

Massage Therapy for Pain—Call to Action

Conflicts of interest: The views expressed in this article are those of the authors and do not reflect the official policy of the Department of Army/Navy/Air Force, Department of Defense, or United States Government. There are no conflicts of interest to report.

Disclosure: The Evidence for Massage Therapy (EMT) Working Group (diverse stake-holders making up the steering committee and subject matter experts) contributed to the protocol development and provided input throughout the entire project; all analyses were conducted independently by Samueli Institute. All recommendations set forth in this report were made collectively with the EMT Working Group and Samueli Institute during an expert round table and are based on the evidence revealed through the systematic review and gaps that emerged through the process.

“It’s not that we need new ideas, but we need to stop having old ideas.”
—Edwin Land (1909—1991)

Although Edwin Land is best known for his work developing camera technology as the co-founder of the Polaroid Corporation, his quote is appropriate for issues facing modern medical practice today. If the preponderance of television commercials peddling the next breakthrough in pharmaceuticals is any measure, medical science is always searching for the next profitable new idea. On the one hand, the American pharmaceutical industry is the envy of the modern world, developing treatments and cures for diseases believed unquarable just a decade ago. On the other hand, the ‘pill for every ill’ mentality of many Americans, including those investors in pharmaceutical stocks, has generated significant health and social issues for this country. This issue is exemplified by the major public health crisis of chronic pain in America and has been highlighted recently by its most prominent symptom—opioid misuse and addiction.

In 2013, drug overdose in the United States was the leading cause of injury death, surpassing motor vehicle accidents [1]. Shockingly, the majority of these overdose deaths were related to prescription opioid pain medications often in combination with benzodiazepines [2]. Clearly there is a growing problem with prescription pain medication use and the medical community’s response to patients with pain. The federal government has responded to this crisis, first through a Presidential Memorandum titled Addressing Prescription Drug Abuse and Heroin Use in October 2015 [3] that was quickly

followed by the recently released Centers for Disease Control and Prevention (CDC) draft Guideline for Prescribing Opioids for Chronic Pain [4]. The CDC’s efforts to provide clinicians guidelines for prescribing pain medications is laudable but incomplete because the root cause of this issue, poorly managed pain in America, is not specifically addressed. One experienced pain management specialist described the CDC effort in dealing with the opioid problem akin to treating a cholera outbreak in the modern era by merely treating the cholera patients without bothering to examine the community’s wells or other water sources. This criticism is understandable because many pain management specialists view the issue of prescription opioid use as a symptom of the much larger medical crisis of poorly managed pain. Although pain is a universal experience that all humans can relate to, there is a fundamental lack of pain education and understanding by both patients and the healthcare professionals who care for them. The Institute of Medicine (IOM) report, *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research* Summary [5], noted that pain generally receives little attention in medical training programs. This issue was particularly poignant within the primary care community, the front lines of pain management. Recently the National Pain Strategy, designed to operationalize the IOM report recommendations, was released by the US Department of Health and Human Services. This strategy specifically calls for a “system of patient-centered integrated pain management practices based on a biopsychosocial model of care,” and massage therapy certainly fits into this new pain care paradigm [6].

The effectiveness of opioids in the management of pain is unquestionable. The blessings of analgesia with morphine have been enjoyed since the Civil War with, unsurprisingly, many of the same public health consequences we are dealing with today. Terry and Pellens in their 1928 book, *The Opium Problem* [7], noted that “following the Civil War the increase in opiate use was so marked among ex-soldiers as to give rise to the term ‘army disease’ and today in more than one old soldiers’ home are cases of chronic opium intoxication which date from this period.” The major differences between then and now are the significant medical advancements made in understanding pain in the context of modern physiology and anatomy and its impact on the biopsychosocial spectrum of patient health. It is not that opioid medications are inherently bad. On the contrary, as a diverse group of pain management specialists, we would hate to lose this valuable pain

management option. It is our incomplete understanding of opioids and their appropriate role in pain management, as well as a healthcare workforce unprepared by their training to manage pain effectively, that often results in the exclusion of all other options, and has led our patients and us into this predicament.

