerous levels of acrylamide.

The amount of asparagine in asparagus can increase from 41 to 820 micromoles per gram (dry weight) over the course of post-harvest storage. Only five days of storage are required for those much higher levels of asparagine to be formed in the asparagus. Even though higher

levels of acrylamide do not automatically form when asparagine is present in a food and, even though asparagus is not a red flag food when it comes to acrylamide, this relationship suggests that one of the building blocks for acrylamide from asparagine may be more limited when food is cooked in its freshest form.

The highest risk foods for acrylamide exposure fall into three basic categories:

1. Baked snack foods containing wheat and sugar, including biscuits and crackers.
2. Fried, processed foods like potato crisps, chips and French fries.
3. Processed foods involving toasted grains, such as toasted wheat cereals and roasted grain-based coffee substitutes. Roasted coffee and cocoa beans (and the chocolate made from them), some dehydrated soup mixes and some canned black pitted olives can also fall into this higher risk category.

ACRYLAMIDE AND THE HUMAN BODY

Once ingested, acrylamide can be detoxified in the body if it is processed through the cytochrome P450 enzyme system and converted into glycidamide, or if it is hooked together with the sulphur-containing antioxidant molecule called glutathione. Even though our metabolic pathways can help to detoxify acrylamide, humans can still overload the detoxifying capability of these pathways and put themselves at health risk from excess exposure to this substance.

NATURE CURES FOR ACRYLAMIDE

In order to lower the risk of problems from acrylamide, there must be plenty of **glutathione** (p 912) on hand in our

SECTION III

A to Z OF NATURE CURES AND SAFEGUARDS

- A-Z OF FOODS AND DERIVATIVES (p 559)
- A-Z OF ORGANIC NUTRIENTS (p 859)
- A-Z OF MINERALS (p 991)
- BRINE PICKLING (p 1060)
- BUTTER versus MARGARINE (p 1036)
- CLEANSE AND DETOXIFY (p 1041)
- HOUSEHOLD CLEANERS (p 1048)
- MAKE YOUR OWN NATURAL PRODUCTS (p 1054)
- NATURAL FOODS FOR THE BODY (p 1084)
- NATURE'S COLOUR CODES (p 1033)
- DAILY ESSENTIALS (p 1090)
- NATURE CURES HIGH-NUTRIENT DIET PLAN (p 1092)
- NATURE CURES PAIN AND INFLAMMATION (p 1078)
- RAW JUICE THERAPY AND RECIPES (p 1068)
- RECIPES FOR HIGH NUTRITION (p 1098)
- SPROUTING ON YOUR WINDOW SILL (p 1064)
- TOP TIPS TO PREVENT ILL HEALTH (p 1104)

'Let food be thy medicine and medicine thy food'

Hippocrates 460 BC

There is much research to indicate it is possible to protect against infections and disease and live healthily, enjoying food, with a little effort and planning. Bad habits may be hard to break but not impossible. Tastes can be developed and obtained through repetition and, if the eye, nose and tongue are pleased, then the body will be more than happy to accept healthier alternatives. The practice of eating plenty of processed meat at every meal with just one or two vegetables has damaged the health of millions in the developed world. Allergies (p 315), cancers (p 340), diabetes type 2 (p 21), obesity (p 449) and a multitude of other ailments can mostly be attributed to bad diet. (When diabetes is mentioned in this section it refers to diabetes type 2 unless it specifically states diabetes type 1, or insulin-dependent diabetes. This latter is an early onset autoimmune disease that natural remedies cannot help to resolve whereas late onset diabetes type 2 is usually brought about by a poor diet, inactivity and weight gain and can be remedied by adding specific natural foods as well as changing the diet and lifestyle.)

The advice of consuming 'five a day' fruit and vegetables is a good start for overall health, but simplistic because all the different colours of fruit and vegetables provide an amazing array of nutrients and are equally important. To support good health there is no point eating just one colour of fruit or vegetable every day (see Nature's Colour Codes on p 1033).

It is worth taking a little time to prepare nutritious meals and create home-made toxin-free cleaning products and use food, herbs and spices as remedies that will not cause the adverse side effects many pharmaceutical drugs do. Many disorders and nutrient deficiencies are common in those who take medications yet never get diagnosed, sometimes for years (see Medications p 368).

