



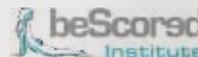
# Celliss

## CHRONIC USE OF THE CELLUMASSAGE® ON TWO POPULATIONS OF WOMEN

Effects on the anthropometric and bioimpedancemetric parameters, the mechanical properties of the skin and eating behavior ...

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# CLINICAL STUDY

Key words: Cellumassage®, firmness, centimetric losses

**Gharieni CELLISS®** is a patented slimming device radically innovative, relying on a new skin care method, Cellumassage®. Gharieni CELLISS® relies on the **"Total Slimming System" (T.S.S) technology, using a non-invasive aspiration/percussion process**, simultaneously on the buttocks or stomach, thighs and hips. This technology stimulates fat cells and the natural detoxification of the body and allows to reduce the "orange peel" effect, to slim down the silhouette and to tone up the skin. Cellulite is a very common phenomenon almost exclusively affecting women. 1.7 billion women from 25 to 60 in the world are affected by cellulite (United Nations World Population Prospects, 2011).

For the study, the expertise of the **beScored Institute** was called in order to evaluate the performances of the innovative equipment CELLISS®. Created and directed by Dr Christophe HAUSSWIRTH, beScored Institute team is composed of a scientific board of 14 internationally renowned experts. The programs conducted by beScored Institute allow the implementation of clinical research projects within their institute and, if need be, in partnership with laboratories (Universities of Nice and Sydney, European Sleep Center, Bio Esterel Laboratories, Technosport, etc.). Their beScored team manages the entire research project, including the feasibility study, bibliographic research, study design, participant recruitment, tests performance, data processing as well as scientific writing to present the results and conclusion of the study.

**Dr. Christophe HAUSSWIRTH**, PhD, founder of beScored Institute, is a Doctor in Physiology and Professor at the University of Sydney. During the 20 years spent at the INSEP as a researcher and Director of the Research Department, and with five Olympic Games behind him, Christophe HAUSSWIRTH developed an expertise in high level sport which he now puts to good use in beScored Institute. At the same time, Christophe Hausswirth has produced 7 reference books, including «Improving Recovery in Sport» and «Nutrition and Performance in Sport». He also has an extensive list of scientific publications (more than 100 articles) for high-impact scientific journals. He wrote 18 chapters of different books on invitation and participated to nearly 100 conferences and seminars in France and abroad on physiology and sports training, as well as on the health and wellness of the individual.

**Study goal: evaluate an innovative strategy by testing the isolated effect of Cellumassage® sessions in comparison with a control group not practicing any sessions.**

## EQUIPMENT AND METHODS

Study design : Prospective, controlled study  
 Product: Gharieni CELLISS®, Cellumassage® device  
 Study duration : 10 weeks, from June 8th to August 14th, 2020  
 Experimental Program : 10 sessions over 4 weeks  
 Control : No program  
 Sessions frequency : 2 to 3 every week  
 Cautions : 1 day off between each session (S)  
 Evaluations : Before S1, before S6, after S10 (+2 to 4 days and +15 days)

### Hypotheses

- Significant diminishing of abdominal perimeter, hip circumference, thighs and body fat
- Improvement of skin mechanical properties
- Increase of global firmness on thighs and stomach

Population 100% women, sedentary or not very active, in good health  
 Ages : 22 to 57 years old

Inclusion condition: cardiological consultation

Total population: n=38

Control group (G<sub>CONT</sub>) : n=10

Experimental group (G<sub>EXP</sub>) : n=28

2 experimental sub-groups: BMI<sub>low</sub> n=17 and BMI<sub>high</sub> n=11

Low/high BMI defined according to Exp group mean BMI (24.3 kg/m<sup>2</sup>)

Table 1. Anthropometric characteristics - population at inclusion (38)

Groups	Age (years old)	Height (cm)	Weight (kg)	BMI (kg/m <sup>2</sup> )
G <sub>CONT</sub> (10)	32.8 ± 11.4 (22.0- 47.0)	166.6 ± 9.2 (152.0-174.0)	64.0 ± 7.2 (51.2-82.3)	23.3 ± 2.5 (21.1-29.9)
G <sub>EXP</sub> (28)	42.3 ± 10.7 (25.0-57.0)	164.0 ± 6.0 (156.0-178.0)	65.2 ± 7.8 (52.0-86.4)	24.3 ± 2.9 (20.8-32.4)
BMI <sub>low</sub> (17)	39.6 ± 12.2 (25.0-57.0)	165.5 ± 5.9 (158.0-178.0)	61.5 ± 5.5 (52.0-72.1)	22.4 ± 1.2 (20.8-24.1)
BMI <sub>high</sub> (11)	46.5 ± 6.1 (35.0-52.0)	161.5 ± 5.5 (156.0-172.0)	71.0 ± 7.3 (62.2-86.4)	27.2 ± 2.2 (24.7-32.4)

Values: mean ± standard deviation (mini-maxi)

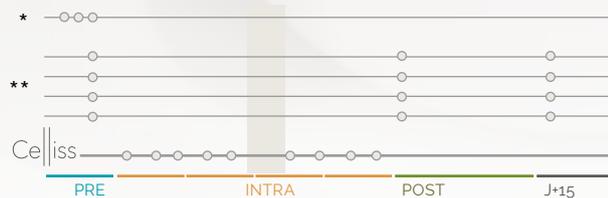
### Evaluation criteria and measuring tools

Criteria	Tools
Intakes, nutritional uses, appetite*	Journal, questionnaires <sup>1</sup>
Rest Energy Expenditure (REE)**	Indirect Calorimetry <sup>2</sup>
Anthropometric measures**	Tape measure <sup>3</sup>
Body composition**	Impedancemetry <sup>4</sup>
Mechanical properties of the skin**	Cutometer <sup>5</sup>

\*\* Evaluations in the morning on an empty stomach.

