

## ABC of complementary medicine

### Unconventional approaches to nutritional medicine

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Although nutrition, as a science, has always been part of conventional medicine, doctors are not taught, and therefore do not practise, much in the way of nutritional therapeutics. Dieticians in conventional settings tend to work mainly with particular patient groups—such as those with diabetes, obesity, digestive or swallowing problems, or cardiovascular risk factors. Apart from the treatment of gross nutritional deficiencies and rare metabolic disorders, other nutritional interventions generally fall outside the mainstream and can therefore be described as complementary medicine.

## Background

There is a wide spectrum of complementary nutritional practices. These range from specific, well researched, biochemically understood treatments that are given by well trained practitioners to unresearched, biochemically implausible interventions popularised by spectacular claims in the lay press and largely used without professional supervision.

Just which treatments are “conventional” and which are “complementary” is subject to debate. Some, such as fish oil supplements for patients with rheumatoid arthritis, have many of the features of a conventional medical treatment—a biochemical mechanism and support from randomised trials—but are, none the less, often considered unconventional. Other interventions were originally considered “complementary” but are now part of conventional practice. Probably the best example is the high fibre diet, rich in fruit and vegetables. “Alternative” practitioners of the 19th century, such as John Kellogg, advocated such a diet at a time when conventional nutritional authorities tended to see meat and potatoes as the best food, even to the extent of denigrating the importance of vegetables and describing wheat bran as “refuse.”

## Nutritional interventions

Unconventional nutritional interventions can be broadly divided into three categories: nutritional supplements, dietary modification, and therapeutic systems.

### Nutritional supplements

As well as various vitamins and minerals, the range of nutritional supplements includes many animal and plant products. Some of these have known active ingredients, such as  $\gamma$ -linolenic acid in evening primrose oil. Others, such as blue-green algae and kelp, have not been fully characterised biochemically. Some supplements are taken to improve general health and performance, while others are for specific clinical indications. Most are taken in pill form. There is some overlap between herbal and nutritional supplements.

### Dietary modification

This involves more comprehensive changes in eating patterns. Many diets, such as vegetarianism and veganism, originated as “movements” characterised by political and ecological concerns, a moral stance towards food, and a view of diet as inseparable from lifestyle. Many diets are based on theoretical considerations rather than empirical data. For example, the



Conventional doctors only rarely make use of nutritional interventions, which is perhaps one reason why nutritional medicine has come to be regarded as part of complementary medicine



In the Hay diet proteins and starch must be eaten separately, though fruit and vegetables can be eaten with either

### Examples of nutritional supplementation

- High dose vitamin C for cancer
- Zinc for the common cold
- High dose vitamins for learning disability (“orthomolecular” therapy)
- Evening primrose oil for atopic dermatitis
- Evening primrose oil for premenstrual syndrome
- Vitamin B-6 for morning sickness
- Vitamin B-6 for premenstrual syndrome
- Garlic for lowering cardiovascular risk
- Multivitamins for improvement in general health

### Examples of diets claimed to improve general health

- Hay diet—Proteins and carbohydrates eaten separately
- Raw foods diet—Avoidance of cooked foods
- Stone Age diet—Avoids grains, pulses, and other products of the agricultural revolution
- Macrobiotic diet—Largely grains and vegetables. Foods are chosen and balanced in accordance with traditional oriental principles such as yin and yang
- Veganism—Avoids all animal products

rationale for the Hay diet's principle that starch and protein should not be eaten together is that each type of food requires a different pH for optimum digestion. The principle of the Stone Age diet is that humans are not adapted by evolution to eat grains and pulses.

### Therapeutic systems

These include techniques such as elimination dieting and naturopathy. Elimination dieting is based on the principle that foods particular to each patient may contribute to chronic symptoms or disease when eaten in normal quantities. Unlike classic allergy, these "food intolerances" do not involve a conventionally understood immune mechanism or inevitably have a rapid onset.

Diagnosis consists of eliminating all but a few foods from the diet and then reintroducing foods one by one to see if they provoke symptoms. After a period of complete exclusion, the problem substances can usually be gradually reintroduced without recurrence of symptoms. Although practitioners commonly diagnose wheat and dairy "intolerance," each patient is said to be sensitive to a different set of foods.

