International Journal of Ayurved Science & Research

Comparative Effect of Brisk Walking and Weekly Fasting with Yoga in the Management of Sthaulya: A 3-Month Interventional Study

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Abstract:

Background: Sthaulya, described in Ayurveda as a Santarpanottha Vikara, is clinically comparable with obesity and overweight conditions. It is characterized by excessive accumulation of Meda Dhatu, heaviness of body, lethargy, excessive appetite, and reduced physical efficiency. Lifestyle modification remains the cornerstone in the management of obesity. The present study was planned to compare the effect of 30-minute daily brisk walking with weekly fasting along with daily yoga in participants having Sthaulya.**Aim:** To evaluate and compare the effect of daily brisk walking and weekly fasting with yoga on anthropometric and subjective parameters of Sthaulya.**Materials and Methods:** A total of 60 participants diagnosed with Sthaulya were divided into two groups of 30 each. Group A received 30 minutes of brisk walking daily for 3 months. Group B followed one-day fasting once weekly along with 15 minutes of yoga daily for 3 months. Assessment was done at baseline and after 3 months using body weight, body mass index, waist circumference, hip circumference, waist-hip ratio, lipid profile, and subjective symptoms such as heaviness, lethargy, excessive sweating, breathlessness on exertion, and excessive hunger. Data were statistically analyzed using paired and unpaired t-tests.**Results:** Both interventions produced significant improvement. Group A showed mean weight reduction of 4.12 kg, while Group B showed mean reduction of 5.36 kg. BMI reduced by 1.56 kg/m² in Group A and 2.03 kg/m² in Group B. Waist circumference reduced by 5.43 cm in Group A and 6.81 cm in Group B. Subjective symptoms also improved in both groups, with slightly better improvement in Group B. **Conclusion:** Both daily brisk walking and weekly fasting with yoga are effective non-pharmacological interventions in Sthaulya. Weekly fasting combined with daily yoga showed comparatively better results in weight reduction, central obesity, and subjective symptom relief. These findings suggest that controlled fasting with yogic lifestyle may provide additional benefits in the management of Sthaulya.

Keywords: Sthaulya, Obesity, Brisk walking, Fasting, Yoga, Meda Dhatu, Lifestyle modification

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How to cite this Article:

Danga S.K. Comparative Effect of Brisk Walking and Weekly Fasting with Yoga in the Management of Sthaulya: A 3-Month Interventional Study. nature Ayurved 2026;1(2):25-30

Introduction:

Sthaulya is one of the important lifestyle-related disorders described in Ayurveda. Acharya Charaka has included Sthaulya among the Ashta Nindita Purusha, indicating its clinical and social importance. It is mainly caused by excessive intake of Guru, Madhura, Snigdha, and Sheeta Ahara, lack of physical activity, day sleep, and indulgence in sedentary habits. These causative factors lead to Meda Dhatu Vriddhi, Kapha aggravation, obstruction of channels, and derangement of Agni.In modern terminology, Sthaulya can be correlated with obesity and overweight conditions. Obesity is associated with increased risk of type 2 diabetes mellitus, hypertension, dyslipidemia, cardiovascular diseases, osteoarthritis, and psychological distress. WHO recommends regular moderate-intensity physical activity for adults, and current evidence supports the role of exercise, yoga, dietary restriction, and intermittent fasting in weight management. (World Health Organization) Ayurveda emphasizes Langhana, Rukshana, Vyayama, Upavasa, Pathya Ahara, and disciplined lifestyle for the management of Sthaulya. Brisk walking acts as a simple aerobic exercise and helps in calorie expenditure, fat metabolism, and improvement of cardiovascular fitness. Upavasa helps in controlled caloric restriction and may support Agni correction. Yoga improves flexibility, metabolism, stress regulation, and self-control over food habits.

Therefore, the present study was planned to compare two practical lifestyle interventions: daily brisk walking and weekly fasting with daily yoga, in participants having Sthaulya.

Materials and Methods

Study Design

An open-label, comparative, interventional study was conducted for a duration of 3 months.

Study Population

Participants having clinical features of Sthaulya and BMI between 25 and 34.9 kg/m² were selected from the outpatient department and community health screening camp.

Sample Size

A total of 60 participants were included and divided into two groups:

Group A: 30 participants

Group B: 30 participants

Inclusion Criteria

1. Participants aged 25 to 55 years.
2. BMI between 25 and 34.9 kg/m².
3. Presence of clinical features of Sthaulya such as heaviness, lethargy, excessive sweating, increased appetite, and breathlessness on exertion.
4. Participants willing to follow the intervention for 3 months.
5. Participants willing to give written informed consent.

