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**The use of complementary and alternative medicine (CAM) is commonplace in people managing chronic disease. This *RESEARCH ROUNDup* highlights evidence for the medication-based CAM used to address chronic conditions considered national priority areas in Australia. Nevertheless, more high quality evidence on prevalence of use, concurrent use of other medications and profiles of CAM users particularly for specific conditions is required for consumers, clinicians (both CAM and non-CAM), regulators, educators, researchers, policy-makers and funders.**

## Chronic disease in Australia

Chronic disease is defined as illness that is prolonged in duration, does not often resolve spontaneously, is rarely cured completely.<sup>1</sup> Chronic diseases are currently responsible for more than 80 per cent of Australians' burden of disease and injury.<sup>2</sup> Over 40 per cent of the adult population has one or more chronic conditions.<sup>2</sup> Management of chronic conditions is predominantly a task for patients and their families/carers. A person with a chronic disease, such as diabetes, is provided with six hours of health professional contact in the Australian health system, leaving a total of 8 760 hours in which they need to manage on their own; monitoring blood sugar, administering insulin and other medications and managing diet, physical activity and stress.<sup>3</sup>

## CAM use in chronic disease

One of the central tenets of the *Building a 21st Primary Health Care System Strategy*<sup>4</sup> is to improve self-management of chronic disease. Patients with chronic diseases increasingly look for healthcare outside of conventional health systems<sup>5</sup> and often use complementary therapies alongside prescription medications.<sup>6</sup> CAM can be taken to treat a disease, to treat symptoms or side-effects of treatment and for prevention.

It is difficult to identify 'best-evidence' to inform decisions about CAM use, particularly as there is no universally agreed definition of CAM.<sup>7</sup> Medicinal products containing herbs, vitamins, minerals, nutritional supplements, homoeopathic medicines and certain aromatherapy products are referred to as complementary medicines (CM). Other labels include 'alternative medicines', 'natural medicines' and 'holistic medicines'.<sup>8</sup> Additional terms sometimes used in discussing these healthcare practices include 'natural medicine', 'non-conventional medicine' and 'holistic medicine'.<sup>9</sup> CAM is commonly divided into two categories based on the modalities employed – medication-based (eg. omega 3, green tea, st john/s wort, multivitamins) or procedure-based (eg. acupuncture, massage, naturopathy, osteopathy) manual therapies.

## Research Directions

Table 1 provides a summary of systematic reviews undertaken in the last decade by the Cochrane Collaboration of CM use in the treatment of chronic conditions which are recognised as national

health priorities in Australia.<sup>10</sup> What becomes apparent from this collection is that an enormous variety of CM is being trialled and there are ongoing challenges of rigour, quality and confounders. Critically this table only provides a summary of systematic reviews of Randomised Controlled Trials (RCTs); there are many other CAM therapies under investigation including Vitamin D and omega-3 polyunsaturated fatty acids.<sup>7</sup>

In Australia the NHMRC have invested over \$6 million of research funding to strengthen acceptance and integration of alternative therapies into the healthcare system.<sup>11</sup> One such project is the CAM, Economics, Lifestyle and Other Therapeutic approaches (CAMELOT) for chronic conditions project, a three year (2008-2011) series of studies designed to enhance understanding of the use of CAM in Australia.<sup>12</sup> A multi-phase mixed methods interdisciplinary investigation has been undertaken, which explored why people under treatment for Diabetes Mellitus (DM) and cardiovascular disease (CVD) presented to and used CAM practitioners or therapies. Preliminary findings revealed that when discussing CAM therapies, there was confusion no matter how thoroughly it was defined or explained. For example, many potential participants indicated that they did not use any CAM, but went on to say that they took over-the-counter vitamins, minerals or herbal medicines, or they regularly had massage or saw a chiropractor, and so on.<sup>12</sup> Phase 2 of the CAMELOT project collected survey data ( $N = 2\ 915$ ) on CAM users. The profile of chronic disease patients using CAM was described as somewhat different to CAM users in the general population. Almost a third of the sample used CAM specifically for the treatment of CVD or DM. In contrast to suggestion that CAM is simply a 'middle class commodity' (p. 186)<sup>13</sup>, CAM users in the sample were often from lower socioeconomic status (SES) groups, with household incomes less than \$50 000 p.a.<sup>12</sup>

