

1

An introduction to FHT

This chapter introduces the concept of Functional Herbal Therapy (FHT) and gives an overview of its core features. Following a discussion of functional medicine and other relevant movements in modern medicine, the historical roots of FHT are briefly explored (with a fuller exposition in Chapter 4). The basic principles or attributes of FHT are then presented and discussed, together with a brief introduction to the 12 core strategies that form the subject of Chapter 2.

1.1 What is functional medicine?

In 1991, the Institute for Functional Medicine was founded on the basis of the following seven defining characteristics of functional medicine:¹

- 1 patient-centred rather than disease-centred
- 2 systems biology approach: web-like interconnections of physiological factors
- 3 dynamic balance of gene–environment interactions
- 4 personalised, based on biochemical individuality
- 5 promotion of organ reserve and sustained health span
- 6 health as a positive vitality – not merely the absence of disease
- 7 function-focused versus pathology-focused

The functional medicine model for health care is concerned less with what we call the dysfunction or disease, and more about the dynamic processes that resulted in the person's dysfunction.

This quote from Dr Jeffrey Bland underlines that functional medicine is more focused on understanding the causes of a person's health imbalance than with the symptoms that express this imbalance.

Functional medicine aims to address these underlying causes of disease, utilising a systems-orientated approach. It focuses on the whole person rather than just on an isolated set of symptoms. Functional medicine introduces the concept of the "matrix", which explores the patient's history, together with genetic, environmental, and lifestyle factors. It focuses on a patient-centred individualisation of medicine, prescribing remedies to restore the body's physiology (the dynamic interactions that maintain life) to normal functioning.

1.1.1 The P4, precision, and lifestyle medicine movements

There are a few parallel movements in modern medicine that both support and potentially inform the functional medicine approach; specifically, they are P4, precision, and lifestyle medicine.

The vision of a medical approach that is predictive, preventive, personalised, and participatory ("P4") has long been advocated by Leroy Hood and other pioneers of systems medicine.² P4 medicine has emerged from the convergence of three major trends:

- 1 the increasing ability of systems biology and systems medicine to decipher the biological complexity of disease
- 2 our enhanced capabilities for collecting, integrating, storing, analysing, and communicating data and information, including conventional medical histories, clinical tests, and the results of the tools of systems medicine
- 3 consumer access to information and consequent interest in managing our own health

Consumers are driving the transformation of healthcare by these megatrends.

According to the Precision Medicine Initiative, precision (or the older term, personalised) medicine is “an emerging approach for disease treatment and prevention that takes into account individual variability in genes, environment, and lifestyle for each person”.³ This approach allows therapists and researchers to predict more accurately which treatment and prevention strategies for a particular disease will work for which groups of people. It contrasts with the one-size-fits-all approach, in which disease treatment and prevention strategies are developed for the average person, with little consideration for the differences between individuals.⁴

Lifestyle medicine has been defined as “the application of environmental, behavioural, medical, and motivational principles to the management (including self-care and self-management) of lifestyle-related health problems in a clinical and/or public health setting”.⁵ It provides an interdisciplinary, whole-system approach to the prevention and reversal of chronic and lifestyle-related diseases through the modification of the behavioural, social, and environmental drivers. Conditions particularly targeted are those that result from:

- physical inactivity
- poor diet or nutrition
- smoking
- alcohol overconsumption
- chronic stress
- anxiety
- poor or inadequate sleep
- social isolation
- loss of culture and identity
- other influences of society and environment

1.2 Roots of FHT

As Simon Mills writes in Chapter 4 of this book:

One attraction of functional medicine is that its principles resonate so strongly with ancient wisdoms. Indeed, on looking through the history of medicine around the world, it seems that only in modern times have these principles been forgotten.

In terms of FHT, intimations can be seen in an early mid-West American phenomenon: Thomsonian Medicine. Samuel Thomson was a nineteenth-century herbal clinician who rediscovered ancient principles for the treatment of disease that were, for his time, quite profound and revolutionary. Thomson restored the concept of a vital energy, which he described as the natural, self-restorative healing capacity of the body.

Thomson was horrified by the remedies used in “regular physic”, these being dominated by toxic minerals based on mercury, arsenic, antimony, and sulfur. He also saw that there was a fundamental difference in therapeutic approach, with the doctors’ objective being to stop the disease (in reality, the symptoms) at all costs. The main conditions of the day were febrile infections, and the regular approach was to use mineral products and bloodletting to stifle the symptoms and bring the temperature down. (This was before germ theory redefined the objective as eliminating pathogens.)