CONVENTIONAL TREATMENT

Conventional medicine states that there is no known cure for many diseases and in these cases can offer medications that only treat the symptoms, exposing patients to side effects that may make their quality of life progressively worse. Symptoms may in fact come and go because the cells are constantly trying to repair damage and fighting for survival. Cells may strengthen to resume normal functioning when they are provided with the nutrients they need. Bone disorders, for instance, may get worse because standard treatments suppress the pain that is protective.

Conventional medicine is typically designed to treat symptoms, mask pain and replace worn out body parts, rather than to strengthen the cells to restore their function. However, pain and inflammation are an important part of the body's self-protection mechanism. Pain is meant to slow us down in order to give the body a chance to recuperate, to conserve energy and to stop us from pushing ourselves further over the limit, damaging the body even more. Painkillers, on the other hand, enable us to carry on until the body eventually breaks down.

Consequently, while conventional medicine may be essential and life-saving at times, we need to be aware of its limitations and work hard not to need it in the first place. Switch to organic, fresh, additive-free, non-processed foods (i.e. not packets, tinned or ready-made meals) and notice the difference in taste, and feel the benefits of the health-giving nutrients within one month. (See Pesticides p 496 for why to go organic.)

To become very healthy, lose weight and recover from many conditions, be ruthless and remove the following from the kitchen cupboards and refrigerator:

- All foods with unnatural additives, processed and refined food, ready meals, pizzas, biscuits, cakes, sweet or salty snacks, crisps and fizzy pop.
- Animal fats: Use nut, seed and plant oils, coconut milk and probiotic yoghurt instead.
- Butter and margarine: Place a tub of pure virgin olive oil in the freezer overnight. Then keep in the refrigerator and use instead. Add garlic, dried seaweed and herbs like dill and chives to add flavour and additional nutrients. Always use cold-pressed virgin oils because the heat process that cooking oils go through creates trans-fats which are harmful.
- Cream and ice cream: Use plain yoghurt with live cultures and coconut milk instead. Cream and ice cream contain unhealthy saturated fats and other additives like sugar and thickeners.
- Sugar: Use honey, parsnips, sweet potato, swede, berries, bananas, mango, peaches and dried fruits to sweeten. White granulated sugar has had all the nutrients stripped from it.
- Table salt: Use unrefined sea salt, Himalayan salt crystals, spices and algae or seaweed instead.

Table salt has had all the nutritional minerals removed during refining.

- White flour, white rice and processed cereals: Use whole grains plus amaranth, buckwheat, quinoa or millet (p 848) Instead, as refined white grains and cereals have had their nutritious parts stripped out and are then often bleached white using chlorine.

FOR NATURAL HEALTH AND VITALITY

- Consume at least one leafy vegetable and one root vegetable every day.
- Consume more eggs, legumes, nuts, seafood and seeds instead of meat for protein.
- Consume one of each of the six colours of fruit and vegetables per day (see Nature's Colour Codes p 1033).
- Consume one tablespoon of psyllium husks daily in a large tumbler of water followed by another glass of water. Do this every morning for a healthy digestive and excretory system. This is especially useful for anyone suffering from pathogenic bacterial or yeast overgrowth in the intestines, Crohn's disease, constipation, diarrhoea, irritable bowel syndrome (IBS) or any other related bowel conditions.
- Consume more legumes and grains, like amaranth, oats, barley, beans, buckwheat, lentils, millet, quinoa, rice (black, red and brown) and teff instead of potatoes with meals. Try mixing them together as a side dish. This will then provide many more nutrients, especially amino acids, plus fibre and starch which feed the beneficial bacteria in the intestines.
- Fill jars with dried apricots, berries, dates, figs, nuts, raisins and seeds and consume these daily instead of unhealthy snacks. Take some in small containers when going out to stop the habit of buying unhealthy snacks.
- Invest in an electric blender to make thick multi-vegetable soup starters and fruit 'smoothie' desserts and breakfasts.
- Invest in a good juicer (at least 900 watts). (See healthy and medicinal recipes for Raw Juice Therapy p 1068.)
- Make home-made muesli with organic whole grains, nuts, seeds, berries, dried and fresh fruit and add honey, cinnamon and nutmeg, then consume with live probiotic yoghurt. This high-fibre vitamin-and-mineral-packed starter will provide plenty of energy until lunchtime. Whole grains are nutritious, filling and stave off hunger longer than other foods.
- Make oat, quinoa and nut flapjacks with honey and berries for snacks.
- Take one krill oil or cod liver oil capsule daily for optimum health.
- Try Micro Diet Sprouting for a highly nutritious way of getting all the nutrients needed for good health. To find out how to grow sprouts easily in a jar on the window sill, with just a daily rinse of water, see p 1064.

