

# Oncology Massage Research and Training Update

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11

Despite oncology massage having been well established internationally for more than a decade,<sup>1</sup> Australian massage professionals have been slow to embrace this sub-specialty of massage for people with cancer or who are undergoing cancer treatment.

The role of remedial and sports massage for injury management and health and wellbeing is well established. There is also a growing body of scientific evidence that supports what we know: that massage confers significant therapeutic benefits for the person with cancer. Massage schools teach their students that cancer is a contraindication for massage. Nevertheless, there are volunteer and paid massage therapists in hospitals, aged-care facilities, day spa services and in private clinics around the country who are massaging clients with cancer.

Cancer remains a contraindication unless the therapist has sub-specialty training in oncology massage techniques and understands the science of cancer, cancer treatment and toxicities. Importantly, the massage therapists may be confronted with their own mortality and burdens when working with clients with cancer and who are experiencing life changing events and may be on the edge of life. An important element of oncology massage training therefore is preparing the therapist for this experience.

This article summarises some of the scientific evidence base for oncology massage and highlights the important role that sub-specialty trained massage professionals play in the developing field of integrative oncology and medical massage.

## THERAPEUTIC MASSAGE AND CANCER

Massage is the systematic application of pressure to skin in order to affect muscle and connective tissue with the aim of improving blood and lymph circulation. The intention is to detoxify and encourage healing in acutely or chronically injured tissues which may clinically manifest as pain and restricted range of motion.<sup>2</sup> Massage therapy is also commonly used for stress reduction or relaxation. While the physiological stress reduction response to mechanical stimulation by massage has not been formally elucidated, neuroendocrine and immune function effects have been implied. Moraska et al (2008)<sup>3</sup> reviewed 25 studies published in peer reviewed journals to examine the effect of massage, delivered by a trained massage therapist, on physiological variables associated with stress. Although studies were heterogeneous in design and the methods were of variable quality, reductions in the "stress hormone" cortisol and heart rate in people

receiving massage were consistently reported after single treatments and there was some evidence of reduction in diastolic blood pressure. Similarly, in their review of studies on massage in patients with a variety of medical conditions, and normal subjects under stressful conditions, Field et al (2005)<sup>4</sup> found across studies an average reduction in cortisol of 31% in patients in response to massage as well as an average increase in the neurotransmitter serotonin by 28% and dopamine by 31%. Both of these transmitters are recognised as biological regulators of a number of functions associated with well-being including mood, appetite, sleep, and some cognitive functions.

In a randomised controlled trial (RCT) in normal subjects, with light touch as the control group, massage for 45 minutes resulted in a large effect size decrease in arginine vasopressin responsible for controlling blood pressure, and a small effect size decrease in cortisol.<sup>5</sup> Consistent with decreased cortisol levels and cortisol's action of suppressing the immune system, there was an increase in circulating lymphocytes and decreased levels of interleukins and other inflammatory mediators, providing some support to the hypothesis of an effect of massage on immune function. Increases in natural killer cells in response to massage have also been reported in a small cross-over study of massage in patients with HIV.<sup>6</sup> This neuroendocrine response has been demonstrated in limited clinical studies examining the physiological effect of massage in people with cancer.

In a small pilot RCT by Hernandez-Reif et al<sup>7</sup> 34 women with breast cancer were randomised after surgery to a massage therapy group where they received 30 minute massage treatments three times a week for five weeks or to a control group where they received standard care. In addition to significant immediate improvements in psychosocial outcomes, including reductions in depressed mood and anxiety compared to baseline, patients receiving massage also had significantly increased serotonin and dopamine, natural killer cells and lymphocytes when compared to control patients. Further study was undertaken to examine whether the effects observed were due to an indirect relaxation response alone of massage and were not effects mediated by a tactile response, by including a progressive muscle relaxation group.<sup>8</sup> When

compared to the control group, both the massage therapy and relaxation treatments had immediate effects on depressed mood, pain and anxiety but, after the five weeks of treatment, only the massage therapy group had significant improvements in qualitative measures of well-being as well as increased levels of dopamine, serotonin, natural killer cells and lymphocytes, when compared to baseline. These results were further supported by a RCT of massage in 30 women undergoing radiation therapy.<sup>9</sup> In this study patients randomised to massage therapy treatment had a decrease in the deterioration of natural killer cell activity, which occurs in response to radiotherapy, as well as a lowered heart rate and systolic blood pressure when compared to control patients.