By contrast, Thomson’s message was simple. Heat is life; fever is the body mobilising this heat; disease (and death) are degrees of cold. Heating thus provides the fundamental principle of healing. Other measures, principally those improving elimination and digestive performance, were often essential supports to this central measure.

His approach, known as Thomsonian Medicine, became based on the following principles:

- 1** Health follows from obeying natural laws.
- 2** Disease is an obstruction or diminution of vital energy.
- 3** It is caused by violation of natural laws.
- 4** Symptoms such as fever are caused by the disease and are not the disease itself.
- 5** Disease has only one basic type of cure: to remove obstructions and restore vital energy using substances that act in harmony with natural laws and the vital energy.
- 6** In doing so, one or more of the following effects should be achieved:
 - a** relaxation
 - b** contraction
 - c** stimulation
 - d** soothing
 - e** nourishing
 - f** neutralisation

What can be observed within these vitalist concepts is that health is the natural state of the body when all cells are working at their optimum, and disease is caused by a violation of the natural laws. The body does not gravitate towards disease, it gravitates towards health.

There are some obvious and striking parallels between Thomsonian strategies and Ayurveda. In the Charaka Samhita Sutrasthana⁶ 1.53 and 22.4 we find: “The goal of Ayurveda is the equilibrium of the tissues” and “One who knows how to reduce excess, nourish deficiency, dry, oleate (lubricate), sweat and astringe is a real Ayurvedic physician.” In fact, both the Ayurvedic system and traditional Chinese medicine (see Chapter 4) are very much embedded in concepts that we can employ as part of functional medicine – and, indeed, FHT.

A second significant root of FHT comes from physiomedicalism. The physiomedicalists were neo-Thomsonians – in other words, they took Thomson’s principles and elaborated on them. The word “physiomedical” suggests exactly what they were trying to achieve: to develop a medical system that was physiologically informed.

All of these concepts and developments (and more) are fully explored in Chapter 4. The fundamental message is that traditional herbal axioms are still relevant to modern herbal prescribing, especially as embodied by FHT (see Section 1.3).

1.3 The defining attributes of FHT

FHT is a system of modern prescribing for Western herbal clinicians that:

- ▶ incorporates the defining characteristics of functional medicine and applies these to the unique properties of medicinal plants
- ▶ also embraces the concept that contemporary Western herbal therapeutics should draw heavily on its empirical roots, acknowledging that the prescribing systems of key Western herbal movements, especially in the nineteenth and early twentieth centuries, were essentially a form of functional medicine
- ▶ employs diet as a positive aspect of therapy, especially with the use of phytonutrient-rich plant foods

The key defining attributes or principles of the FHT prescribing system are the following:

- 1 understanding diseases as disordered processes of normal physiology
- 2 embracing the complexity of mosaic diseases, where the individual story counts most
- 3 ensuring treatment energetics are compatible with the patient's condition
- 4 complex interventions (network pharmacology) for multifactorial disorders (mosaic diseases)
- 5 therapy based on 12 core strategic targets
- 6 modular treatments and pulsed dosing used as key strategies where appropriate
- 7 the key overriding consideration: to support the affected tissues

1.3.1 Diseases as disordered processes of normal physiology

To fully appreciate this key attribute of FHT, we must make the reasonable assumption that a normally functioning human body is both free from disease and capable of resisting disease. Therefore, a deeper understanding of the cause and treatment of disease should come largely from a consideration of physiology, the normal functioning of the body, in preference to pathology and pathophysiology.

An excessive focus on pathology inevitably leads to a medical system that is overly interventionist. Its focus will be directed towards compensating for the physiological deficiencies and imbalances that arise in disease (physiological compensation), without seeking a greater understanding of how they arose in the first place. Such a basic strategy will lead to a superficial, short-term approach to treatment. In this model, chronic diseases are viewed as requiring management, rather than cure. (The commercial imperative behind this is obvious.) This is increasingly the conventional drug-based medical system we have today. While it is very useful for advanced pathologies and life-threatening states, it is incomplete and is especially inadequate in the treatment of many modern chronic diseases.