Naturopathy is a therapeutic system emphasising the philosophy of "nature cure" and incorporating dietary intervention among other practices such as hydrotherapy and exercise. For example, a naturopath might advise a patient with recurrent vaginal candidiasis to undertake a limited fast, reduce intake of foods containing sugar and yeast, and take herbal and probiotic preparations.

Another therapeutic system tests patients for "subclinical" nutritional deficiencies—thought to arise where systems of food intake, digestion, or absorption are not fully functional—and gives appropriate supplementation.

## What happens during a treatment?

Many people make unconventional nutritional changes without consulting a practitioner (see below). Where practitioners are involved in treatment, consultations may involve some form of testing for deficiencies of particular nutrients or hidden allergies. Such tests include biochemical assays of the vitamin and mineral content of blood or hair. In "Vega" or electrodermal testing an electrical circuit is made that includes both the patient and the foodstuff suspected of causing disease. In applied kinesiology practitioners claim to be able to diagnose allergy or deficiency on the basis of changes in muscle function.

## Evidence of therapeutic scope

Randomised controlled trials have favoured a small number of indications for high dose vitamin and mineral supplementation. These include both vitamin C and zinc for treating (though not for preventing) the common cold, vitamin B-6 for premenstrual syndrome (though trials are not of high quality) and autism, and vitamin E for angina.

There is evidence that exclusion dieting can be of benefit for various conditions including rheumatoid arthritis, hyperactivity, and migraine. However, only a minority of patients with such conditions seem to benefit, and it is not yet possible to select these in advance. Randomised trials have shown that increasing consumption of polyunsaturated fatty acids—for example, by supplementation with products such as fish oils or evening primrose oil—and reducing saturates can be beneficial in hypertriglyceridaemia, rheumatoid arthritis, and inflammatory bowel disease.

The evidence for most other unconventional nutritional interventions in treating disease is generally either negative or

### Examples of dietary interventions claimed to help in specific conditions

- Dong diet for arthritis—Recommends a diet similar to that of Chinese peasants
- Feingold diet for attention deficit disorder—Recommends elimination of food additives
- Polyunsaturated fatty acid diet for multiple sclerosis
- Gluten-free diets for schizophrenia
- Atkins diet—Recommends elimination of all carbohydrates for weight loss
- "F-plan"—High fibre diet for weight loss
- Dairy-free diet for recurrent respiratory disease
- Gerson diet for cancer—Strictly vegetarian, largely raw food, diet with coffee, enemas, and various supplements



In the Stone Age diet grains, pulses, and other products of the agricultural revolution must be avoided. Such exclusion diets can be highly restrictive, socially disruptive, and expensive

### Key studies of efficacy or reliability

#### Systematic reviews

- Douglas RM, Chalker EB, Treacy B. Vitamin C for the common cold. In: The Cochrane Collaboration. *The Cochrane Library*. Issue 2. Oxford: Update Software, 1998
- Fortin PR, Lew RA, Liang MH, Wright EA, Beckett LA, Chalmers TC, et al. Validation of a meta-analysis: the effects of fish oil in rheumatoid arthritis. *J Clin Epidemiol* 1995;48:1379-90
- Budeiri D, Li Wan Po A, Dornan JC. Is evening primrose oil of value in the treatment of premenstrual syndrome? *Controlled Clin Trials* 1996;17:60-8
- Wyatt KM, Dimmock PW, Jones PW, O'Brien PMS. Efficacy of vitamin B-6 in the treatment of premenstrual syndrome: systematic review. *BMJ* 1999;318:1375-81

#### Randomised controlled trial

- Schmidt MH, Mocks P, Lay B, Eisert HG, Fojkar R, Fritz Sigmund D, et al. Does oligoantigenic diet influence hyperactive/conduct-disordered children—a controlled trial. *Eur Child Adolesc Psychiatry* 1997;6:88-95

#### Study of reliability

- Sethi TJ, Kemeny DM, Tobin S, Lessof MH, Lambourn E, Bradley A. How reliable are commercial allergy tests? *Lancet* 1987;i:92-4

non-existent. For example, randomised trials have failed to show any benefit from high dose vitamin C for cancer; megadose therapy for Down's syndrome, learning disability, or schizophrenia; the Dong diet for arthritis; essential fatty acid supplementation for psoriasis or premenstrual syndrome; and vitamin B-6 for carpal tunnel syndrome.