For the person in treatment for cancer or recovering from cancer, massage has the potential, through these physiological responses, to confer therapeutic benefits for the management of symptoms of cancer or the side effects of cancer treatment.<sup>10</sup> These include symptoms that may not be adequately controlled pharmacologically or by other medical or psychological interventions. There is a plethora of literature from observational studies that show that massage therapy is therapeutically effective in the acute management of cancer symptoms. Higher level evidence of effectiveness is also available from randomised clinical trials that show that massage intervention results in positive outcomes defined as immediate reductions in symptoms of acute nausea,<sup>11,12</sup> general and neuropathic pain and discomfort,<sup>8,13-16</sup> fatigue,<sup>8,14,15</sup> anxiety,<sup>7,15,17,18</sup> depression and insomnia.<sup>19,20</sup>

The concept of massage being a positive touch experience has also been validated by qualitative studies of patients undergoing cancer treatment. The meaning of receiving massage during cancer treatment has been described in a phenomenological study by Billhuitt et al (2007)<sup>21</sup> where five themes were described. These were that i) massage offered a distraction from the frightening experience of cancer treatment, ii) receiving massage turned the negative experience of cancer treatment into a positive experience, iii) massage offered a sense of relaxation, iv) massage conferred a confirmation of caring, and v) patients reaffirmed the concept of massage feeling good.

With this growing body of evidence the Cancer Council of Australia<sup>22</sup> and State Cancer Councils<sup>23-25</sup> have produced position statements and dedicated patient information resources on the use of complementary therapies for people with cancer that advocate the benefits of massage. Published integrative oncology guidelines state that modalities such as massage are "strongly recommended to be incorporated into a multidisciplinary approach in reducing anxiety, mood disturbance, chronic pain and improving quality of life in cancer patients".<sup>26</sup> As a result, the therapeutic benefits of massage are increasingly being appreciated by patients undergoing cancer treatment and this is translating into an increased use of massage services.

In a recent audit of utilisation, the patient-reported main reasons for electing to have massage were determined from the

first 46 clients who underwent a total of 116 massage sessions in an oncology-dedicated massage clinic at the Tennyson Centre, South Australia (Table 1). The massage was performed by massage therapists who had undergone training through the National Oncology Massage Training (OMT) program. For 70% of patients (n=32), relaxation was one of the main reasons for requesting massage. Lymphoedema management was the second most common reason. Massage therapists with oncology training also have training in manual lymphatic drainage and, therefore, can provide treatment for patients with mild limb swelling or discomfort due to lymphoedema, and provide important education for self-management.<sup>27</sup> Massage for the relief of pain or musculoskeletal symptoms was the third most common reason for requesting massage (n=11, 24% of patients). As the audited activity did not include patients receiving massage in day infusion units while receiving chemotherapy, the use of massage for chemotherapy related nausea was less common.

TABLE 1: REASONS FOR REQUESTING MASSAGE

Reason*	No. patients
Relaxation	32(70)
Lymphoedema management	15(33)
Pain/musculoskeletal symptoms	11(24)
Immediate pre or post-treatment stress/anxiety management	5(11)
Fatigue	2(4)
Lymphatic drainage	1(2)
Breathing difficulties/congestion	1(2)
Nausea	1(2)
Scar tissue management	1(2)
Application of skin lotion to help manage radiation induced dermatitis	1(2)

\* patients may have reported more than one reason for requesting massage

## ONCOLOGY MASSAGE TRAINING

In the hospital setting massage has historically been delivered by nursing staff and volunteers. However, in most acute care, outpatient chemotherapy and palliative care settings, nursing staff are often already extended in their clinical care responsibilities, and volunteers have limited capacity and ongoing training to provide massage. Thus, important opportunities for therapeutic intervention may be missed. Furthermore, although nurses are trained in patient care, often they are not formally trained in soft tissue structure, function and manipulation which underpin successful massage technique and treatment outcomes.