In contrast, most traditional medical systems, which are partially or completely based on herbal medicine, concern themselves more with the underlying physiological imbalances that have led to and sustain the disease. As such, they are focused more on physiology than on pathology. The aim of treatment is, typically, physiological support or enhancement, rather than just compensating for the chemical deficiencies or excesses resulting from an abnormal physiology. Physiological compensation often requires the constant presence of the medicine to achieve the desired effect, whereas providing physiological support can, in time, lead to a permanent correction of an abnormal body biochemistry.

One example of physiological support versus physiological compensation can be seen in the treatment of bacterial infections. The traditional herbal approach (and indeed that of FHT) is to support immunity and to fine-tune the normal mechanisms that protect against infection, such as the physical (anatomical barriers, such as intact skin and mucous membranes) and physiological barriers (such as fever and gastric acidity). In contrast, the conventional approach is to ignore the immune response and barriers and suppress the fever, killing the offending bacteria with antibiotics (thereby compensating for weakened or overloaded bodily defences). The latter approach has life-saving value but will not prevent infections from recurring, and it has a limited life due to the development of bacterial resistance to antibiotics. The traditional herbal approach may see a higher rate of failure in acute situations but can lead to improved immunity and ultimately to a reduced rate of recurrent infections. Clearly, an important complementary role for traditional herbal medicine can be argued from this and other examples.

The FHT approach is not always opposed to employing physiological compensation when needed, although the strategies used are far less interventionist than those possible with modern drugs. FHT recognises that a disease process can often create a vicious cycle, and sometimes only direct intervention to break that cycle can restore health. At a pragmatic level, interventionist treatment gives quicker relief of symptoms, which encourages the patient to persist with the treatment. Sometimes the very concepts treated might require an interventionist approach, because they are orthodox concepts – hypertension and high serum cholesterol, for example. This is not to say that applying the relevant core strategies of FHT will not also be of assistance and ultimately lead to better outcomes.

In general, the goal of physiological enhancement in FHT is to create a state of active, robust health. This is more than just the absence of overt disease, although such a positive state of body and mind would be free of disease and capable of resisting disease. It is the optimum state of body biochemistry and body energy.

Except for “whole-body” medicines such as tonics and adaptogens (see Chapter 2), the general goals of physiological enhancement in FHT are achieved by enhancing the function of individual systems, organs, or even tissues and cells. Such enhancement often involves the correction of imbalances. Deficient function in one physiological compartment can lead to overstimulated function in another, which can, in turn, create a deficiency elsewhere. For this reason, the specific treatment is sometimes not aimed at the problem site: for example, in constipation caused by deficient liver function, liver function would be enhanced instead of – or in conjunction with – enhancing bowel function. In another example, treatment of an excess of female hormones causing a menstrual problem may again be directed at the liver, this time enhancing detoxification processes, since the liver is the organ that breaks down these hormones. In addition, rather than directly manipulating ovarian secretions, the problem may also be corrected by optimising the output from the pituitary, which controls ovarian function.

From the brief examples above, it becomes apparent that fundamental to FHT is the individualisation of the patient (see Section 1.3.2). This is in direct contrast to current medical science, since the double-blind, placebo-controlled clinical trial examines the effect of a treatment only in a group of patients (the more the better, for statistical power) rather than in individuals.

Where appropriate, specific physiological enhancement in FHT might involve the regulation or boosting of digestive function, immunity, circulation, respiratory function, and hormone output. It may also involve the support of specific organs, such as the liver, kidneys, ovaries, and so on. The focus may be on specific tissues, such as the exocrine cells of the pancreas. Specific functions of organs – for example, the bile secretion or the detoxification enzyme systems in the liver – may also be supported. In all cases, this must be assessed on an individual basis and reviewed regularly.

Cells, tissues, organs, and systems will only be capable of optimal function if they are appropriately nourished, protected, and co-ordinated. For example, attempting to stimulate bile flow from a damaged liver will probably fail and might even be counterproductive. For this important reason, the overriding

principle of FHT is to first support the tissue (see Section 1.3.7 and Chapter 2).

1.3.2 Embracing the complexity of mosaic diseases

1.3.2.1 What is a mosaic disease?

Mosaic disease as a concept was first suggested by the famous heart specialist Irvine Page in 1950 in the context of hypertension.⁷ He proposed that hypertension is a mosaic disease based on eight possible causative factors: genetic, environmental, anatomical, adaptive (stress response), neural, endocrine, humoral, and haemodynamic. Much later, in 1989, immunologist Yehuda Shoenfeld coined the term for autoimmune disease.⁸

Mosaic disease may be described as a “syndrome” or disease that differs in its expression but shares many common factors (these constitute the pieces or tiles in the mosaic). Each piece in the mosaic can be viewed a causative factor in the disease and a potential target for treatment. Therefore, the “matrix” concept of functional medicine is immediately captured by mosaic disease principles. The mosaic disease concept can be readily applied to most modern chronic diseases.