EXPLANATION OF DIFFERENCES BETWEEN BEANS, BERRIES, GRAINS, LEGUMES, NUTS, PEAS, PULSES AND SEEDS

- Seeds are the small plant (embryonic plant) enclosed in the seed coat.
- ‘Bean’ and ‘pea’ are the terms used to describe the seeds belonging to the legume or *Fabaceae* family and are the seeds or complete young pods of bean plants. Peanuts and cashews are actually legumes as opposed to nuts.
- Berries are fruits that usually grow in clusters which hold the seeds of the plant. Peppercorns are dried berries, excepting Szechaun peppers, which are the dried outer husks of the prickly ash shrub.
- Grains are grass seeds that do not have fruit. They rely mainly on the wind to disperse their seeds and were not designed by nature to be eaten. Some grains and beans are toxic to humans in their raw state.
- Nuts are the hard-shelled dried fruits of plants, except almonds, which are actually the dried seeds.
- A nut has one to two seeds within its shell while beans and peas can have as many as half a dozen in a pod.
- A nut is much harder than a bean or pea, both inside and out. When picked, beans and peas are soft although when subjected to a drying process they then become hard.
- A nut’s seed is not attached to the ovary wall unlike the bean and pea seed.
- Upon maturity nuts do not generally open up like bean and pea pods do.
- Peas are always round in shape whereas beans are oval and kidney shaped.
- Pulses are dried beans and peas.

17

A-Z OF NATURAL FOODS AND DERIVATIVES

A

ABUTA (*Abutta officinalis*)

Abuta grows in the Amazon basin and other humid, tropical areas of the world. It is known as a 'midwife's herb' in South America and is used to treat a variety of women's complaints. It also acts as an antiseptic to the bladder, is a cerebral tonic and works well as an aphrodisiac. It can also be used as an expectorant (expels phlegm), emmenagogue (stimulates blood flow in the pelvic area and uterus) and antipyretic (reduces fever). It is also used to prevent abortion, relieve heavy menstrual bleeding and stop uterine haemorrhages (bleeding). Powdered abuta bark has also been used for menstrual complaints.

AILMENTS ABUTA CAN HELP TO TREAT AND PROTECT AGAINST

- Anaemia p 15.
- Bronchitis p 236.
- Dental pain p 1086.
- Diabetes type 2 p 21.
- Fever p 335.

- Gastric ulcers p 136.
- High cholesterol p 31.
- Infertility p 204.
- Liver disorders p 113.
- Malaria p 432.
- Menstrual cramps p 209.
- Pre- and post-natal pain.
- Respiratory disorders p 235.
- Rheumatism p 53.
- Stomach ulcers p 136.
- Typhoid p 331.
- Urinary system disorders p 271.
- Water retention p 281.

AÇAÍ BERRY (*Euterpe oleracea*, açai palm)

The sudden worldwide demand for acai berries is the result of many expensive marketing campaigns by certain companies making exaggerated claims about this 'newly discovered mysterious super fruit' of the Amazon which 'can increase weight loss and energy and lower cholesterol'. Açai berries have no special health benefit compared with other fruits and there is no proof that they can reduce weight or lower LDL cholesterol, but are netting billions in sales

through network marketing companies and direct retail sales.

Açaí berries are simply a staple food for many economically disadvantaged inhabitants of the lower Amazon region area. Açaí-manioc porridge is quite poor in nutrition but is very filling with a large amount of starch and 25% sugar. Açaí berry delivers around 200 calories per 100 grams, depending on the preparation method. However, the roots, oils and seeds are used as effective medicines as follows.

