

## **Report: Anthropometry and Blood Pressure**

### *The Effect of PROtein and CALcium on Weight Change and Blood Lipid Profile (PROKA)*

This report is a summary of the preliminary results during an 8 week weight loss period. During the weight loss period the participants were on a low calorie diet (LCD, 800-1,000 kcal/day) in the form of a NUPO powder regimen, supplemented with 200g of water-containing vegetables. The participants had five consultations with a dietician during the 8 weeks.

#### **Study participants**

221 participants were recruited for PROKA. A total of 219 participants started the weight loss period, while 2 participants withdrew prior to the weight loss period starting. Of the 219 participants that started the weight loss period, 195 participants completed it (a completion rate of 89%). For the 24 participants who did not complete the study, the following reasons were given for discontinuing the weight loss period: problems sticking to the diet (15 people), illness/stress (5 people), pregnancy (1 person) and personal reasons (3 people).

#### **RESULTS**

The 195 participants that completed the weight loss period achieved an average weight loss of 12 kg, which corresponds to 13% of their initial body weight (Table 1). The weight loss resulted in a loss of both body fat and lean body mass of 11 kg and 4 kg, respectively, which corresponds to 22% and 7% of the original body fat and lean body mass (Table 1). The fat content was reduced in the hip region (gynoid region) and the stomach region (abdominal region). Waist circumference was reduced by approximately 12 cm and hip circumference was reduced by 8 cm.

There was also a decrease in diastolic blood pressure by 1.5 mmHg, while the systolic blood pressure increase of 1.1 mmHg was not significant.

#### **Conclusion**

All 195 participants who completed the weight loss course lost a significant amount of weight. This was reflected in kg body weight, fat and lean body mass reduction, as well the per cent fat reduction of both the stomach and hip regions. Furthermore, a positive effect on the diastolic blood pressure was observed. Participants thereby reduced some of their risk factors for developing cardiovascular disease and diabetes.

**Table 1. Change in weight and blood pressure <sup>1</sup>**

|                                | Before<br>weight<br>loss | After<br>weight loss | Change      |           | Statistical<br>analysis <sup>2</sup> |
|--------------------------------|--------------------------|----------------------|-------------|-----------|--------------------------------------|
|                                |                          |                      | Absolute    | Per cent  |                                      |
| <b><u>Body weight</u></b>      |                          |                      |             |           |                                      |
| All (kg)                       | 96.8 ± 1.0               | 84.4 ± 0.9           | -12.4 ± 0.2 | -12.8±0.2 | P<0.000                              |
| Female (kg; n=153)             | 93.4 ± 1.0               | 81.9 ± 0.9           | -11.5 ± 0.2 | -12.4±0.2 | P<0.000                              |
| Male (kg; n=42)                | 109.1 ± 2.1              | 93.5 ± 1.9           | -15.6 ± 0.5 | -14.3±0.4 | P<0.000                              |
| <b><u>Body composition</u></b> |                          |                      |             |           |                                      |
| Total fat mass (kg)            | 43.7 ± 2.2               | 32.8 ± 0.6           | -11.0 ± 2.0 | -22.0±0.7 | P<0.000                              |
| Lean body mass (kg)            | 52.2 ± 0.6               | 48.5 ± 0.6           | -3.6 ± 0.1  | -7.0±0.2  | P<0.000                              |
| Abdominal fat per cent (%)     | 50.8 ± 0.4               | 44.3 ± 0.6           |             |           | P<0.000                              |
| Gynoid fat percentage (%)      | 45.4 ± 0.5               | 41.9 ± 0.6           |             |           | P<0.000                              |
| Hip circumference (cm; n=193)  | 115.9 ± 0.6              | 108.2 ± 0.5          | -7.7 ± 0.3  | -6.6±0.3  | P<0.000                              |
| Waist circumference            | 103.4 ± 0.8              | 91.3 ± 0.7           | -12.2 ± 0.3 | -11.7±0.3 | P<0.000                              |
| <b><u>Blood pressure</u></b>   |                          |                      |             |           |                                      |
| Systolic (mmHg; n=194)         | 117.8 ± 0.7              | 118.9 ± 1.0          | 1.1 ± 0.9   | 1.3±0.8   | P=0.118                              |
| Diastolic (mmHg)               | 76.5 ± 0.8               | 75.0 ± 0.6           | -1.5 ± 0.7  | -1.0±0.8  | P=0.016                              |
| Pulse (beats/min)              | 69.8 ± 0.6               | 59.7 ± 0.6           | -10.1 ± 0.6 | -14.0±0.8 | P<0.000                              |

<sup>1</sup>Weight, body composition and blood pressure before and after the 8 weeks' of the powder regimen, n = 195 unless otherwise specified. The mean values are ± SE. <sup>2</sup>Paired t-test. The significance level is set at P<0.05.