



# HerbClip™

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**File: ■ Bergamot (*Citrus bergamia*, Rutaceae)**  
**■ Aromatherapy**  
**■ Mental Well-being**

**HC 071754-585**

**Date: January 31, 2018**

**RE: Effect of Bergamot Essential Oil on Mental Well-being**

Han X, Gibson J, Eggett DL, Parker TL. Bergamot (*Citrus bergamia*) essential oil inhalation improves positive feelings in the waiting room of a mental health treatment center: A pilot study. *Phytother Res.* 2017;31(5):812-816.

Aromatherapy with essential oils is used to treat anxiety and depression. The major constituents of essential oils thought to provide these benefits are linalool, limonene, and pinene. Bergamot (*Citrus bergamia*, Rutaceae) peel essential oil has a high content of limonene, linalool, and linalyl acetate, and may be useful for improving overall mental health and anxiety. Hence, the purpose of this randomized, placebo-controlled study was to evaluate the effect of bergamot inhalation on mental well-being of subjects in the lobby of a mental health treatment center waiting to receive treatment.

Women and men (n = 57, aged 18-70 years) who were current companions or patients at the mental health treatment center at The Green House Center for Growth and Learning in Pleasant Grove, Utah, participated in the study. Included subjects could communicate verbally and read and write in English, and were in the waiting room during the study intervals. Excluded subjects were pregnant and/or lactating, had no sense of smell, had known pre-existing sensitivities to essential oils, or were judged by the staff of the treatment center as not good candidates for the study.

This pilot study was designed to mimic real-life usage of aromatherapy. There were 4 periods of treatment with bergamot and 4 periods of treatment with distilled water (placebo). Depending on the week the subject came to the center, they were exposed to either bergamot (dōTERRA International, LLC; Pleasant Grove, Utah) or placebo aromatherapy in the waiting room. Four waterless diffusers were turned on 15 min before the first subject arrived and were kept running at half speed throughout the day. A comfortable and consistent aroma was maintained through the day. Staff routinely checked each diffuser for fullness to ensure that each subject received a similar strength and amount of vapor during the study period. After sitting still in the waiting room for 15 minutes, subjects completed the Positive and Negative Affect Schedule (PANAS), a standardized, validated questionnaire which assesses momentary mental health and well-being. Adverse events were recorded. To distract attention from the smell in the

waiting room, subjects were told that the study was to assess the waiting time's effect on mental feelings.

Nearly all of the subjects were female and Caucasian. Only 10 of 57 subjects were patients of the treatment center; 47 subjects were companions. The bergamot-treated group included all 10 patients of the treatment center. There were a total of 45 subjects in the bergamot group and 12 subjects in the control group. The bergamot group had higher PANAS scores than the control group; however, there were no statistically significant differences between treatment groups. Subjects in the bergamot group had a 48.8% higher score of feeling "proud" and 43.4% higher score of feeling "active" compared with the control group. However, the bergamot group had a 60% increase of feeling "nervous" compared with the control group. There were no adverse events reported.

The authors conclude that "bergamot essential oil aromatherapy can be an effective adjunct treatment to improve individuals' mental health and well-being." However, this conclusion overstates the study data, as there were no statistically significant differences between the groups and the placebo group was very small. Additional study limitations include (1) baseline PANAS was not measured, (2) the small control group prevented sufficient statistical power to make definite conclusions, (3) only 10 subjects who were being treated for mental health issues were included compared with 47 companions, and (4) the analysis combined data from the subjects with mental health issues and their companions; bergamot may affect these 2 subpopulations differently. The authors acknowledge that this is a pilot study.

The study was sponsored by dōTERRA International, LLC, the manufacturer of the bergamot essential oil. Two of the authors (Han and Parker) are employees of dōTERRA International, LLC; another author (Eggett) is a consultant for the company.

—*Heather S. Oliff, PhD*

Referenced article can be accessed at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5434918/>.

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