

Physicians and cancer services provide better care when they recognise the benefit that complementary therapies can bring to their patients' mental and physical wellbeing – as well as the potential risks.

Complementary and Alternative Medicine (CAM) is defined by the WHO as “a broad set of health care practices that are not part of that country's own tradition or conventional medicine and are not fully integrated into the dominant health-care system.” A more succinct definition, used by the UK National Health Service, is “treatment that falls outside of mainstream healthcare”.

CAM is generally seen to encompass practices such as acupuncture, herbal medicine, mind-body therapies (meditation, yoga), chiropractic care, homeopathy, naturopathy, ayurveda, traditional Chinese medicine (TCM), energy healing (reiki) and magnetic therapy. The estimation of the global market size of CAM varies, based on the sources and methodologies used, but it is thought to be around the US\$ 100 billion mark and is expected to grow at an annual rate of about 20%. The increasing popularity of CAM may appear novel, yet it has experienced fluctuations over the past few centuries, mirroring shifts in societal attitudes and healthcare trends.

## **CAM through the ages**

In antiquity, there were already differences between the medical treatments offered by formally trained physicians and remedies practiced by the general population. However, the distinction between these two approaches was often unclear and overlapping. In many cultures, medical knowledge was disseminated through a combination of formal training, apprenticeships, and shared healing techniques within communities, contributing to a blending of professional and popular forms of healthcare. Although certain beliefs and practices were held in contempt by trained physicians even in Ancient Greece, the dichotomy of alternative vs conventional medicine in the Western world is a much more recent development.

Homeopathy is often considered one of the earliest alternative medical systems to gain widespread recognition. Developed by Samuel Hahnemann in the late 18<sup>th</sup> century, it utilises highly diluted substances to elicit healing responses by administering compounds that mimic the symptoms of diseases in healthy individuals (from the Greek '*omoios*', meaning 'same'). Hahnemann was also responsible for coining the expression 'allopathic medicine,' to characterise the mainstream medical practices of his era, which, unlike homeopathy, treated diseases with remedies causing effects different from the disease itself (from the Greek '*allos*', meaning 'other'). Regular practitioners resented being called 'allopaths.'

The doors were thus opened to a long and often harsh debate between 'allopathic' and alternative, regular and irregular, evidence-based and non-conventional (not yet statistically proven) approaches. This may be finally heading towards a resolution thanks to a paradigm shift from both parties – the move towards a more holistic, patient-centred and tailored approach within evidence-based medicine, and a clearer definition of standards, roles and responsibilities within alternative, or better still, complementary practices. Over time, the term 'allopathic medicine' fell out of favour giving way to the current terminology of 'conventional medicine'.

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Besides homeopathy, by the mid-1800s, patients dissatisfied with conventional medicine could choose from a variety of alternative systems, including herbalism, [hydropathy](#), [Thomsonianism](#), [mesmerism](#), and [eclectic medicine](#), each offering distinctive approaches to healthcare and diverging from the prevailing medical practices of the time.

Scientific advancement around this time led to a revolutionary transformation of conventional medicine, establishing it on a far more solid scientific foundation and enhancing its capability to treat and prevent disease with unprecedented effectiveness. As a result, the public was deeply impressed, and reoriented its allegiance back to regular medical practice. However, by the end of the 1800s three new alternative systems – namely, osteopathy, chiropractic, and naturopathy – gained momentum, as the new surgical operations, vaccines, and drugs were increasingly seen as having the potential to both benefit and harm patients. Campaigning under the banner of ‘drugless healing,’ these alternative systems grew rapidly in support.

In the ‘golden age of medicine’ spanning the 1930s, 1940s, and 1950s, dramatic changes occurred in the experience and practice of medicine, along with the transformation of the healthcare delivery system. There were profound advances in immunisation, drug discovery, and the control of infectious diseases thanks to the introduction of very efficacious drugs.

Vaccines and antibiotics, together with techniques in food conservation, were responsible for the ‘epidemiological revolution’ of the second half of the 20<sup>th</sup> century, extending life expectancy at birth from an average of 53 years to over 80.

Yet, as the burden of disease in industrialised nations shifted towards non-infectious conditions such as cancer, heart disease, and diabetes, public belief in the hegemonic power of drugs began to cool. Attention turned instead to the need to improve the overall wellbeing of people living with chronic diseases – which was a growing population, as life expectancies increased. The failure of conventional medicine to address the emotional aspects of patients’ needs, in particular, became the catalyst for the holistic health backlash of the 1970s in the United States and to a lesser degree in Europe.

The term ‘holistic’ became popularised, emphasising the comprehensive treatment of the whole person, including their physical, mental, and emotional wellbeing. The importance placed on personalised care and the patient’s psyche and soul was a distinguishing feature, and one deeply rooted in ancient medicine, where health balance in the form of lifestyle and diet played a major role.