Many unconventional diets are claimed to have benefits in specific conditions and general effects on physical health, mental wellbeing, and even spiritual development. Apart from those discussed above, these have not been evaluated systematically. There has been no rigorous research on the naturopathic approach to chronic disease or on individualised nutritional therapy.

### Nutritional tests

While some unconventional laboratories use assays and methods of quality control similar to those used in mainstream biochemical laboratories, others may be less reliable.

In studies where duplicate samples of hair or blood were sent to "alternative" nutritional testing laboratories there was low agreement in results for the same individual. In one investigation several laboratories which advertise services to the general public failed to report fish allergy in subjects who were allergic to fish but ascribed numerous (but inconsistent) allergies to healthy controls.

There is insufficient evidence on the validity of "Vega" testing. Studies have also found that practitioners of techniques such as applied kinesiology are unable to obtain consistent results from duplicate blinded samples.

## Safety

Most unconventional diets recommend generally healthy patterns of eating (reduction or elimination of fat, sugar, alcohol, and coffee and an increase in fresh vegetables and fibre) which most people with a normal digestion can tolerate without side effects.

Some diets, such as veganism or macrobiotics, are highly restrictive and can lead to complications such as reduced bone mass or anaemia, especially in children. Children, pregnant and lactating women, and patients with chronic illness should undertake such major dietary changes only under professional supervision. A drawback of any dietary change can be social disruption when a patient cannot share meals with friends and family.

High dose nutritional supplementation can lead to acute adverse effects such as diarrhoea (vitamin C) and flushing (niacin) during treatment. Persistent or more serious adverse effects are rare for water soluble vitamins, although chronic use of high dose vitamin B-6 can lead to neuropathies. Adverse effects, though still uncommon, are more likely to result from high doses of fat soluble vitamins: vitamin A has been linked with birth defects and irreversible bone and liver damage, and vitamin D with hypercalcaemia. High doses of single minerals or amino acids may induce deficiency in nutrients that share similar metabolic pathways. Excessive doses of zinc and selenium can cause immune suppression, and evening primrose oil may exacerbate temporal lobe epilepsy.

## Practice

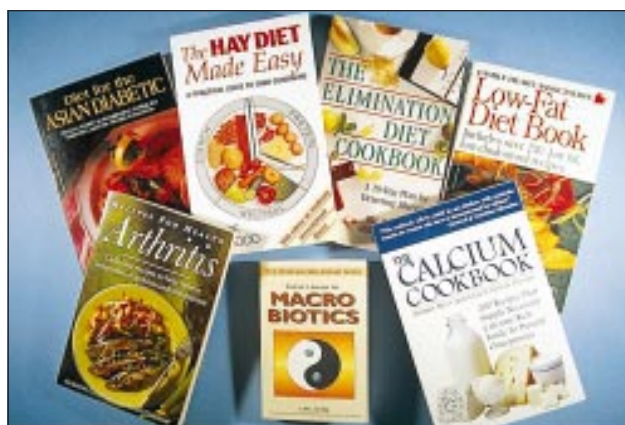
Decisions to make unconventional nutritional changes are reached by many routes, often through the use of self help books, leaflets, and magazine articles or advice from friends, relatives, and staff of health food stores. People may also make



Vega testing is said to identify patients' individual food intolerances. Although its validity remains uncertain, it is often used to draw up personalised elimination diet programmes



Some typical nutritional supplements. Though often perceived by the public to be inherently safe, supplements can sometimes be associated with adverse effects, especially when taken in high doses for long periods



Many patients undertake unconventional diets without advice from a practitioner of any kind

changes on the basis of nutritional tests provided by commercial companies which advertise laboratory services in the pages of health magazines.

Nutritional consultations may be given by a wide range of practitioners with varying levels of training and experience, from complementary practitioners who mainly practise other disciplines through trained nutritional therapists and naturopaths to nurses and doctors who have undertaken further training in nutrition.

Nutritional medicine can be a relatively expensive form of complementary medicine. Diagnostic tests can cost from £15 to over £100 per test, nutritional supplements may cost £10-£50 a month, and dietary changes involving organic produce or wholefoods may also have substantial cost implications.

### Regulation

The General Council and Register of Naturopaths registers and regulates the 180 or so naturopaths practising in the United Kingdom. Most of these are also trained osteopaths. Regulation for other nutritional practitioners is not as well established. The British Association of Nutritional Therapists registers and arranges mandatory insurance for about 200 practitioners who have completed one of the more thorough courses at selected training colleges. A few smaller registers also exist.

