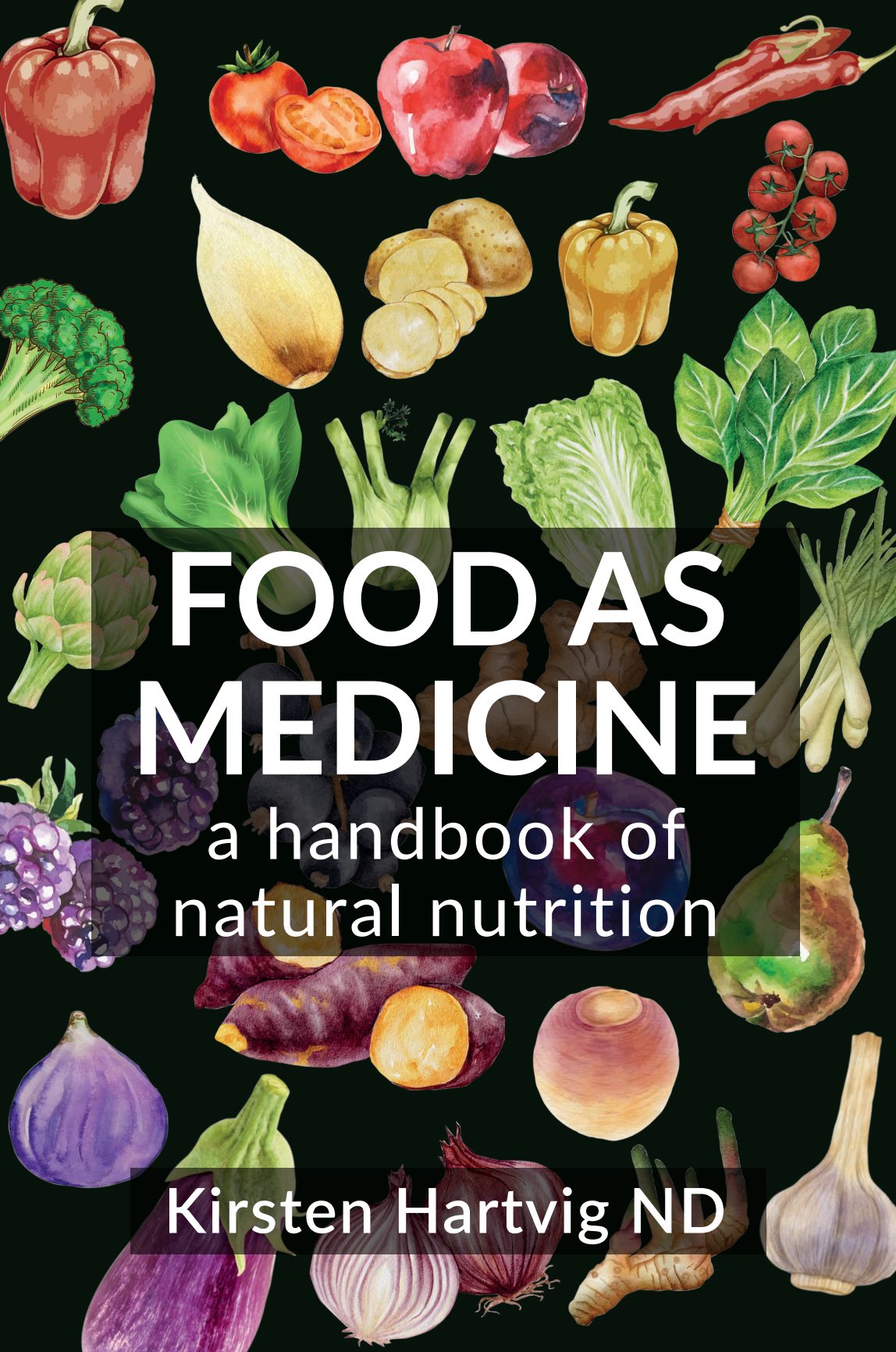
FOOD AS MEDICINE
a handbook of natural nutrition
Kirsten Hartvig ND

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For Tessa

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INTRODUCTION

When talking about using food as medicine, it is tempting to make up a list of foods and say what each of them are good for. And, as a herbalist and naturopath, I am often asked "have you got something for [insert complaint]?" But, as you will see on the following pages, health and disease are much more complex than that. Sometimes taking something away is more powerful and helpful than anything you could add, and any one food or herb or supplement can rarely cure a health problem that can have many different physical, emotional, mental, social, and spiritual aspects.