According to mosaic disease principles:

- Every patient presents a unique picture, irrespective of their disease label.
- A chronic disease results from multiple causative factors (pieces in the mosaic).
- Disease occurs in a person due to a random (stochastic) combination of these causative factors.
- Therefore, the patient’s story is paramount.

Some specialties of mainstream medicine still struggle with the concept of multiple causative factors, as illustrated by the following quotation from American psychiatrist Kenneth Kendler writing in a journal of the American Medical Association, *JAMA Psychiatry*:⁹

The search for the causes of medical and psychiatric disorders has gone through 3 historical phases. First, up until the mid-19th century, causes of

illness were anecdotally recorded from individual cases, resulting in long and diverse lists for all disorders. Second, in the latter half of the 19th century, with the use of microbiological methods, single causes were found for many infectious diseases that led to specific diagnostic tests, effective preventions, and, in some cases, treatments. Causal thinking in medicine shifted from the earlier multicausal approaches to monocausal theories of aetiology. Indeed, proving monocausal etiology became a way to establish the legitimacy of a disorder. Through the writings of Kahlbaum and Hecker, psychiatry was deeply influenced by this monocausal perspective, the importance of which was substantially amplified by a twist of fate: the increasing clinical importance of general paresis of the insane throughout the 19th century and the eventual proof that it too was a monocausal condition. However, in the mid-20th century, the third phase began. With decreasing deaths from infectious diseases, epidemiology and clinical medicine shifted to a chronic disease model in which paradigmatic disorders, such as cancer and cardiovascular disease, were shown to be highly multicausal. Biostatistics evolved from deterministic to probabilistic models of disease risk factors. Paradoxically, at this time, biological psychiatry, then rising to dominance in American psychiatry, vigorously pursued monocausal theories, first of neurochemical origin and then of genetic origin. We were trying to establish the legitimacy of our field by pursuing an outmoded model – that “real” diseases are monocausal. Despite ample evidence to the contrary, monocausal thinking continues to influence our field. . . .

1.3.2.2 The three Ps of causation

The question that must be asked at the outset and through all stages of applying FHT is: “What is causing the disease in this individual?” Depending on the causes identified, treatment involving physiological enhancement and/or compensation can be directed at each cause, as informed by the 12 core strategies of FHT.

Using the word “cause” in any medical discussion can ultimately lead to a metaphysical debate, and therefore the word “perceived” becomes an important practical qualification. As the perception and understanding of the patient’s problem improve, one gets closer to the “real” cause. Often there is a chain of causal events. Here the FHT approach is to treat as many of the links in the causal chain as are amenable to treatment and are deemed to be active at the time of treatment. This might be done sequen-

tially (the concept of treatment modules). Identification of causes should always be linked to a valid medical diagnosis, although, given the complexity of many clinical conditions and the difficulty that even conventional medicine has in diagnosing some presentations, a more pragmatic “assessment” may be at least as useful.

There are three classes of possible causes that operate in chronic disease. We can list them as the three Ps:

- Predisposing causes: for example, genetics
- Precipitating causes: for example, pathogens
- Perpetuating causes: for example, a maladaptive stress response

Predisposing causes are factors that render the body more liable to disease. They include stress, lowered vitality, poor diet, inherited defects, and so on. **Precipitating causes**, such as infection and trauma, provoke the disease directly. **Perpetuating causes** usually come into play after the initiation of a disease process and hinder the resolution of the disease. In this context, unresolving inflammation can be an important sustaining cause.

In chronic disease, perpetuating causes are the main focus, since they are the factors keeping the disease going. However, if any predisposing or precipitating causes are found to be still relevant, it is important to treat those as well. An example is multiple sclerosis (MS), which some scientists believe to be triggered by the Epstein-Barr virus (EBV), so this is a precipitating factor. However, if one considers that the EBV chronically resides in immune cells, then it might also act as a perpetuating factor in MS.