The 1960s and 1970s extended the horizon to include other medical traditions. While yoga and ayurveda had already been introduced to the West in some more scholarly quarters at the end of the 1800s by Indian practitioners and philosophers such as Swami Vivekananda, a broader introduction to the Western audience occurred in the latter half of the 20th century.

## **Towards integrative medicine**

The advancement of scientific principles in the 19<sup>th</sup> century, which was instrumental in shaping modern medicine, brought about a focussed approach centred on identifying and treating specific pathogens or pathologies. Healthcare became increasingly compartmentalised into various specialties, each focussing on specific organs or systems. Reliance on technical equipment and the constraints of time played a role in transforming the doctor-patient relationship into a less personal one.

As medical practices evolved, the greater practicality and efficiency of hospital care compared with

house visits became more apparent. Specialised care and advanced medical procedures brought great benefits, but the personal relationship between doctor and patient was replaced by a more anonymous and transactional dynamic.

Patients turn to complementary medicine when they feel that mainstream medicine is not fully addressing some of their needs. In most cases, they will be looking for ways to improve their quality of life – alleviating symptoms and side effects such as fatigue, nausea, and pain; reducing stress and anxiety; gaining a greater sense of control over their disease and its management. CAM practitioners can also give personalised attention, often taking the time to understand the individual's unique circumstances, preferences, and holistic health goals – something that the public health system does not usually cater for.

## **This model encourages practitioners from conventional and alternative medicine to work together**

While Western medicine continues to be driven by specialities and technology, a growing recognition of the importance of complementary, alternative and integrative approaches has emerged over recent decades. The term 'integrative medicine' describes a model of healthcare that seeks to address the physical, emotional, and spiritual aspects of a person's wellbeing. It advocates for a collaborative and comprehensive approach to healthcare, emphasising the importance of teamwork among healthcare professionals. This model encourages practitioners from diverse fields, including conventional medicine, complementary therapies, and alternative medicine, to work together to address the different aspects of a person's health.

### **An integrative approach to cancer care**

Given the psychological and emotional burden of a cancer diagnosis, and the many – and often quite harsh – treatments involved, the rationale for merging conventional and complementary approaches for this group of patients is clear. Indeed, cancer patients have always been proactive in seeking remedies to enhance their wellbeing, embracing a spectrum of approaches from supplements, over-the-counter medicine, and dietary regimens to meditation, yoga, and exercise.

Studies consistently show that use of CAM by cancer patients and survivors is quite common right across the world, though the types of therapies people opt for are quite culturally determined and can differ widely. CAM therapies are seen as essential to improve quality of life, reduce side effects of treatment, prolong lifespan, reduce inflammation, make chemotherapy more tolerable, and improve body condition and resistance.

While the oncology profession has historically taken time to grapple with the inclusion of CAM, attitudes have started to change. There is now a growing awareness of the positive effects that patient-driven initiatives can have on overall health outcomes. Most CAM, however, still lacks strong evidence of benefit. More worryingly, in the case of biologically active CAM, there is a risk of harm due to potential interactions with anti-cancer drugs. This issue is becoming increasingly complex as a steady stream of new drugs comes into use – each with their particular toxicities, metabolism, and mechanism of action.

Lack of information – and misinformation – also carries potential harms. A [US survey](#) conducted by the American Society of Clinical Oncology (ASCO), published in 2018, reported that 39% of

Americans are under the mistaken impression that alternative therapies alone can cure cancer, with those views being particularly prevalent (47%) among younger respondents – those aged 18–37.

This level of misconception points to the need to promote integrative oncology as a standard approach worldwide, to ensure that patients are made aware of CAM that could potentially benefit their wellbeing, that they are informed about potential dangers of biologically active CAM, and that they get the opportunity to talk through misconceptions about what CAM can and cannot achieve in the cancer space.

## **CAM: what we know, what we need to find out**

Although the number of studies on integrative medicine and cancer are increasing, there is still need for further research, especially in the advanced and metastatic setting. Information on the current state of evidence for CAM therapies can be found in the [Clinical Practice Guidelines](#) on the Evidence-Based Use of Integrative Therapies During and After Breast Cancer Treatment that were published by the Society for Integrative Oncology (SIO) in 2017, and [endorsed by the American Society for Clinical Oncology \(ASCO\)](#) in 2018.

The broad picture is that levels of recommendation are very high for the benefits of meditation and yoga in improving quality of life, and there is some evidence that acupressure and acupuncture may be able to reduce chemotherapy-induced nausea and vomiting. Guidelines such as those published by [SIO/ASCO in 2022](#) support the use of complementary medicine for cancer related pain. These include massage, acupuncture or acupressure, reflexology even hypnosis for procedural (surgical) pain.