When you add to that the complexity of nutrition, nourishment, and nutrients, it is near impossible to work out what is good for what and why.

Then there's the case of whether you actually absorb any of the nutrients you consume. For example, iron absorption is inhibited by phytate and enhanced by vitamin C. Phytate, or phytic acid (aka hexaphosphate or IP6) is found in ungerminated seeds. It is a phosphate energy store providing the germinating seed the energy to grow. It is also found in animal, and therefore also human, cells where it is thought to act as a co-factor in DNA repair and in the production of the mRNA that is needed to make proteins. Humans and animals don't absorb phytate from their diet; they make their own! So, should you avoid phytates?

Phytates are found in the outer layers of some of the healthiest foods on the planet, where most vitamins and other micronutrients also occur in the highest concentrations. So why do people claim they are bad for you and call phytate an "antinutrient"? Because they say that phytate binds other nutrients (such as calcium, zinc, and iron) and prevents them from being absorbed. But that is not entirely true: although phytates inhibit absorption, it is only by a few percent. One study has shown that 13% of magnesium and 23% of zinc was absorbed in the presence of phytate in the same meal, as opposed to 30% without. Not a complete block, then, and absorption is dependent on many other factors such as stress and acidity, for example.

On the other hand, phytates also bring important health benefits to our gut biome and immune system: they inhibit the growth and spread of cancer cells; they help prevent absorption of heavy metals and help the body excrete them; they act as antioxidants by binding to minerals in the gut; they help protect against kidney stones by preventing calcification in body fluids; they interact with the natural gut bacteria to produce inositol, which helps the liver process fats, and lowers blood cholesterol and blood sugar.

Furthermore, foods high in phytate (aka phytic acid), such as beans, lentils, whole grains, nuts, and seeds, are also some of the most nutritious foods, high in micronutrients, antioxidants, and fibre, so it doesn't make sense to avoid it!

Or does it? People with malabsorption problems or at high risk of nutritional deficiencies or malnutrition should reduce their phytic acid intake by sprouting, soaking, fermenting, cooking, or baking phytate foods to increase the availability of their mineral content. Cooking phytate foods can increase their absorbability by 90%.

Eating phytate foods together with mineral-absorbing enhancers such as garlic and onion or foods high in vitamin C can also balance out the negative phytate effect while keeping its positive traits. So there is a strong case that rather than eating less phytate, you should eat more fresh fruit and onions and garlic, which have many other added health benefits!

This is just one example of the complexity of nutrition. It is my hope that by using this book as a reference, you will find your own way through this minefield and form your own opinion on what is good for you. Most of all, I hope it will empower you to enjoy eating plant foods and see them for what they are: the basis of all life on earth.

WHAT IS FOOD?

Food is made up of various substances, not all of which provide nutrition. Nutrients are substances that provide energy and raw material for the body. They enable living tissue to be built up and broken down.

There are five main categories of nutrients: protein, fat, carbohydrate, vitamins, and minerals. Besides nutrients, there may be other substances in food that have important effects on health, such as fibre and additives.

Whatever your dietary persuasion, it is important to remember that all the food we eat on earth can be traced back to plants. The issue is not what style of eating suits your particular type. Food is fundamentally much simpler than that: plants trap solar energy via photosynthesis and make it into a form of energy we can use. Green leaves are like solar panels, in this case converting light into carbs, which can then be used as they are, be gathered and stored as starch, or converted into fats and oils. It is a miraculous process where water drawn up from the earth meets carbon dioxide from the air and produces carbohydrates and oxygen. But that is another story we will explore more later.

Like people, plants also use protein to build structure. Proteins themselves are made from a combination of amino acids. Every structure and function of living organisms is made possible through the existence of amino acids. They are not only building blocks for proteins but also cell

signalling molecules, and gene expression regulators. And some of them are responsible for maintenance, growth, reproduction, and immunity. Amino acids are also ultimately made by plants. They are compounds of carbon, hydrogen, oxygen, and nitrogen. They are the major nitrogen-containing compounds of plants. Plants are able to synthesise all the 20 amino acids used in the protein "alphabet" to create a multitude of proteins. The enzymes involved in the synthesis of the "essential" amino acids are normally located in leaves or roots and seeds.