While targeting perpetuating factors may appear to be a symptomatic approach to treatment, this is actually not the case, because addressing a perpetuating cause might, in fact, resolve the disease and hence be curative. For example: “I’m treating you for inflammation, because your inflammation is stopping you from sleeping properly, and that, in turn, is dysregulating your immune system, and that is feeding your autoimmune disease.”

Another way to put this approach to addressing the different classes of causative factors is:

- 1 elimination/modification of the underlying causes that are still active
- 2 induction of remission
- 3 maintenance of remission

1.3.2.3 Applying the OST rule

One of the barriers to effective prescribing in FHT is the reticence and indecision created by the abundance of therapeutic targets it reveals. This can make it difficult to know where to start. The problem can be addressed by applying the OST rule. The basic features of this rule are:

- ▶ Overlap therapeutic activity, and use complex treatments: for example, use a single herb, such as Ginkgo, which is anti-inflammatory and neuroprotective and supports microcirculation, to achieve three treatment aims.
- ▶ Sequence treatments: for example, in autoimmune disease treatment, everything cannot be addressed at once, so we can sequence treatments to achieve desired clinical outcomes in stages (the concept of treatment modules).
- ▶ Triage, and set treatment priorities: for example, set some treatment goals for the first visit and other treatment goals for the future.

As noted above, the OST rule predicates the strategy of modular treatments, which, when appropriate, is a key aspect of FHT (see Section 1.3.6).

1.3.2.4 Case characteristics form the pieces in the mosaic

In terms of selecting the relevant FHT core strategies for a particular disorder, information used to arrive at these (and thereby the individual treatment framework) can be drawn from the following sources:

- ▶ the traditional herbal understanding of the disorder
- ▶ the clinical experiences of the practitioner in the treatment of the disorder
- ▶ a general understanding of the type of the disorder: for example, if it is an infection, what usually leads to this, or if it is an autoimmune disease, the factors that usually precipitate and sustain an autoimmune process
- ▶ a scientific understanding of the causes involved in the disorder – information that might be derived from laboratory, clinical, and epidemiological studies that have revealed factors that precipitate and sustain the particular disease process

- a knowledge of scientific studies that have defined the underlying pathological processes for the disorder
- the individual case history

In a sense, the individual case history acts as a filter for all the above information. An obvious example is lung cancer. Smoking is known to cause lung cancer but if a patient has never smoked then this consideration is irrelevant to that patient. In other words, only those known or suspected causative factors that apply to the patient should be incorporated into his or her treatment framework.

1.3.2.5 The critical value of the herbal actions

The herbal actions link the chosen treatment objectives to the choice of herbs. These are often traditional herbal concepts, but more and more, scientific research is now providing information about the actions of a given herb.

It is paramount that herbs chosen to deliver the required actions not only have good evidence to support their use, but also have a good track record in clinical practice. This is typically the biggest mistake made by the herbal novice or dilettante. Often a selected herb will be able to deliver more than one action, which helps to simplify the treatment protocol (see the OST rule above). For example, if anti-inflammatory and antispasmodic actions are required for the gut, chamomile can effectively cover both these requirements. Chosen herbs should be matched to the patient's constitution and general condition, according to the considerations outlined in Section 1.3.3 and in Chapter 4. If a particular action needs to be reinforced, this can be achieved by choosing more than one herb with this action, or by using a very effective herb at a higher dose. Chapter 2 lists the key herbs to deliver each of the actions that underpin the 12 core strategies of FHT.

1.3.3 Treatment energetics

As is plainly apparent (and emphasised in Chapter 4), fundamental to all the traditional herbal systems has been the energetic concept of heat. Both diseases and herbal remedies were viewed through this filter.

Clearly in these systems, heat was equated with vitality. The extreme absence of heat is the striking coldness of the corpse. When Samuel Thomson built his therapeutics around the principle that disease was essentially a cold intrusion and that before all else, remedies should heat the struggling body, he was only highlighting this almost universal therapeutic instinct.

In every tradition there is frequent use of heating remedies: the hot spices, or “pungent” remedies were the strongest for internal use, but there was always a raft of gentler warming remedies as well. Some were applied as aromatic digestives to failing “cold” digestion, others as warming expectorants or mucolytics in treating the effects of cold and damp on the chest and respiratory system. Others gently warmed and thereby supported what we might now call a deficient microcirculation but was, at the time, referred to as blood stasis. There were warming tonics (*yang* tonics in traditional Chinese medicine) and a variety of remedies that brought heat to the head, reproductive system, or kidneys.

