

## **Herbal/traditional medicine – brief overview**

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Herbal medicine is the use of plant materials for the treatment of disease and the maintenance of good health. Several traditional medicine systems such as traditional Chinese medicine and Ayurveda also make use of non-plant materials alongside plant medicines. For the most part non-plant materials are not currently permitted for use as medicines in the UK unless they have a market authorisation (i.e. medicines licence). Herbal medicines may be taken as teas, decoctions (extraction by boiling), tinctures and fluid extracts (extractions made with alcohol and water), powders and pills as well as used externally e.g. as liniments, poultices, plasters and ointments.

The use of plant medicines is common to all cultures and peoples and herbal medicine has been practised on a worldwide basis for millennia. These ancient traditions are implicitly recognised in the *European Directive on Traditional Herbal Medicinal Products* which notes that “The long tradition of the medicinal product makes it possible to reduce the need for clinical trials insofar as the efficacy of the medicinal product is plausible on the basis of long-standing use and experience.” (Directive 2004/24/EC).

Herbal medicines are complex in their chemical make-up in comparison with pharmaceutical drugs that usually comprise a single medicinally active chemical. Plant medicines are ideal tools to restore health and treat disease precisely because they consist of a multiplicity of chemical components. These act synergistically (in concert) to make active constituents bio-available or to buffer otherwise potentially powerful active principles thereby preventing adverse effects. The orchestra of chemicals within a medicinal plant work together within the body to maintain health and treat disease. In this way many medicinal herbs act like foods gently restoring disrupted physiological processes. The therapeutic activity of the whole plant tends to be significantly more effective than the isolated action of any of its known constituents. In this context, two and two can turn out to add up to rather more than four.

Pharmacologists differentiate between two types of synergy, based on the nature of the interaction: *pharmacodynamic or pharmacokinetic*. *Pharmacodynamic synergy* results from the enhancement of action when two drugs are directed at a similar receptor target or physiological system. A herbal example of this process can be seen in Sennocide A and Sennocide C, constituents of the herb senna (*Cassia angustifolia*). Separately these have a similar laxative action but a mixture of these two compounds in the ration 7:3 (which is more or less the naturally occurring ratio found in senna) all but doubles the laxative effect ( Kisa 1981).

*Pharmacokinetic synergy* results from alteration of the processes of drug absorption, distribution, biotransformation (metabolism), or elimination. A simple example of pharmacokinetic synergy is the discovery that the simultaneous ingestion of vitamin C can improve the body’s absorption of iron (Teucher 2004). For this reason, many herbs

rich in iron and vitamin C such as nettles or watercress would seem an ideal way to combat iron-deficiency anaemia. On the other hand because of its tannin content, drinking tea at mealtimes may inhibit iron as well zinc and copper absorption by decreasing their bioavailability (Pizarro 1994).

Pharmacokinetic synergy is thought to occur with St. John's wort, where a combination of constituents improves its oral bioavailability. An extract containing naphthodianthrone is inactive in a water suspension, but very effective when another constituent, procyanidin, is present. Procyanidin increases the water solubility of naphthodianthrone, thus increasing their pharmacokinetic availability (Butterweck).

St John's wort has been extensively investigated and contains many different chemicals that may explain its proven antidepressant effect but none of these chemicals individually are at concentrations that satisfactorily account for the action of the plant. Unsuccessful attempts have been made to peg the antidepressant action specifically to the constituents hypericin and hyperforin and thus one is forced to conclude that the action appears to be due to the additive effects of the plant's multiple constituents (Spinella 2002). One reviewer, Nathan, observed that *Hypericum perforatum* "has a unique pharmacology in that it displays the pharmacology of many different classes of antidepressants" (Nathan 1999).

There have been thousands of *in vitro* and *in vivo* trials on herbal medicine which explore the biological mechanisms at work which have established the benefits of herbs such as, devil's claw (*Harpagophytum procumbens*) and rose hips (*Rosa canina*) for non-specific low back pain (Gagnier 2004; Chrubasik 2008); horse-chestnut seed extract (*Aesculus hippocastanum*) for chronic venous insufficiency (Pittler 2006) and St John's wort (*Hypericum perforatum*) for depression (Linde 2008).

In April 2011, the European Directive on Traditional Herbal Medicinal Products will be fully implemented throughout Europe. From this time onwards, all herbal medicinal products sold over-the counter (except those with a market authorisation) will require a traditional medicines licence granted by the Medicines and Healthcare products Regulatory Agency (MHRA). In a parallel development, the Department of Health is considering the possibility of statutory regulation of herbal and traditional medicine practitioners following the publication of the *Report on the Statutory Regulation of Practitioners of Acupuncture, Herbal Medicine, Traditional Chinese Medicine and Other Traditional Medicine Systems Practised in the UK* (Department of Health 2008).

