

# How Much Massage Therapy is Enough?

By Massage Therapy Foundation Contributor

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This month's research summary brought to you by the **Massage Therapy Foundation** features a study completed by Adam Perlman and colleagues entitled, "Massage Therapy for Osteoarthritis of the Knee: A Randomized Dose-Finding Trial." There are three things that we really like about this published research.

First, it calls attention to a condition that most massage therapists address frequently. Second, it is the first study that looked at dose to inform how much massage is needed to achieve good outcomes for this condition. And third, it resulted in a massage protocol that was respectful of the individualized nature of practice.

Like many degenerative joint diseases, osteoarthritis (OA) of the knee is painful and limits function. Typical drug therapies are not always helpful and have unpleasant side effects. Six years ago, Dr. Perlman and his team reported the results of a pilot study that offered massage therapy as a feasible, safe and potentially effective treatment for the 27 million Americans that suffer from this condition. The purpose of the current study was to define the "optimal dose" of massage therapy for OA. Once determined, the optimal dose can be used in a more sophisticated study to expand on the current findings.

Participants in the study included 125 adults at least 35 years old with radiographically confirmed OA of the knee and pain rated between 4 and 9 on a 10-point visual analog scale. Along with a wait list control group (usual care), participants were randomized to one of four regimens in which time and frequency (dose) of massage varied:

- 30 minutes/week for 8 weeks (240 minutes total);
- 30 minutes/biweekly for 4 weeks followed by 30 minutes/weekly for 4 weeks (360 minutes total);
- 60 minutes/week for 8 weeks (480 minutes total); or
- 60 minutes/biweekly for 4 weeks followed by 60 minutes/week for 4 weeks (720 minutes total).

Swedish massage was provided by licensed massage therapists who provided input to develop 30- and 60-minute full body massage protocols specifically for OA of the knee. Although the protocol specified the percentage of time allotted for each body region, the order of the application was flexible to accommodate practitioner and patient preferences. Outcomes were assessed at baseline and at 8, 16 and 24 weeks. Measurements included the Western Ontario and McMaster Universities Arthritis Index (WOMAC), which assesses pain, function and joint stiffness; a visual analog scale (VAS) for pain; range of motion (ROM); and the amount of time needed to walk 50 feet.

After eight weeks of massage, there were significant changes in WOMAC global scores between the usual care group and the groups that received 60 minutes of massage, but there were no significant differences between the massage groups. There were also significant differences in the WOMAC pain and function subscales and VAS scores between usual care and the 60-minute doses. However, there were no significant between-group differences in the WOMAC stiffness subscale and time to walk 50 feet. ROM improved significantly only in the group that received the highest dose of massage (Group 4).

A dose-response curve was constructed using the WOMAC global scores after eight weeks. It demonstrated that as minutes of massage increased, improvement also increased, plateauing at the 480-minute dose. The optimal dose of massage to improve symptoms of OA of the knee was revealed to be 60 minutes once a week. This result is consistent with the results of their previous pilot study. Although massage ended after eight weeks, significant improvements in WOMAC global scores were observed in all massage groups after 16 and 24 weeks compared to baseline. This improvement was not observed in the usual care group. In addition, there were significant improvements in the WOMAC pain and function subscales in the groups receiving the three highest doses of massage after 16 and 24 weeks compared to baseline.

The National Center for Complementary and Alternative Medicine (NCCAM) has awarded Perlman and colleagues additional funds to continue their exploration of the efficacy of massage for osteoarthritis of the knee. Between-group differences after 16 and 24 weeks may be uncovered with larger sample sizes in their next study. Comparisons of massage to light touch, biological mechanisms (biomarkers) and cost effectiveness will also be explored in their next multi-site trial. The results of this study, particularly the optimal dose of massage, 60 minutes once weekly, are relevant to improving treatment for OA of the knee. Massage therapists can use these findings to support the effectiveness of massage to treat OA of the knee, and for making treatment recommendations based on time and frequency.

These findings also support the notion that the time and frequency of massage treatments is of significance, suggesting more studies are needed to inform the dose of massage for other conditions. Because this study was funded by NCCAM, the full text article is available at no cost to the public. This free full text includes the actual massage protocols used for the treatment of OA. If you are curious to see what other projects NCCAM is funding, you can visit <http://nccam.nih.gov/research/extramural/awards> and type "massage" in the "term search" box.

#### *References:*

1. Perlman AI, Sabina A, Williams AL, Njike VY, Katz DL (2006). Massage therapy for osteoarthritis of the knee: a randomized controlled trial. *Arch Intern Med* 166: 2533-2538.