Indications for the use of heating agents (apart from fevers) were easily understood: if the patient felt cold, as a whole or in the diseased part, or favoured hot food, hot drinks, hot packs, or hot baths, if there was diminished vitality, if there was pallor (the nail bed was a particularly sensitive guide) or signs of cumulative cold–damp conditions like mucus or gravity-dependent oedema, then heating remedies were indicated. The fact that a headache or arthritic joint or abdominal swelling was relieved by a hot pack was as important in choosing the course of treatment as determining what pathological factor was involved. When the focus of cold was clearly demarcated, then extreme heating, in the form of powerful “counter-irritation” (cayenne, mustard plasters, or stinging nettles, applied topically) sometimes had dramatic beneficial effects.

As mentioned, heat in modern terms also equates with circulation: a rationale that includes improved tissue perfusion, oxygenation, and metabolite removal can easily be drawn, as is delineated in Chapter 5.

Whereas heating was clearly “on the side of the angels” in traditional healthcare, cooling was altogether a more thoughtful matter. Cooling meant reducing vitality. The ultimate cold was death. Inappropriate heat (where cooling is indicated) includes hyperpyrexia in fevers, inflammatory diseases, hypersensitivity or allergic reactions, nervous agitation, and, above all, pain. The respective treatments – diaphoretics, anti-inflammatories, antiallergic

remedies, sedatives, hypnotics (and narcotics), and analgesics – would all be classified as cooling in these terms. Indeed, some of the eliminatory treatments often applied for these purposes, especially the laxatives and cholagogues, were also seen as cooling. Almost everything now prescribed by modern doctors would have been classified as cooling.

The one striking exception to the cautions linking cooling to reduced vitality was digestion. Digestion was widely seen as a cooling activity, marked, of course, by a shift of blood flow from the periphery to the core. The archetypal digestive stimulants were the bitters. Of all the herbal strategies in history, these are probably the most respected. (The Chinese even gave them the awesome role in their five-phase classification of tonifying the kidneys – the source of constitutional energies in their system.)

Bitters are universally used before and after eating as appetite stimulants (“aperitifs”) and digestives. They were the first resort in digestive difficulties, especially when associated with heat and hepatobiliary (“damp-heat”) disorders (bitters are also the most commonly used cholagogues). Critically, they were also favourite febrifuges, apparently lowering body temperature in fever. They seemed to correct an apparent design inconsistency in the febrile response, wherein digestion is shut down, leaving undigested material as a source of new toxicity (and even the original source of infection, in the case of gastroenteritis). Bitters seemed to switch on digestive defences, as well as bring the fever down. In many cultural traditions, bitters were seen as primarily cooling. Unlike other cooling agents that counteracted vital functions, bitters appeared to transcend these limitations, to convert heat and vitality into nourishment. However, the cooling effect of bitters may be contraindicated in the failing digestion of the elderly – ageing is a cooling condition – unless they are combined with warming digestive herbs, such as the spices, but especially ginger.

As touched on above, a very important aspect of the best-practice use of treatment energetics in FHT is in the treatment of fever. The significant role of fever management during acute respiratory infections to improve outcomes is flagged in Chapter 13. (See also Simon Mills’ exploration of traditional herbal systems in Chapter 4.¹⁰)

1.3.4 Complex interventions for complex disorders

Is there, in fact, any advantage in chemically complex medicines? Life is indeed chemically complex, so much so that science is only beginning to grasp the subtle and varied mechanisms involved in processes such as inflammation and immunity. It does seem logical that, just as our foods are chemically complex, so should our medicines be. But hard proof of this advantage has been difficult to establish to date. There are, however, several examples from the literature of how a distinct advantage might arise from chemical complexity.

The basic considerations supporting complex interventions in complex disorders are the following:

- 1 Multiple factors (pieces in the mosaic) require multiple interventions.
- 2 Interventions are determined for each patient via their case history.
- 3 Targeting just one point in a pathophysiological network and completely shutting it down risks side effects and does not resolve the disease.
- 4 Network pharmacology achieved by a chemically complex intervention is compatible with functional medicine.