A similar pattern of CAM use and SES has been observed in older (>80 years) Australians with CVD, DM and Chronic Obstructive Pulmonary Disease.<sup>14</sup> An Australia-wide survey asked about health service use and co-ordination in relation to chronic illness. Findings illustrated that a substantial percentage of consumers with chronic conditions (including DM, CVD or COPD) sought advice from CAM practitioners. In particular higher levels were observed for people with anxiety/depression (12%) renal conditions, chronic pain and osteoporosis.<sup>14</sup>

Other reviews in Australia have targeted antioxidant use for cardiac patients<sup>15</sup> and omega-3 fatty acids for people at ultra-

## Complementary medicine use in chronic disease: What is the evidence?

**Table 1** Chronic disease priority areas and complementary medicine research—a summary of systematic reviews<sup>18</sup> in the last 10 years

Priority areas	CM	RCTs	Findings
Arthritis & Osteoporosis	Herbal therapy (osteoarthritis)	5	Mixed, functional and pain improvement; less reliance on anti-inflammatory medication
Asthma	Homeopathy	6	Inconclusive conflicting results due to lung function definition between studies; more RCTs and observational data required to assess differing methods of homeopathic prescribing
	Herbal interventions for adults and children	27	Mixed findings – some improved lung function; but findings hampered by variety of treatments assessed, poor reporting and lack of available data
Cancer	Mistletoe therapy during chemotherapy	21	Some evidence of benefits on measures of quality of life during chemotherapy for breast cancer, results require replication
	Ganoderma lucidum	5	Improved quality of life, minimal side-effects; enhanced tumor response and stimulated immunity; considered as an adjunct to conventional treatment; review will be updated every 2 years
	TCM for induction of remission (advanced/late gastric cancer)	85	Limited weak evidence for improved leukopenia and decreases in adverse events in the digestive system due to chemotherapy; no improvement in short-term remissions. Mixed findings due to different combinations of TCM, well-designed clinical trial required
Cardiovascular Disease	TCM for hypercholesterolemia	20	Promising results for Xuezhikang reducing total cholesterol
	TCM for acute ischaemic stroke	64	Some improved neurologic outcomes, inadequate data to draw reliable conclusions; larger, rigorous trials required
	Shengmai for heart failure	9	May be beneficial for improving function when paired with usual treatment; high quality, long-term data required
Diabetes	Type 2 diabetes and ayurvedic herbs	6	Some significant glucose-lowering effects with herbal mixtures
Mental Health	TCM adjunct with antipsychotics for schizophrenia	7	Mixed; benefit in combination with antipsychotics, less constipation; since this review 45 more trials have been conducted yet to be reviewed
	Homeopathy for ADHD	4	No significant treatment effects on symptoms of inattention or hyperactivity or related outcomes; currently little evidence for efficacy
	Gluten and casein-free diets for autism spectrum disorder	2	High rates of CAM use in for children with autism; current evidence for efficacy of these diets is poor

NB: Traditional Chinese Medicine (TCM)

high risk of psychosis<sup>16,17</sup> although RCTs are yet to be undertaken. Dementia has most recently been added as a chronic disease national priority area. As there currently exists no simple pharmacological option for treating Alzheimer's disease, there has been substantial funding for multi-institutional research on the efficacy of natural medicines in improving memory, cognition, brain function and evaluation of nutritional supplements for treatment.<sup>7</sup>

### Summary

CAM use for chronic disease management is a rapidly developing area and has the potential for significant benefits. CAM use is giving people with chronic disease additional choices for management of their conditions though there are concerns about understanding what is and is not a CAM and lack of disclosure to health professionals. Research for some interventions is in its infancy and there is a need to target future funding and resources not only into a rigorous evidence-base but also into developing an understanding about how CAM and conventional (biomedical) approaches can work together.

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