Exclusion Criteria

1. Known cases of uncontrolled diabetes mellitus or hypertension.
2. Pregnant and lactating women.
3. Patients with severe cardiac, renal, hepatic, or endocrine disorders.
4. Participants taking anti-obesity drugs.
5. Participants unable to perform walking or yoga due to musculoskeletal disability.

Intervention

Group A: Brisk Walking Group

Participants were advised to perform **30 minutes of brisk walking daily** for 3 months. Walking was advised preferably in the morning, at moderate intensity, with comfortable clothing and footwear.

Group B: Fasting with Yoga Group

Participants were advised to observe **one-day fasting once weekly** for 3 months. During fasting, participants were allowed warm water, lemon water without sugar,

thin buttermilk, or fruit in limited quantity if needed. In addition, they performed **15 minutes of yoga daily**, including Sukshma Vyayama, Tadasana, Trikonasana, Bhujangasana, Pavanamuktasana, Kapalabhati, and Anulom-Vilom according to tolerance.

Assessment Parameters

Objective Parameters

1. Body weight
2. Body mass index
3. Waist circumference
4. Hip circumference
5. Waist-hip ratio
6. Serum cholesterol
7. Serum triglycerides
8. HDL cholesterol
9. LDL cholesterol

Subjective Parameters

Symptoms assessed:

1. Anga Gaurava — heaviness of body
2. Alasya — lethargy
3. Ati Sweda — excessive sweating
4. Kshudra Shwasa — breathlessness on exertion
5. Ati Kshudha — excessive hunger
6. Daurbalya — reduced physical efficiency

Statistical Analysis

Data were analyzed using mean, standard deviation, percentage improvement, paired t-test, and unpaired t-test. A p-value less than 0.05 was considered statistically significant.

Results

Table 1: Demographic Distribution

Variable	Group A	Group B
Number of participants	30	30
Male	14	13
Female	16	17
Mean age	38.46 ± 7.82 years	39.12 ± 8.14 years
Mean duration of obesity	4.21 ± 2.11 years	4.36 ± 2.24 years
Sedentary lifestyle	22 participants	23 participants
Mixed diet	18 participants	17 participants
Vegetarian diet	12 participants	13 participants

Both groups were comparable at baseline regarding age, gender, dietary pattern, and lifestyle status.

Table 2: Effect on Anthropometric Parameters

Parameter	Group	Before Treatment	After Treatment	Mean Difference	p-value
Weight (kg)	A	79.84 ± 6.92	75.72 ± 6.41	4.12	<0.001

Weight (kg)	B	80.16 ± 7.11	74.80 ± 6.62	5.36	<0.001
BMI (kg/m²)	A	30.12 ± 2.18	28.56 ± 2.04	1.56	<0.001
BMI (kg/m²)	B	30.26 ± 2.22	28.23 ± 2.08	2.03	<0.001
Waist circumference (cm)	A	98.40 ± 6.31	92.97 ± 5.86	5.43	<0.001
Waist circumference (cm)	B	99.12 ± 6.46	92.31 ± 5.94	6.81	<0.001
Hip circumference (cm)	A	106.34 ± 5.72	102.21 ± 5.48	4.13	<0.001
Hip circumference (cm)	B	106.82 ± 5.91	101.73 ± 5.37	5.09	<0.001
Waist-hip ratio	A	0.925 ± 0.04	0.909 ± 0.03	0.016	<0.05
Waist-hip ratio	B	0.928 ± 0.04	0.907 ± 0.03	0.021	<0.05

Group B showed comparatively greater improvement in weight, BMI, and waist circumference.

Table 3: Effect on Lipid Profile

Parameter	Group	Before Treatment	After Treatment	Mean Difference	p-value
Total cholesterol (mg/dL)	A	214.62 ± 28.14	198.41 ± 25.36	16.21	<0.01
Total cholesterol (mg/dL)	B	216.28 ± 27.92	194.36 ± 24.18	21.92	<0.001
Triglycerides (mg/dL)	A	176.34 ± 38.21	153.62 ± 31.45	22.72	<0.01
Triglycerides (mg/dL)	B	178.91 ± 39.14	148.37 ± 30.62	30.54	<0.001
HDL cholesterol (mg/dL)	A	41.26 ± 5.42	44.18 ± 5.21	2.92	<0.05
HDL cholesterol (mg/dL)	B	40.92 ± 5.31	45.16 ± 5.42	4.24	<0.01
LDL cholesterol (mg/dL)	A	132.47 ± 21.16	121.84 ± 19.62	10.63	<0.05
LDL cholesterol (mg/dL)	B	133.12 ± 22.04	118.93 ± 18.84	14.19	<0.01

The improvement in lipid profile was observed in both groups, with better reduction in triglycerides and LDL cholesterol in Group B.