AILMENTS AÇAÍ OIL, ROOTS AND SEEDS CAN HELP TO TREAT AND PROTECT AGAINST

In Brazilian herbal medicine, the oil of acai is used to treat diarrhoea (p 108); the root for jaundice (p 118); and the seeds for fevers (p 335). In the Peruvian Amazon, toasted crushed açaí berry seeds are used for fever (p 335).

The açaí root is used for the following:

- Diabetes type 2 p 21.
- Haemorrhages p 17.
- Hair loss p 184.
- Hepatitis p 536.
- Jaundice p 118.
- Kidney disease p 271.
- Liver disease p 116.
- Malaria p 432.
- Menstrual pain p 211.
- Muscle pain p 1083.

SIGNIFICANT COMPONENTS IN AÇAÍ OIL, ROOTS AND SEEDS: anthocyanins, cyanidin-3-galactoside, delphinidin, ellagic acid, epicatechin, fibre, ferulic acid, omega-6 and omega-9 fatty acids, petunidin, protein, protocatechuic acid and resveratrol.

VITAMINS: A, B1, B2, B6, C, E and K.

MINERALS: calcium, copper, iron, magnesium, manganese, phosphorus and sulphur.

EXTERNAL USE OF AÇAÍ BERRIES

The grated fruit rind of açaí berries is used as a topical wash for skin ulcers.

ADZUKI BEANS (*Vigna angularis*)

Adzuki beans are small, red beans that originated in China and are also known as aduki or azuki beans. They are usually boiled with sugar and mashed into a sweet red bean paste that is used as a filling in many popular Asian desserts, including ice cream, and in many savoury dishes. Adzuki beans, along with lentils and chickpeas, are a staple of the macrobiotic diet, which calls for the consumption of plenty of fibrous, protein-packed legumes.

Since they are very low in calories and fat, yet high in nutrition, they are ideal for those trying to lose weight. Additionally, they are relatively easy to digest, so they should not cause flatulence (p 104) like other beans do.

SIGNIFICANT COMPONENTS OF ADZUKI BEANS: fibre, protein and starch.

VITAMINS: A, B1, B2, B3, B6, B9, C, E and K.

MINERALS: calcium, copper, iron, magnesium, manganese, phosphorus, potassium, selenium, sodium and zinc.

AGAVE (*Agave schottii*)

Agave nectar (syrup) is produced by the agave plants that grow in the volcanic soils of southern

30

DAILY ESSENTIALS

There are certain nutrients that are required every day. One of the most important foods is fibre – both soluble and insoluble – which is often lacking in the diet and replaced with too much protein. Two or more portions of fibre from fruit, vegetables and whole grains during the day can help to eliminate digestive disorders and cut down the risk of many types of cancer as well as protect the heart.

Try to include everything on the following guide to gain good health and a strengthened immune system. It will also help with weight loss by replacing unhealthy foods with nutrient-rich ones. Never go hungry (unless you are deliberately fasting); just change what is usually eaten as snacks. The following can be taken separately or mixed together in meals or drinks.

WHAT TO CONSUME EVERY DAY

- **Algae** (p 562), will provide the minerals lacking in land-based crops and chelate heavy metals from the body.
- **Apple** (p 571): one per day.
- **Apple-cider vinegar** (see Vinegar, p 840): one tablespoon per day in warm water or added to salads and other dishes.
- **Barley grass powder** (p 583) is one the rare plant foods that contain vitamin B12.
- **Berries** (591): one portion of red, blue or black coloured berries per day.
- **Brewer's yeast** (p 603) from a reliable source can provide many important nutrients (but avoid if herpes is an issue.)
- **Brazil nuts** (p 603): two per day will provide selenium and other minerals.
- **Fermented foods** (p 1060) keep the intestinal flora balanced, consume one per day.
- **Brown rice** (p 792) may take a little longer to cook but is far healthier as it contains the nutrients that are missing in white rice.
- **Citrus fruit** (p 635): at least one should be consumed per day, including the grated zest of half the fruit.
- **Cold-pressed oils**: only, as other oils are heat-treated, which causes them to produce unhealthy trans fats.
- **Eggs** (p 660) are rich in many beneficial nutrients and one should be consumed three or four times a week.
- Fat-soluble nutrients from vegetables, such as carotenoids, need a little oil to be absorbed. Always consume foods like carrots and tomatoes with some cold-pressed oil or avocado, fish, nuts or seeds.
- **Fibre** (p 907) is vital to keep the intestinal bacteria balanced. Beans and whole grains provide fibre, as do fruit and vegetables when the skin is included.
- **Flax seeds** (p 669) can help balance hormones, protect the heart and provide vitamin E as well as many other nutrients.
- **Fruit**: As well as the berries and the citrus fruit mentioned above, one other fruit