### **Western herbal medicine (also called phytotherapy)**

Western herbal medicine (phytotherapy) has its roots both in the indigenous practises of the British Isles (Bryce 1988) and in the European and Greco-Roman traditions and traces its lineage back to Dioscorides, Hippocrates and Galen. There have been further influences from North America (Cook 1869) and more recently the range of herbs has been augmented by the adoption of many plant medicines from other herbal traditions such as ginseng (*Panax ginseng*) from the Asian tradition and Devil's claw (*Harpagophytum procumbens*) from Africa. Nowadays such time-tested traditional

knowledge is enriched by a stream of scientific insights and discoveries into the pharmacology of medicinal plants which has underwritten and developed their use as medicines of value for the 21<sup>st</sup> century.

Western herbalists use their remedies to support compromised systems within the body. Thus a western herbalist might blend a wild oat extract (*Avena sativa*) with skullcap herb extract (*Scutellaria laterifolia*) to support the nervous system of an over-stressed individual, also prescribing a mixture of valerian root (*Valeriana officinalis*) and hops (*Humulus lupulus*) to aid restorative sleep. Herbal remedies are also effective to eliminate potentially toxic overloads through the bowel (e.g. using rhubarb root – *Rheum officinalis*), the urinary system (e.g. using dandelion leaf - *Taraxacum officinale*), and through body's sweating mechanism (e.g. by using elderflower - *Sambucus nigra*).

### **Chinese herbal medicine**

Chinese herbal medicine is one modality within traditional Chinese medicine, which also includes acupuncture, massage (*tuina*), breathing exercises (*qi gong*) and dietary therapy.

Good health is seen as a state in which a person has optimum energy or vitality (*Qi*) and in which the functions needed to maintain that vitality are unimpeded. Ill-health is due to a loss of vitality or to some form of impediment to those functions, or both. Good health furthermore requires a fundamental balance in the body, mind and emotions represented by the core concept of Yin-Yang (see mention of this above).

Diagnosis is the identification of a pattern of disharmony displayed by the individual patient, based on observation, listening, questioning and palpating. Particular attention is paid to the tongue and pulse in evaluating the patient's condition. A disharmony may be read as a deficiency or dysfunction in one or more of the internal organs (these refer to spheres of function, and are not to be confused with the anatomical organs of modern medicine). Another perspective in diagnosis involves identifying patterns according to the presence of pathogenic factors. Such factors, which are not to be thought of as microbes, are described in terms derived from the natural world, namely heat, cold, dampness, wind, dryness, together with varieties of toxin and disease-causing products of the body described as blood stasis and phlegm. These patterns may have an external origin in climate or environment. For example, a damp house or damp working conditions may lead to a damp condition causing stiffness and swelling of the joints whilst a hot environment may aggravate an inflammatory skin rash.

Attention is also given to the origins of disease, broadly categorised as external, internal (e.g. relating to the emotional sphere), and the effect of other factors such as diet, the balance of work and rest etc. Inherited and congenital factors are also recognised.

The Chinese *materia medica* contains several hundreds of plant species, together with some non-plant ingredients (these are not used in the UK). These are classified according to their 'temperature', flavour, sphere of activity, and properties that are related to their ability to supplement or clear impediments to function. The art of treatment with Chinese

herbal medicine is to choose a formula (a combination of herbs) which matches the pattern of disharmony of the individual, and to modify the formula to accommodate changes in the course of treatment.

### **Ayurvedic medicine**

Ayurveda originated in India and is now practised in India and Sri Lanka where it enjoys state recognition.

The term Ayurveda is derived from two Sanskrit words, *ayus* (meaning life) and *vid* (meaning knowledge). Ayurveda is thus the 'science of life' and it is as much concerned with preventing ill-health and enhancing quality of life, as it is with the actual treatment of disease. Ayurveda is firmly embedded in Indian philosophy and its theory of evolution, according to which the universe is composed of five basic elements. These are ether, air, fire, water and earth, which combine and manifest in living beings as so-called three *doshas*, called *vata*, *pitta* and *kapha* - the primary energetic forces of the human body. In their normal state, these *doshas* maintain the integrity of the living organism, conferring strength and longevity. Any imbalance of these forces results in ill-health.

Ayurveda places particular emphasis on the individual constitution, *prakriti*, of each person determined by a unique combination of *doshas*, genetic factors as well as the health, nutrition and lifestyle of the parents prior to conception. *Prakriti* determines an individual's susceptibility to different diseases and has an influence on the course of a disease as well as on its prognosis. An Ayurvedic practitioner takes a detailed case history and arrives at a diagnosis through a variety of methods, including pulse or tongue reading and other forms of physical examination, an in-depth assessment of diet and lifestyle habits, and an analysis of mental and emotional states.

The skill of the practitioner lies in assessing a patient's constitutional type, in diagnosing the root cause of imbalance that manifests as disease, and in selecting appropriate remedial interventions from a variety of therapeutic options which include herbal medicines, massage, yoga, meditation and nutritional and lifestyle advice.

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