Effect of weekly physical activity frequency on weight loss in healthy overweight and obese women attending a weight loss program: a randomized control trial

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Study Purpose

- This study's purpose is to assess how the frequency of weekly physical activity sessions with the same total activity time effects weight loss
- This study is an intervention design

The Study Population

- 75 healthy overweight and obese women were selected from the NovinDiet Clinic in Tehran, Iran
- BMI ranged from 27-37 kg/m^2
- Age ranged from 18-40 years old

Inclusion Criteria to Participate in the Study

- The women had to have a sedentary lifestyle
  - Sedentary was defined as less than 3 days a week, for less than 20 minutes a day
- All participants had to be willing to make dietary changes in order to lose weight
- The women had to be nonsmokers and free of diseases including: cardiovascular diseases, stroke, diabetes, liver or kidney disease, depression, cancer, and autoimmune disease
- Had to prove beforehand that they could keep an accurate food and activity record
- The study's physician had to approve them as being physically fit

Exclusion Criteria to Participate in the Study

- Pregnancy or lactation within the last 6 months
- Depression
- Weight loss of more than 10% body weight within the last 6 months
- Taking any medications that may lower body weight or affect metabolism
- Prior participation in a weight loss study
- The study's physician had declared them physically unfit

Interventions

- The 75 women were randomly assigned to one of the two study groups
  1. Diet and high frequency (HF) physical activity – 38 women
  2. Diet and low frequency (LF) physical activity – 37 women
- Participants did not all start the study on the same date, rather they started at the same phase of their menstrual cycles
- The women in the HF group were told to do 50 minutes of fast walking, 6 days a week (300 minutes a week)
- The women in the LF group were told to do 100 minutes of fast walking, 3 days a week (300 minutes a week)

Interventions

- For a week before the study, participants were asked to do brisk walking in order to get used to the level of exercise and they had to record how many steps they took each day
- The women were encouraged to find a partner to do the physical activity portion of the study with them
- Participants were given a pedometer to wear all day, and were told to write down their daily step count at the end of each day in their log books

Interventions

- All participants followed a hypo-energetic diet according to the NovinDiet Protocol
  - The protocol is a personalized approach designed to allow 7-10% of body weight loss over 24 weeks
  - Participants were given individualized plans and encouraged to eat foods with low energy density, low-fat dairy, fiber-rich foods, and controlled amounts of high-energy dense foods
- Participants met with the dietitian weekly to review their progress
- They also had access to online resources, phone counseling, and online support if needed

Interventions

- Anthropometric measurements were taken at baseline and 24 weeks
- Food intake was recorded at baseline, 11 weeks, and 24 weeks
- Physical activity intake was recorded at baseline and then every 4 weeks
- Blood samples were taken at baseline and 24 weeks

Results

- 59 women completed the study
  - 30 in the LF group
  - 29 in the HF group
- LF group showed significantly higher weight loss than the HF group

Result Table

Outcomes	LF Group	HF Group	P value
Weight loss	- 9.58 kg	- 7.78 kg	P = .028
BMI	- 3.62	- 2.97	P = .029
Waist circumference	- 9.36 cm	- 7.86 cm	P = .031

The values shown are the mean values.

Biases and Limitations

- The intensity and length of the physical activity was not recorded during the sessions
- Most of the physical activity was fast walking, so the effects of other exercises cannot be determined
- Not sure if it's realistic for participants to do the longer physical activity sessions long-term