Plants, fungi, microalgae, and microbiota also supply the micronutrients we need:

Vitamin D, for example, which, like carbohydrates, is created in response to exposure to sunlight but this time in animals, fungi, yeast, lichen, and planktonic microalgae at the base of the food chain. The presence of vitamin D in microalgae suggests that it may also be possible to find it in plants. Fur and feathers prevent sunlight from reaching the skin but in this case, sunlight interacts with the oil animals and birds produce to impregnate their fur and feathers. Sunlight interacts with the oil and produces vitamin D, which the birds and animals then ingest when they groom themselves.

Vitamin B12 is synthesised exclusively by aerobic and anaerobic fermenting soil microbiota (notably bacteria and archaea) that live in symbiotic relationships with plant roots, and it is also found naturally in fermented soya products (such as tempeh), algae and seaweeds (such as nori or laver). Although it is stored in the animal tissues we eat, it is not produced by animals.

The point I am making is that ALL the nutrients we need come from plants and microorganisms, so-called lower lifeforms at the bottom of the food chain. We may choose to let other species higher up the food chain do some of the digestion for us but the higher up the chain we are, the more vulnerable we become as only 10% of calories are passed on to the next link in the chain, but as much as 90% of the toxins.

In naturopathy and natural nutrition, we endeavour to eat food and nutrients as close to their original natural state as possible, as nature intended, and it therefore seems logical to cut out the middleman and do the digestion ourselves, right from the start. That way, it is much easier to be in control of what and how much we eat.

Were it only that simple, then many lifestyle problems would be easy to deal with. Imagine you only eat food direct from nature with as little preparation as possible, as people must have done back in the Stone Age, and as "primitive" people still do. Then your diet would consist mainly

of the foods that are most readily available—greens, roots, fruits, and fungi. Nuts, seeds, and grains would be harder to come by—imagine if you had to grow, harvest, and prepare the grain from scratch for each piece of bread you were eating. Using vegetable oils would also be quite cumbersome if you had to pick, shell, and press the nuts and seeds yourself. Animal products would also be hard work—remember you'd have to feed the animals, as well as get them pregnant, milk your cow, and churn your butter. And how about the whole slaughtering process? Eggs might seem an easy option, but you'd have to feed the chickens through the winter too. With what? The grain you grew in the summer? But weren't you using that to make bread? Just imagine the effort that would go into making a simple cup of coffee with a pain-au-chocolat. Would you even know where to start? I wouldn't—imagine having to go to South America for the beans first, getting back in time to sow your wheat for the dough. Once you had all the ingredients, you'd have to roast the coffee beans, then work out how to make chocolate and pastry (you'd need a cow or a coconut too to get the fat to mix in the layers). I suspect you'd need some sugar cane or turnip too and find out how to refine it into a usable form.

To make it as easy as possible, let's presume you'd want your coffee black, saving the milk to make the fat for the pastry. When you'd got all the ingredients, you'd be faced with the enormity of the task it is to make pastry for the pain-au-chocolat! I don't know if you've ever tried it? It takes all day, as well as considerable skill!

Putting the oven on, now where is your source of heat? A bonfire underneath? Remember, there were no electricity supply or power stations, oil or gas in Palaeolithic times.

So, of course I'm not suggesting we go back to times without modern creature comforts or coffee and pain-au-chocolat. What I would like to suggest is that we don't copy the humans that roamed the earth in those days—but rather put the emphasis on the essential lifeforms that were there then and had been there for millions of years already, not only surviving but also forming the basis for all other lifeforms: plants and microorganisms!

If you want to eat a paleo diet, therefore, eat plants and lichens, seaweeds and algae. There is no real and nutritionally meaningful difference between eating a fish, bird or animal that has absorbed the micronutrients we need from plants and microorganisms in their tissues and thus passing them onto us; or cutting out the middleman and eating the nutrients directly as a food or supplement. So why don't we?

WHY DO WE EAT?