Importantly, without formal massage training, a lack of awareness of the contraindications for massage or the modifications and adjustments required to tailor conventional massage regimes for the patient with a history of cancer or being treated for active cancer, poses patient safety concerns, with the risk of adverse events. Some certified massage therapy courses list cancer as a contraindication for massage. This is because there are a number of important considerations when planning massage treatments for patients with cancer.<sup>26, 27</sup> Important technique modification involves pressure and site restrictions. Patients are at higher risk of easy bruising, particularly if they are on anticoagulant therapy or have bleeding tendencies. Patients may also be at greater risk of skin irritation due to chemotherapy drugs and radiation induced dermatitis. Patients may be immunosuppressed due to chemotherapy or other treatment regimes and may be at risk of reduced bone density in response to steroid use or the disease process itself, metastases to bony sites, radiation therapy or certain chemotherapy regimes. Patients may be on pain medications which lower their awareness of normal pain thresholds in response to massage. Patients may also have sensitive limbs due to chemotherapy induced neuropathy in the hands or feet.

The risk of lymphoedema is very common in patients who have had surgical excision of and/or radiotherapy to lymph nodes.<sup>28</sup> While the correct technique of massage (manual lymphatic drainage) can confer marked benefits for the management of lymphoedema, inappropriate massage technique and pressure can also put the patient at risk of clinically significant lymphoedema. Deep tissue massage, used for detoxifying tissues and repair, may overload the lymphatic system and the major organs whose function may be compromised during, and for some time after, chemotherapy or radiation therapy. Massage that is too demanding for people recovering from their cancer treatment can cause flu-like symptoms. Oncology massage is therefore largely limited to effleurage type massage using fingers and palms without any localised or intense pressure.

Safety is the primary responsibility of the massage therapist. Our experience, supported by limited published data<sup>29</sup> suggests that, when delivered by qualified practitioners trained and experienced in working with people with a history of cancer, serious adverse attributed to massage are rare. Consequently integrative therapy guidelines recommend that massage therapy should be delivered by an oncology-trained massage therapist.<sup>26</sup>

The psychosocial contribution that massage can make to a person's treatment or recovery has already been highlighted. An important component of oncology massage training therefore, is the preparation of therapists for this added responsibility. Therapists must maximise the patient-practitioner relationship by providing professional treatment without fear or pity. This ensures that the full therapeutic benefits are experienced by patients. In a RCT examining effects of massage on mood and discomfort in palliative cancer patients,

the treatment effect of massage on mood was significantly enhanced if a patient was treated continuously by the same massage therapist.<sup>14</sup> This finding highlights the importance of the patient-therapist relationship in effecting maximum therapeutic benefit. With dedicated therapeutic massage personnel in inpatient and outpatient oncology settings, massage can therefore be included in the available evidence-based treatment offered by oncologists as part of comprehensive multidisciplinary cancer care.

Despite the existence of volunteer-based complementary therapy services in inpatient and outpatient oncology settings in Australia, no formal oncology massage training is provided to these volunteers. Difficulty in setting benchmarks for volunteer services, maintaining continuity of service and the inability to enforce continuing education requirements on volunteers makes this model of service delivery a less attractive one. Raising education standards also drives quality assurance within the industry, which translates into continuous improvement in client care. Professional bodies representing massage therapists are working hard to improve the professionalism of the industry and to raise benchmarks for standards of care. This is with the aim of facilitating professional interaction and respect as health care moves towards more integrative models of care that acknowledge an important role of complementary therapies in conventional medical settings. Ensuring that massage therapists who work with people with complex medical conditions are equipped with an understanding of evidence-based complementary medicine also facilitates best practice. Understanding the evidence-base raises the awareness of the gaps in knowledge and the need for further clinical research, to justify the role of these health care services in conventional medical care.

#### AUSTRALIAN NATIONAL ONCOLOGY MASSAGE TRAINING PROGRAM

A National Oncology Massage Training Program (OMT) was established in 2007 for massage and Bowen therapists wanting to treat clients with a history of cancer or who are in active cancer treatment. The OMT program aims to ensure national benchmarks and standards of care are met, that therapists are equipped with essential emotional tools and that therapists embrace an evidenced-based medicine approach to their service delivery. The four module program is modelled on a program that has been in operation for more than 10 years in the United States.<sup>27</sup> In December 2011, OMT signed a contract to present Modules III and IV in a public hospital in Melbourne CBD in the hope that this will further the development of massage services to cancer patients.

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