Table 4: Effect on Subjective Symptoms

Symptom	Group	Before Treatment Mean Score	After Treatment Mean Score	% Relief
Anga Gaurava	A	2.43	1.12	53.90%
Anga Gaurava	B	2.51	0.94	62.54%

Alasya	A	2.36	1.08	54.23%
Alasya	B	2.42	0.86	64.46%
Ati Sweda	A	2.18	1.21	44.49%
Ati Sweda	B	2.26	1.02	54.86%
Breathlessness on exertion	A	2.04	1.09	46.56%
Breathlessness on exertion	B	2.11	0.96	54.50%
Ati Kshudha	A	2.31	1.34	41.99%
Ati Kshudha	B	2.38	1.02	57.14%
Daurbalya	A	2.16	1.04	51.85%
Daurbalya	B	2.2	0.91	58.63%

Both groups showed improvement in subjective symptoms. Group B showed better control over excessive hunger, heaviness, and lethargy.

Discussion

Sthaulya is primarily related to Meda Dhatu Vriddhi, Kapha Prakopa, Agnimandya, and obstruction of body channels. The causative factors such as excessive intake of heavy, oily, sweet food, lack of exercise, day sleep, and sedentary habits lead to abnormal fat accumulation. Therefore, the management of Sthaulya requires correction of diet, physical activity, metabolism, and behavioral discipline.In the present study, both interventions showed significant improvement. Group A received 30 minutes of brisk walking daily. Brisk walking is a moderate-intensity aerobic activity that improves energy expenditure, enhances fat oxidation, improves insulin sensitivity, and supports cardiovascular fitness. In Ayurvedic understanding, regular walking acts as Vyayama, which reduces Kapha and Meda, improves lightness of body, stimulates Agni, and reduces lethargy.

Group B received weekly one-day fasting and daily 15 minutes of yoga. Fasting acts as Upavasa and Langhana therapy. It reduces excessive caloric intake, gives rest to the digestive system, improves metabolic flexibility, and helps in reducing Meda accumulation. From an Ayurvedic perspective, Upavasa supports Agni Deepana, Ama Pachana, and Kapha-Meda reduction. Yoga further adds benefits by improving flexibility, breathing efficiency, stress control, hormonal balance, and self-regulation of food habits.The better result observed in Group B may be due to combined effects of caloric restriction, metabolic correction, yogic activity, and mental discipline. Yoga and fasting together may reduce emotional eating, improve Satva, regulate appetite, and support long-term lifestyle discipline. Reduction in excessive hunger was also better in Group B, suggesting improved appetite regulation.Improvement in lipid profile was observed in both groups. However, reduction in triglycerides and LDL cholesterol was more marked in Group B. This may be due to weekly fasting-induced caloric deficit and improved fat metabolism, along with yoga-induced reduction in stress-related eating patterns.Subjective symptoms such as

heaviness, lethargy, excessive sweating, breathlessness, and reduced physical efficiency improved in both groups. These improvements indicate reduction in Kapha-Meda dominance and improvement in physical stamina.Thus, the study suggests that both brisk walking and fasting with yoga are beneficial in the management of Sthaulya. However, weekly fasting with yoga showed slightly superior results in most parameters.

Conclusion

The present study concludes that lifestyle-based interventions are effective in the management of Sthaulya. Daily 30-minute brisk walking significantly reduced body weight, BMI, waist circumference, and symptoms such as heaviness and lethargy. Weekly one-day fasting combined with daily 15-minute yoga showed comparatively better improvement in weight reduction, central obesity, lipid profile, excessive hunger, and overall clinical response.

Both interventions are safe, economical, practical, and suitable for community-level management of Sthaulya. However, fasting should be advised carefully after assessing Prakriti, strength, age, digestive capacity, occupation, and associated diseases. Further studies with larger sample size, longer follow-up, and biochemical markers are recommended.

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