1.3.4.1 Herbal extracts as inherently complex interventions

The body is not a one-note melody, but a symphony of many interactive components functioning synergistically . . . the active ingredient model does not stem from a strength of the scientific method, as often supposed; rather, it stems from a weakness – from the inability of the reductionist method to deal with complex systems.¹¹

It was Gertsch who observed that while herbal extracts might be complex, they are in fact “intelligent mixtures” of secondary plant metabolites shaped by evolutionary pressures.¹² As such, they might represent complex therapeutic mixtures possessing inherent synergy and polyvalence. Polyvalence can be defined in this context as the range of biological activities that a herb may

exhibit that contribute to the overall clinical effect. It stems directly from the chemical complexity of medicinal plants.

Gertsch also noted another important concept related to polyvalence: that of “network pharmacology”, as originally proposed by Hopkins.¹³ In the context of plant extracts – which typically contain hundreds of potentially bioactive natural products with only mild activity – it is possible that different proteins within a particular biochemical signalling network are only weakly targeted. However, because multiple targets are influenced, this is enough to shut down or activate a given biological process by virtue of this network pharmacology. In other words, network pharmacology can explain how the many weakly active plant secondary metabolites in a plant extract may be sufficiently active to exert a potent pharmacological effect. It potentially explains why herbs can deliver surprising therapeutic outcomes without the presence of a highly bioactive compound.

There are, in fact, three layers of complexity that follow from applying the FHT prescribing system to chronic health disorders:

- 1 complexity due to the multiple core strategic targets for each disorder
- 2 complexity conferred by using several herbs in combination to address each of those targets
- 3 the inherent chemical complexity of each plant extract selected

1.3.5 The 12 core strategies of FHT

The following 12 core strategies underpin FHT:

- 1 supporting key endocrine responses (as appropriate): hypothalamic-pituitary-adrenal (HPA) axis, thyroid, pancreatic beta cells, enteroendocrine cells, male / female
- 2 eliminating persistent pathogens: stealth pathogens, viruses, bacteria, fungi, parasites
- 3 lowering danger signals, boosting cellular protection (cytoprotection), enhancing mitochondrial function and biogenesis

- 4 detoxifying and priming Nrf2 responses
- 5 improving sleep quality and time asleep and restoring healthy nervous system function
- 6 boosting macrocirculatory, microcirculatory, and endothelial health, improving blood quality, promoting healing
- 7 eliminating dysbiosis and promoting a healthy microbiome
- 8 optimising digestive function
- 9 optimising and balancing immune function
- 10 eliminating chronic inflammation, including neuroinflammation
- 11 improving and enhancing natural barriers: gastric acid, gut, skin, lung
- 12 addressing metabolic imbalances.

These core strategies are discussed in greater detail, including the appropriate herbs to support these strategies, in Chapter 2.

1.3.6 Modular treatments and pulsed dosing

Early experience with the bowel flora protocol (see Chapters 2 and 8) revealed the value of the use of treatment modules. As mentioned above, in many chronic diseases not every objective can be addressed at once. One way to meet this challenge is to sequence treatments as packaged modules, thereby achieving desired clinical outcomes in stages. Several strategies are well suited to modular treatment, usually applied for a period of a few months each. They include the bowel flora protocol, a detoxification module, a module for addressing the impact of stealth pathogens and one for lowering immunological danger (and hence immune-driven inflammation). This approach is elaborated in subsequent chapters.

Some herbs are safer or have greater impact or more sustained activity when they are not prescribed all the time. This concept of pulsed dosing might have been first introduced for Western herbs by the Soviet scientists working on the development of adaptogenic treatments. The idea was that for maximum benefit adaptogenic herbs were best taken for three weeks every

month (or some similar pattern). Several examples of the informed use of pulsed dosing are provided in subsequent chapters.

1.3.7 Support and protect the affected tissues

The physiomedicalist Thurston (see Chapter 4) stressed the distinction between functional symptoms and those arising from organic (“trophic”) origins. I can still remember from my childhood being fascinated by the television series *Ben Casey*. One of the regular issues that brain surgeon Ben Casey pondered with his mentor, Dr Zorba, was whether a patient’s condition was functional or organic. This overriding principle of FHT acknowledges that the state of a tissue – the “organic” reference in the above anecdote – can determine health just as much as its function. With herbs, we are uniquely placed to support and restore a range of tissues in the body. Failing that, there are also herbal agents that can help to protect a tissue under attack, leaving the natural physiology free and unencumbered to do the healing (see the examples provided in Chapter 2). Also, many of the 12 core strategies above, such as strategies 3, 4, 6, and 11, are tissue-supportive, especially via protection.

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