On the other hand, with the exception of vitamin D, vitamins and supplements are usually not recommended, because of potential interactions with medical treatments.

But even among the types of complementary therapies most supported by scientific evidence, many questions remain to be answered.

## **Mind and body medicine, physical exercise**

When we look for quality of life, side effects and symptoms management, there are two blockbusters: mind and body medicine and physical exercise. They are both recommended with a plus or even double plus. However, looking at the available literature, the picture is not that clear as to how the two disciplines compare.

A systematic review [published by a Canadian team in 2020](#) shows that yoga clearly improves quality of life and reduces fatigue, but is no more effective than physical activity. A systematic review [published by a team in Madrid in 2023](#) compared the impact on quality of life and symptom control in breast cancer patients between interventions using a combination of exercise and diet versus exercise and supplements versus exercise alone. They found that both combined interventions work, but are no better than exercise alone. A weekly 150 minutes of physical activity for all patients with cancer is recommended in the literature, although the amount and intensity should be adjusted to the individual.

## **Acupuncture**

Evidence on the benefits of acupuncture on alleviating treatment-related symptoms in cancer patients has also been explored in a systematic review [published in 2021 by a US team](#). The analysis of results from several trials covering 35,000 patients, showed that acupuncture does no harm and

improves quality of life. But there is no clear evidence that it is superior to other methods.

## **Nutraceuticals and herbal products**

As to the role of 'nutraceuticals' – the use of certain foods or parts of a food for medicinal purposes – for cancer patients, a systematic review [published by an Italian team in 2023](#) concluded that we do not have sufficient knowledge on the effect of vitamins on apoptosis or cellular differentiation, thus the authors do not recommend routine use. Again, vitamin D could be an exception, but the evidence about the role of its supplementation in cancer is still limited.

The use of special diets and supplements is known to be widespread among cancer patients, and fostering a more informed, evidence-based approach to their use is essential to avoid doing more harm than good. A [French nationwide, cross-sectional study](#) of cancer patients and survivors published in 2023 showed that 56.8% of patients being treated for cancer use dietary supplements, with a further 32.8% using herbal supplements, among other bioactive substances. A fifth of all patients and survivors practising self-medication did not disclose their practice to their health professionals, and 85% answered 'no' to a question about whether self-medication can lead to drug interactions or adverse effects.

The poorly informed use of certain herbal products by patients being treated for cancer is a particular concern. A [Canadian survey](#) of patients reporting for treatment at the Northeast Cancer Centre in Sudbury, Ontario, found that the number of patients who reported use of biologic products increased from only 15.6% before their cancer diagnosis to 51.8% after. In that study vitamin D topped the list of supplements and nutraceuticals used by patients, which is supported by the evidence, but many of the other substances have not been shown to be of benefit, with some potentially interfering with cancer treatments.

A survey on the use of complementary and alternative medicines [conducted in Sweden](#) among cancer patients visiting the outpatient department at Stockholm's Karolinska Hospital, published in 2019, showed slightly contrasting findings, with 34% reporting using such therapies at some point in their lives, but only 26% reporting current usage. But there were similarities to the Canadian study regarding the type of products/practices used, with 'vitamins and minerals' (covering 22 different substances) being the most frequently used (66%) followed by 'natural products' (covering 32 different items including herbal products), used by 61%, closely followed by various mind/body techniques including relaxation (59%) and massage (57%). The study found that patients showed high satisfaction with the use of CAM to help with the cancer treatment, and believed that cancer care providers should be able to discuss and consider the use of integrative medicine modalities.

## **Implementing integrative oncology**

It is increasingly evident that we need to deliver care in a way that integrates conventional and complementary therapies. This can only be done by a multiprofessional team that explores all the available options, with the active participation of patients, to create personalised plans for their treatment and care.

A first step is to acknowledge that patients are already using complementary therapies, and to recognise the positive difference that many interventions – mind-body therapies in particular – have been shown to make to patients' quality of life and general wellbeing. Oncology teams need to be part of the conversation patients have about the benefits and the risks, and integrate therapies that could enter into care plans. Advising and helping patients access these therapies is not an 'added extra', but is rather 'integral' to the role of oncology teams.

Building trust is crucial in fostering open discussions, allowing for the provision of guidance on potential benefits, and – importantly – cautioning against any adverse effects stemming from interactions with ongoing treatments. [Many patients do not disclose](#) to their physician their use of biologically based complementary medicines, such as dietary supplements and herbal products. Sometimes that's because they were never asked about it. Often they are reluctant to disclose what they are taking, for fear of being criticised or ridiculed.

Engaging respectfully and constructively with patients about their choices is therefore essential. Trust has to be earned, and even subtle signals of cynicism or hostility can lead to communication breakdowns. This approach is likely to lead to better adherence to treatment plans, improved patient satisfaction, and better health outcomes.

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