Have you ever asked yourself that question? Everyone knows that we eat to satisfy hunger and nourish the body, but if it were that simple, our diet could be very simple and unrefined too. But think of your relationships—business or personal—and how important it can be to initiate or maintain relationships over food and drinks. Or how you can demonstrate the nature and extent of your relationships by your food choices…

Food also provides a focus for communal activities. We serve food to express love and caring, to symbolise emotional experiences, to express moral sentiments and individuality, and to separate ourselves from a group, or demonstrate we belong to a group!

When life is challenging, we eat to cope with psychological and emotional stress, or we eat to reward or punish ourselves, and certain meals and foods are served to signify social status, to bolster self-esteem and gain recognition. Food or denial of food can also be used to wield political or economic power, with the scarcity of popular or vital foods being used to persuade populations in one direction or the other. In that sense, food can be used to represent wealth and security too.

The point is, that since there are so many good and bad reasons why people eat, dieting and eating for health is much more complex than it would seem on the surface.

The real question is: who is in charge? If it is you, then a good starting point is to get to know what the foods you eat are made of, and what the consequences of excess and deficiency of any particular nutrient in your diet might be. This will enable you to choose foods to remedy nutritional deficiencies and imbalances, and to develop dietary strategies to help in the management of common health problems.

PART 1

NUTRITION

CHAPTER 1

The five basic nutrients

To maintain normal function, the body requires adequate intakes of the following:

1. Water—the most important basic nutrient! Drinking enough water is as important as eating enough good food. The body needs water to maintain blood flow, to produce secretions, and to perform metabolic reactions.
2. Energy—energy for life comes from the sugars, starches, and oils that are made by plants from sunlight, air, and water. These are then eaten by us directly as plant-based foods, or indirectly as animal-based foods.
3. Vitamins—vitamins are essential chemical co-workers that help cellular enzymes to regulate metabolic reactions.
4. Minerals—minerals are used to facilitate various electrical and chemical processes.
5. Proteins—these are the "building blocks" from which muscles, blood, hormones, and new tissues are made by the body.

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How to use your diet to heal your body

Countless studies have shown that food plays a major role in promoting health and preventing and treating disease. In her groundbreaking book, Kirsten Hartvig draws on her wealth of knowledge, as well as her many years of hands-on experience as a natural health practitioner and researcher, to provide readers with a unique guide to healthy eating and to the use of food as medicine.

Based on the latest scientific research and theories in the field of nutrition, *Food as Medicine* explores how different foods stimulate the body's natural self-healing ability and provides insight into the role of specific nutrients in treating everyday ailments, aches and pains.

As a unique daily health reference, *Food as Medicine* invites readers to take a fresh look at the nutritional value of the foods they eat, with advice on how to protect oneself against more serious health problems with practical diet and recipe advice.

'This book encapsulates what we need to understand in the modern world: the impactful resurgence of the plant kingdom; food as medicine has sparked a renewed appreciation. We are now finally recognising the profound connection between human health, ecology and agriculture.'
Camilla Fayed, *Farmacy Kitchen*

'Health is a gift to receive daily, with everything we consume. This book has facts and recipes, making it essential reading for all, as food is the foundation to life. Fascinating and informative, from an author with a passion for health and wellbeing.'
Barbara Wilkinson, *The Herb Society*

'This modern reference book on nutrition and dietetics is deeply rooted in Kirsten Hartvig's extensive clinical experience as a consultant naturopath and medical herbalist. In this book you will find a useful, well thought through and inspiring manual on the use of nutrition as a pathway to health. Its deep knowledge is founded on both empirical data and new scientific research. It is completely in tune with nature, and sensitive to the Earth's example and resources.'
Anna Iben & Jesper Hollensberg, *Nordic College of Natural Medicine*

KIRSTEN HARTVIG ND, MNIMH, DipPhyt trained at the School of Herbal Medicine and the College of Naturopathy and Osteopathy. She is an acclaimed nutritionist, medical herbalist, and naturopath, practising at the Healing Garden, Emerson College UK, a natural health centre and biodynamic herb garden with over four hundred species of medicinal plants. She is the author of fourteen books on natural health, and she writes columns for various magazines. Kirsten also teaches Nature Cure diploma courses, and she developed The YouTube channel Herb Hunters, as well as the Herbal Medicine Show on UK Health Radio

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