Regular Massage on a Power Plate® Can Help Improve Circulation

Research from Loma Linda University (USA) Shows that Massage Exercises on a Power Plate Can Help Improve Skin Blood Flow

This is a summary of TWO studies conducted at Loma Linda University (USA) published in the *Medical Science Monitor*, Vol. 13(2), pp: CR71-76, 20071 and Vol. 14(3), pp: CR112-116, 20082.

Study 1 "The effect of Whole Body Vibration on lower extremity skin blood flow in normal subjects" by Everett B. Lohman, Jerrold Scott Petrofsky, Colleen Maloney-Hinds, Holly Betts-Schwab and Donna Thorpe
Study 2 "The effect of 30 Hz vs. 50 Hz passive vibration and duration of vibration on skin blood flow in the arm" by Colleen Maloney-Hinds, Jerrold Scott Petrofsky and Grenith Zimmerman

Study Conclusions:

The studies found that massage on a Power Plate can can significantly increase the circulation in arms and legs.

Method:

The study of Lohman et al. (2007) involved 45 subjects who were randomly divided into 3 groups.

Group 1 performed static exercises, namely squat and two kinds of calf raises at 30 Hz high on the "classic" Power Plate (see fig. 1). Group 2 performed the same exercises with Power Plate turned off. Group 3 received three lots of 60 second calf massages at 30 Hz high on the Powe Plate (see fig. 4).

Skin blood flow was measured before, immediately after and 10 minutes after the exercise. As illustrated in Figure 2 an increase in skin blood flow was recorded both immediately and 10 minutes after massage on the Power Plate amongst the participants in Group 3.

However no change in skin blood flow was recorded amongst the participants in the other two groups at either of those times. An explanation for not finding an increase in circulation in the exercise groups could be due to several reasons, namely that the blood flow requirements of the active muscles was greater than the increased blood supply, or that the fact that the blood flow was directed away from the skin and directed towards areas where it is needed, such as muscles. This study shows that short spurts of massage on a Power Plate significantly increases skin blood flow on the lower extremities e.g. the calves.

The "classic" Power Plate was manufactured by LATAM b.v. for PPI between 2000 and 2004

In the study of Maloney-Hinds et al. (2008), 18 subjects were randomly divided into a 30 Hz high or 50 Hz high vibration group. Both groups received 10-minute massages on their arms using the Power Plate (see fig. 4). Skin blood flow was measured every minute from baseline (pre vibration) up until 15 minutes after massage.

As illustrated in Figure 3, there is a marked increase in skin blood flow after massage at both 30 Hz and 50 Hz high, with the greatest peak after five minutes of massage in both groups.

Although there is no significant difference between both groups, the blood flow increased more rapidly and reached a higher level amongst participants in the 50 Hz high group. Another difference between both groups is the blood flow during the recovery period, which remained higher amongst the 50 Hz high group as illustrated in Figure 3.

Figure 1

Squat Calf

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Figure 2

Changes in skin blood flow between groups over time.

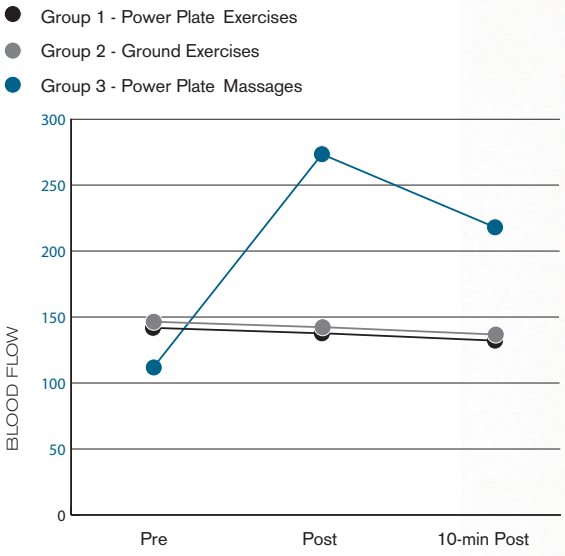
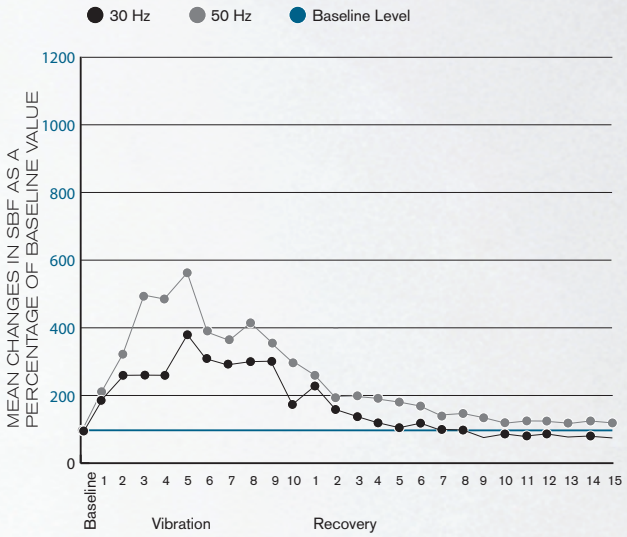


Figure 3

This figure illustrates the mean changes in skin blood flow as a percent of baseline skin blood flow, with standard deviations during baseline, 10 minutes of vibration and 15 minutes of recovery for both 30 Hz and 50 Hz vibration (baseline level).



Results:

This study concludes that five minutes of massage on a Power Plate at either 30 Hz or 50 Hz significantly increases the skin blood flow and thus circulation in the arms. Performing massage on the 50 Hz setting on a Power Plate has additional benefits by increasing the blood flow more rapidly and retaining the level during the recovery period, making the effects longer lasting.

Clinical Applications:

Circulation (blood flow) is essential to the human body. Increasing the blood flow to the skin and the tissue beneath it can improve the condition of the skin and firm up skin tone thus helping to reduce the appearance of cellulite.

Better circulation is also crucial for healing injured muscles, improving oxygen supply and helping to get rid of waste products, like lactic acid, from the muscles. So, by increasing circulation, massage on a Power Plate can:

- help to improve skin tone.
- reduce the appearance of cellulite.
- encourage muscle recovery after injury.
- help speed recovery after exercise.
- offer an effective pre-workout warm-up.

How long does the massage need to be?

Only a short massage is needed to get results. After three minutes of massage on a Power Plate, there's an increase in skin blood flow which lasts until at least 10 minutes after treatment. The greatest increase in blood flow actually happens during the first five minutes of massage.

What setting should the Power Plate be on?

Carrying out massage on a Power Plate on settings of both 30 Hz and 50 Hz high can increase blood flow to the skin and thus improve circulation. However, massage carried out on a 50 Hz high setting increases the blood flow more rapidly and keeps the level higher during the recovery period than that carried out on a 30 Hz high setting.

Figure 4

Calf Massage | Arm Massage

Many people lead inactive lifestyles these days, travelling regularly by car and spending their working days seated at a computer workstation. This can result in decreased circulation and related complaints or even disorders. By providing short massage intervention with the Power Plate, local circulation can be improved, reducing the risk of dysfunction and pain, and improving skin quality and tone.