Within this context, the three massage therapy evidence reviews [8–10], published in the July, August and September issues of *Pain Medicine*, are so timely and important. Funded by The Massage Therapy Foundation, through the support of the American Massage Therapy Association, Samueli Institute, using their Rapid Evidence Assessment of the Literature (REAL©) process [11], independently evaluated the existing clinical science regarding the impact of massage therapy on function in patients experiencing pain. We were initially convened as the Evidence for Massage Therapy (EMT) Working Group to ensure our individual voices were equally heard and that the research questions formulated addressed a variety of stakeholder needs for evidence based decision making to occur. We were then assembled at an expert Round Table and tasked with using a transparent expert panel process to develop consensus massage recommendations for clinical practice and future research based solely on the evidence generated and presented by Samueli Institute. This extensive massage therapy evidence review is divided into three parts: part I evaluates pain in the general population [8], part II looks at cancer pain patients [9], part III explores surgical pain populations [10]. This evidence evaluation process carried out by Samueli Institute enabled us to not only pinpoint the current gaps in the science to develop future research recommendations, but to also make evidence based decisions regarding the use of massage therapy as a viable pain management tool for a diverse patient population experiencing pain.

If a prolonged history of use in medical practice was the only standard required for acceptance of massage into modern medical systems of care, this series of articles would not be needed. Ancient medical texts to include the works of Hippocrates describe massage as an effective therapy for sports or war injuries [12]. Notwithstanding this laudable record of persistent therapeutic use of massage through the centuries, frustratingly the mechanisms to explain the effect of massage on relieving pain are lacking. Proposed mechanisms for the effects of massage have been categorized into biomechanical, physiological, neurological, and psychological effects and many researchers believe a combination of effects in each category are likely at play [13]. Doctor Siegfried Mense has done extensive work in elucidating the pathogenesis of muscle pain by characterizing muscular trigger points, muscle thixotropy, and more recently the multitude of muscle nociceptive nerves and associated endogenous neuromessenger molecules they respond to [14,15]. It is plausible that effects of massage interrelate with these muscle pain generators in an inhibitory fashion. Recent work by Crane

et al. [16] evaluated the effect of massage on 11 exercise induced quadriceps muscle damage volunteers. Divided into massage and no massage groups, muscle biopsies were obtained at baseline, 10 min after massage (in that group), and 2.5 hours later. Massage was found to attenuate the production of inflammatory cytokines in the muscle samples thereby reducing local inflammation. Other studies have clearly demonstrated the psychological effects of massage in producing a relaxation response and functional magnetic resonance imaging studies have suggested massage influencing regions of the brain responsible for stress and emotion regulation [17]. Despite these intriguing findings, the nature of the massage therapeutic effect remains tantalizingly resistant to detailed explanation. Additional effort in this area is definitely warranted.

While massage is not a 'new' idea or a panacea for pain, the evidence provided here establishes massage therapy as a reasonable partner in the pain provider's arsenal of therapies.

The 'old' and too prevalent idea of pain management monotherapy with opioids has resulted in considerable relief of suffering historically, but we now understand that this approach, although clinically easy and beguilingly expedient, has resulted in an epidemic of morbidity and mortality in our patients with chronic pain, particularly those taking high doses, with co-prescription of benzodiazepines, and with psychiatric co-morbidities, particularly substance use disorders. Compared to this outdated approach to pain management, massage therapy is a refreshing addition with little to no morbidity and evidenced based efficacy for many patients. Massage therapy will not remove the need for medications in pain management and it will not be an appropriate therapy for every pain patient, but it should be considered as a routine complementary (not alternative) part of an individualized, multimodal, and stepped care pain plan for pain management.

These evidence reviews highlight the gaps that future research needs to fill in order to move toward implementation. It is our hope that the field of massage therapy will begin to critically think about and prioritize the field's research needs to guide the development of a robust future research agenda. We will require new methodologies to calculate reimbursement for medical services to realize the benefits of massage therapy in our present medical system. We will need to value patient reported outcomes over procedures and pills. It will require new thinking on what constitutes pain therapy success beyond the current focus of pain intensity, and shift toward an emphasis on patient function, to include general activity, sleep, mood, and stress. It will require freeing ourselves from old ideas of pain as a symptom of some other ailment and toward an understanding of pain as a disease process of the peripheral and central nervous system that can debilitate a patient long after a patient has recovered from the inciting injury or disease. In short, massage therapy is the evidence-based new

thinking that will, with other integrative, non-pharmacologic approaches, help pain medicine overcome the current opioid-focused old thinking that has devastated so many lives.

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