

**AUTOMATED COLON-SPECIFIC MASSAGE IMPROVES CHRONIC IDIOPATHIC CONSTIPATION IN ELDERLY WOMEN.** I. Herrero-Fresneda (1)(2), M. Benet (1), A. Calzada (1), M. Wilhelms (1). (1) USMIMA S.L., c/LLacuna 162, 08018 Barcelona, Spain (2) Corresponding author

**The purpose of the study:** Colon-specific abdominal massage has been shown to be effective in treating constipation. The aim of the study shown below was to evaluate the effectiveness of a medical device, MOWOOT, which automatically reproduces this manual massage.

**Patients:** The study was carried out on 10 women between 50 and 90 years of age who had chronic constipation of unknown cause for more than 5 years and who did not use manual abdominal massage as a treatment.

**Methodology:** The treatment consisted of a 15-minute daily massage with MOWOOT, for 15 consecutive days. Patients should not discontinue any of their usual pharmacological treatments. They were advised to integrate the treatment massage with MOWOOT in their daily routine by administering it always at the same time, if possible, ideally after getting up in the morning or before going to bed.

**Parameters and analysis:** Before and after treatment, patients answered validated questionnaires to quantify fecal consistency (Bristol Stool Scale, *see annex*), their constipation index (Cleveland Clinic Constipation Score, *see annex*) and their quality of life (CVE-20). During treatment, the patients completed an evacuation diary. Patients with anal sphincter dyssynergia and those who did not follow treatment over 50% of the time were excluded from the study.

Each patient served as her own control. Quantitative variables were analyzed using the Student t-test for paired values. Non-parametric variables were analyzed using the Mann-Whitney test. Values of  $P < 0.05$  were considered statistically significant.

**Results:** Only 1 woman (a 50-year working mother) left the study due to a “lack of time”. The remaining 9 patients informed to have completed the entire treatment. Two were excluded from the study, one due to anal dyssynergia and the other for lack of adherence to treatment (MOWOOT use  $< 50\%$  of the time set in the protocol). At the end, the sample consisted of 7 women between 52 and 86 years of age (mean age  $71.6 \pm 5.2$  years).

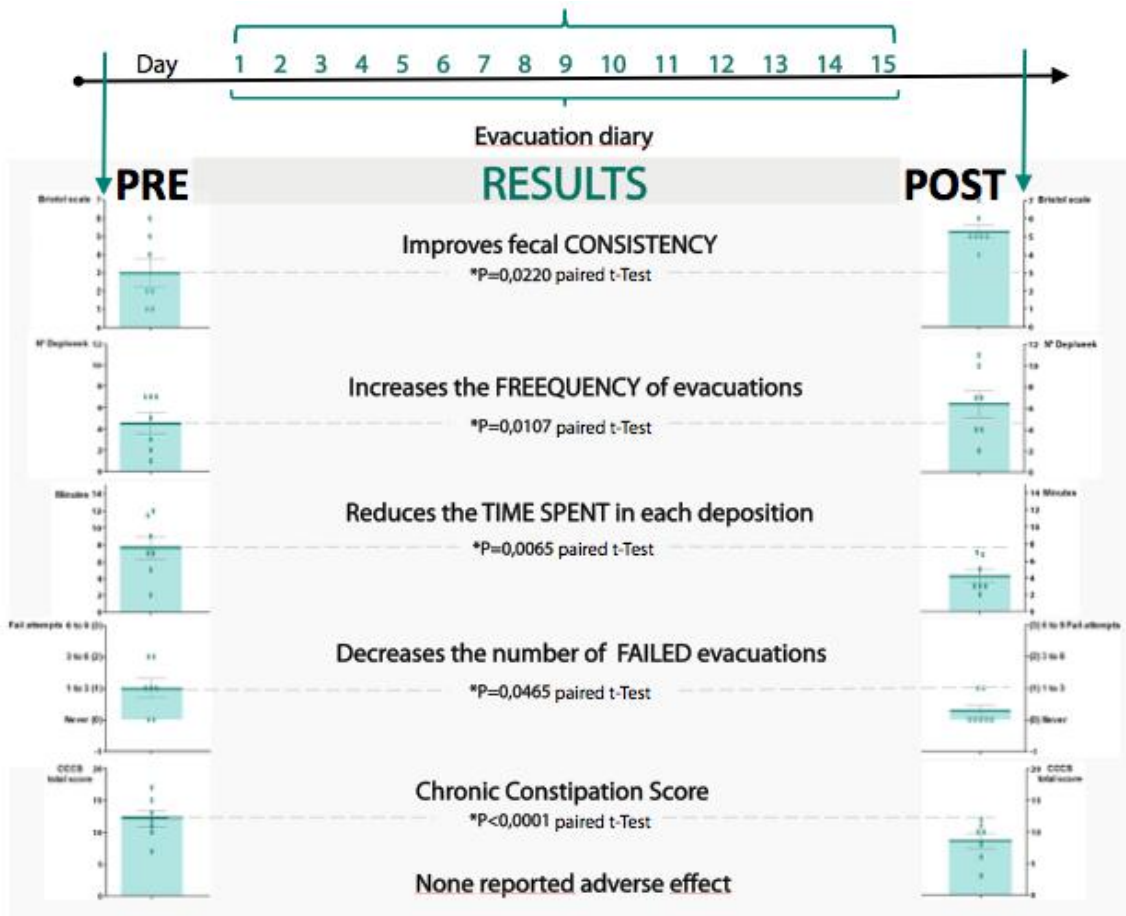
No adverse effects were reported. All patients described a pleasant sensation and said they felt relaxed during the massage.