### Training

Various courses in nutritional therapy exist, ranging from short courses of a few days leading to a certificate in basic nutrition to three year, part time courses leading to qualification as a nutritional therapist. Naturopaths in Britain usually undergo a four year, full time training which includes anatomy, physiology, biochemistry, and pathology as well as naturopathic and osteopathic principles and practice.

The British Society for Allergy, Environmental, and Nutritional Medicine is an association of doctors with a special interest in nutrition. It organises educational events and publishes the *Journal of Nutritional and Environmental Medicine*.

### Correction

*ABC of complementary medicine: Herbal medicine*

An error occurred in this article by A Vickers and C Zollman (16 October, pp 1050-3). The caption beneath the picture of Dr Ding Hui Luo (bottom of p 1051) wrongly stated that she worked at the London Chinese Medical Centre. In fact, her clinic is Hong Ning Co, 15 Little Newport Street, London.

### Regulatory bodies in nutritional medicine

#### General Council and Register of Naturopaths

2 Goswell Road, Street, Somerset BA16 0JG. Tel: 01458 840072.  
Fax: 01458 840075. Email: admin@naturopathy.org.uk.  
URL: www.naturopathy.org.uk

#### British Association of Nutritional Therapists

BCM BANT, London WC1N 3XX. Tel: 0870 606 1284

### Training and educational organisations

#### Institute for Optimum Nutrition

Blades Court, Deodar Road, Putney, London SW15 2NU. Tel: 0181 877 9993. Fax: 0181 877 9980. Email: ion@cableinet.co.uk

#### British Society for Allergy, Environmental and Nutritional Medicine (BSAENM)

Membership organisation for doctors only

For publications: PO Box 28, Totton, Southampton SO40 2ZA. Tel: 01703 812124

For inquiries: PO Box 7, Knighton LD7 1WT. Tel: Premierline 0906 3020010

### Further reading

- Anthony H, Birtwhistle S, Eaton K, Maberly J. *Environmental medicine in clinical practice*. Southampton: BSAENM Publications, 1997
- Brostoff J, Gamlin L. *Complete guide to food allergy and intolerance*. London: Bloomsbury, 1992
- Davies S, Stewart A. *Nutritional medicine*. London: Pan, 1987
- Murray M, Pizzorno J. *Encyclopaedia of natural medicine*. 2nd ed. London: Little, Brown, 1999

The ABC of complementary medicine is edited and written by Catherine Zollman and Andrew Vickers. Catherine Zollman is a general practitioner in Bristol, and Andrew Vickers will shortly take up a post at Memorial Sloan-Kettering Cancer Center, New York. At the time of writing, both worked for the Research Council for Complementary Medicine, London. The series will be published as a book in spring 2000.

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## One hundred years ago

### Honey poisoning

A case of poisoning by honey was related recently in the *Therapeutische Monatschrift* (No. 12, 1898). A woman aged 54 ate a quarter of a pound of honey, and immediately complained of a burning sensation on her forehead; this was associated with visual hallucinations. The face became pallid and cold and the pulse irregular. The patient gradually lost consciousness, and was soon attacked with general convulsions, which began in the arms. After an emetic and the hypodermic injection of stimulants she revived. Mydriasis and a pricking sensation in the tongue remained some time after the return of consciousness. The honey had a bitter taste. History relates some cases of honey poisoning. In Xenophon's time it seemed to be a fairly common event. He describes the symptoms as consisting of vomiting, diarrhoea, a staggering gait, and subsequent delirium. In 1790 in North

America Barton says it was frequently observed in Florida, Pennsylvania, and New Jersey. Hasemann reports 2 cases occurring in Altdorf in Switzerland. Jenner describes cases of poisoning following the administration of honey tainted with *bombus terrestris* and *bombus lucorum*. The admixture of products from poisonous plants with the honey is the usual cause of poisoning; the azalea pontica and rhododendron ponticum are frequent offenders. The active principle in these plants has been isolated by Plugge, who termed it andromedotoxin, on the ground that it was first discovered in the *andromeda japonica*. The cases of poisoning in America were probably due to the same alkaloid. Plugge has also found andromedotoxin in *calmia angustifolia*. In Germany the aconite plant and *nerium oleander* are generally suspected in honey poisoning. (*BMJ* 1899;ii:674)