1. Analysis of the food journal performed by the Nutrilog software (Marans, France, Leblanc et al. 2012) by a dietitian-nutritionist; appetite questionnaire (Wilson et al. 2005) ; eating behavior questionnaire. Participants were asked to maintain their eating habits during the study.
2. Device for indirect calorimetry (Quark RMR, Cosmed, Rome, Italy).
3. Same experimenter, standardized procedure (Bernritter et al. 2011), mean values of the selected double measurements.
4. Scale with impedancemeter (MC-780-MA, Tanita Europe B.V. Amsterdam, Netherlands)
5. Same experimenter, cutometer MPA 580, series of 3 to 5 measurements for each area with selection of the 3 most coherent curves. Creams or body care products and sun exposure are not indicated during this study.

### Frequency of measures in the Experimental group



\* and \*\* see table of evaluation criteria and measurements tools  
 \*\* Only measures performed in the control group every 4 weeks  
 The measures after 15 days are performed on 12 out of 28 CELLISS® program participants

### 10 sessions of Cellumassage®

Duration: 30 min per session (15 min on posterior side, 15 min on anterior side), identical programming for all participants.

Séance	Traitement, niveau	Percussion
1	Anticellulite, 1/10	Normal
2	Slimming, 2/10	Normal
3	Anticellulite, 3/10	Normal
4	Slimming, 4/10	Normal
5	Anticellulite, 5/10	Normal
6	Slimming, 6/10	Normal +
7	Anticellulite, 7/10	Normal +
8	Slimming, 8/10	Normal +
9	Anticellulite, 9/10	Normal +
10	Slimming, 10/10	Normal +

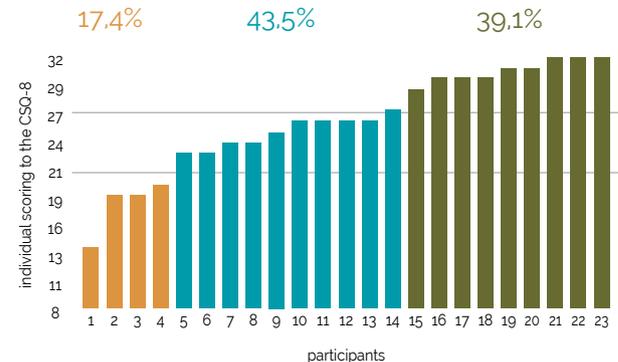
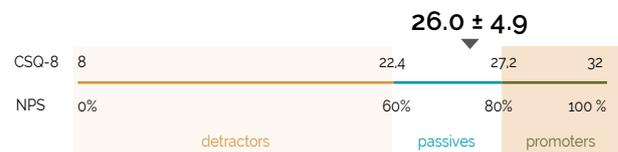
### Post program satisfaction questionnaire (> S10)

Client Satisfaction Questionnaire CSQ-8 (Attkisson and Swick,

1982) Addressed to 23 out of 28 participants of the experimental group. Treatment according to "Net Promoter Score" (NPS) methodology According to their level of enthusiasm, the participants are divided into 3 categories: detractors, passive, promoters

### RESULTS

- The analysis of the food journals shows that there is no significant modification of the energy intakes, water intakes and micronutrients.
- A significant improvement of the eating behavior score is observed by 8.2% over the first part of the Cellumassage® program. At the same time, the appetite score diminishes significantly by 6.7%, and by 8.6% at the end of the program.
- A decrease of -0.81 kg is recorded in terms of fat mass whereas the total water increases by 0.8% and the ratio "extracellular water volume over total water volume" decreases significantly by -0.32%.
- The circumference of the hips decreases significantly by -2.22 cm, the abdominal perimeter decreases significantly by -1.91 cm. Thigh circumference is reduced by -2.0 cm in average.
- Firmness on the stomach, buttocks and thighs has improved respectively by 20%, 5% and nearly 4%.
- Firmness improvement of the skin is observed from the 5th session of Cellumassage®.
- Elasticity of the skin does not change significantly despite a loss of centimeters observed on the stomach and legs.
- The level of client satisfaction calculated for the 23 participants of the G.EXP is  $26.0 \pm 4.9$ . 10 women are categorized as "passive", 9 as "promoter".



## Verified hypotheses

Body composition	
Fat mass	- 0.81kg
Total water	+ 0.80 %
Extracellular water volume / total water volume	- 0.32 %

Anthropometry	
Hip circumference	-2.22 cm
Abdominal perimeter	-1.91 cm
Thights circumferenc	- 2.0 cm

Mechanical properties of the skin	
Stomach firmness	+ 20 %
Buttocks firmness	+ 5 %
Thigh firmness	+ 4 %
Global elasticity	Stable

For all the values recorded post program, a stability of the values is noted 15 days after the end of the program for the tested participants. This shows a lasting effect of the benefits from the Cellumassage® sessions.



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