The results showed:

- A clear increase in the mean number of stools per week (from 3 per week before treatment to 6 per week after treatment,  $P = 0.006$ );

- A significant improvement in fecal consistency (from 3 to 5 on the Bristol scale,  $P = 0.056$ );
- A marked reduction in defecation time (from 7 to 3.8 minutes per stool,  $P = 0.020$ );
- A clear reduction in the CCCS index of constipation (from 12 to 8,  $P = 0.001$ ).

**Summary table:**



**Conclusion:** The colon-specific massage automatically administered with MOWOOT increases evacuation frequency, reduces fecal consistency, and improves chronic constipation in elderly women.

## References:

1. Wald A, et al. *The burden of constipation on quality of life: results of a multinational survey.* *Aliment Pharmacol Ther.* 2007; 26:227-36.
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3. Liu Z et al. *Mechanism of abdominal massage for difficult defecation in a patient with myelopathy (HAM/TSP).* *J Neurol* 2005; 252:1280–1282
4. Sinclair M. *The use of abdominal massage to treat chronic constipation.* *J Body Mov Ther.* 2011;15:436-45
5. Ayaş S, et al. *The effect of abdominal massage on bowel function in patients with spinal cord injury.* *Am J Phys Med Rehabil.* 2006; 85:951-5
6. Diego MA et al. *Preterm infant massage elicits consistent increases in vagal activity and gastric motility that are associated with greater weight gain.* *Acta Paediatrica* 2007; 96:1588–1591

## Attachments

### Bristol Stool Scale

Lewis et al. *Scand. J. Gastroenterol.* 1997; 32 (9): 920–4.



7: Watery, no solid pieces. Liquid

6: Fluffy pieces with ragged edges, a mushy stool

5: Soft blobs with clear-cut edges

4: Like a sausage or snake, smooth and soft

3: Like a sausage but with cracks on the surface

2: Sausage-shaped but lumpy

1: Separated hard lumps, like nuts (hard to pass)

### Cleveland Clinic Constipation Score (CCCS)

*Agachan et al. Dis Colon Rectum. 1996;39(6):681-5.*

<i>Frequency of bowel movements</i>	<i>score</i>	<i>Time: minutes in lavatory per attempt</i>
1-2 times per 1-2 days	0	Less than 5
2 times per week	1	5-10
Once per week	2	10-20
Less than once per week	3	20-30
Less than once per month	4	>30
<i>Difficulty: painful evacuation effort</i>		<i>Assistance: type of assistance</i>
Never	0	Without assistance
Rarely	1	Stimulative laxatives
Sometimes	2	Digital assistance or enema
Usually	3	-
Always	4	-
<i>Completeness: feeling incomplete evacuation</i>		<i>Failure: unsuccessful attempts for evacuation per 24 h</i>
Never	0	Never
Rarely	1	1-3
Sometimes	2	3-6
Usually	3	6-9
Always	4	>9
<i>Pain: abdominal pain</i>		<i>History: duration of constipation (yr)</i>
Never	0	0
Rarely	1	1-5
Sometimes	2	5-10
Usually	3	10-20
Always	4	>20