- should also be consumed every day.
- **Garlic** (p 671): Consume three cloves per day. Allow garlic to sit for 10 minutes after chopping or crushing to allow the production of allicin to take place.
 - **Green tea** (p 683): Drink three cups per day. Add herbs and spices (listed below) plus the juice of half a lemon, and one teaspoon of honey if desired. Lemon increases the benefits of green and herbal teas.
 - **Hemp seeds** (p 686) are rich in many essential nutrients and the only food which will provide the correct balance of omega-3 and omega-6 fatty acids.
 - **Herbs and spices** (p 813): Use these liberally every day in meals and as teas because they have powerful anti-inflammatory and cleansing abilities.
 - **Himalayan salt crystals** (p 799): Grind these and use in place of table salt which has had all the essential minerals stripped out.
 - Hot, peppery foods, such as chilli peppers, garlic and horseradish, contain many properties that benefit the entire system.
 - **Krill oil** (see Linolenic acid, p 924), one capsule per day, will provide the essential omega-3 fatty acids and vitamin D.
 - **Mineral water** (p 843): Drink, and cook with, bottled-at-source mineral water which will provide many minerals lacking in tap water and avoids any fluoride and the chlorine often added to tap water.
 - **Oily fish** (p 667) should be consumed three times a week, especially during the winter months when the sun is not strong, to ensure vitamin B12 and vitamin D levels are sufficient. Always include alfalfa, asparagus, avocado, chlorella, coriander, dulse, Irish moss, kelp, seaweed or spirulina with the meal to ensure that mercury, which ocean fish are often contaminated with, is eliminated from the system; sulphur-rich foods (p 1028) can also help to remove heavy metals like mercury from the system.
 - **Peppercorns** (p 760): Sprinkle ground peppercorns of all colours liberally on all meals as this helps the transportation of nutrients within the body.
 - **Protein** (p 944): Alternate protein sources between beans, eggs, fish, nuts and meat and only consume a portion the size of your clenched fist per day.
 - **Pumpkin seeds** (p 778) and sunflower seeds (p 822) provide many essential nutrients and can be added to sandwiches, rice, salads and other dishes every day.
 - **Psyllium husks** (p 777): One tablespoon per day with a large tumbler of bottled mineral water will cleanse the colon and relieve most digestive issues.
 - **Sprouts**: Sprouting seeds, beans and grains, especially alfalfa seeds (p 1064), is a way to gain the best nutritional value.
 - **Turmeric** (p 836): Half a teaspoon per day can be sprinkled on brown rice, eggs and vegetables or added to curries, chillies and other dishes.
 - **Vegetables**: One of all six colours of vegetable (p 1033) should be consumed as often as possible (every day when there are any health issues). Always consume the skins whenever possible as the important nutrients and fibre reside there. Root vegetables are important and should be a regular part of the diet. Steam and bake vegetables that require cooking.
 - **Vitamin C** (p 981) and an equal amount of **vitamin E** (p 985) in natural foods (not supplements) should be consumed every day as they need to be balanced due to their opposite effects on many minerals.
 - **Greens**: Consume a generous portion of at least one green leafy vegetable every day. Rocket (p 793), spinach (p 813) and watercress (p 844) are the most beneficial.
 - **Walnuts** (p 841): Consuming five walnut halves per day will provide nutrients that can protect the bones, heart and arteries and benefit the brain.