

Fasting therapy

- **P:** (Top 3) overweight, type-2 diabetes, metabolic syndrome
- **I:** intermittent fasting, modified fasting, Ramadan, Bigu (a fasting therapy in Chinese medicine)
- **O:** (Top 3) endocrine profile, lipid profile, weight
- **S:** 30.6% RCTs, 28.6% case series or case reports, 18.4% cohort studies



Background

Obesity and metabolic syndrome have become a public problem recently. People are looking for a more effective, more convenient and safer dietary approach to calorie restriction and weight loss. Fasting therapy refers to calorie and diet restriction for different diseases/conditions, and many clinical studies are paying increased attention to its safety and health benefits. The aim is to provide an overview of fasting therapy and summarize current clinical studies of fasting for health management.

Method

We searched 6 Chinese and English databases from the inception to July 2018 to identify relative clinical studies (including case report/series, cohort study, RCT, non-RCT, case control study, and systematic review on human), and to extract data in duplicate. Data were presented by count, percentage and frequency.

Main Result

49 studies (involving 20,357 participants) published in 1990 to 2018, mainly including 30.6% randomized clinical trials (RCTs), 28.6% case series or case reports, and 18.4% cohort studies. Four main modalities of fasting therapy have now been accepted, including intermittent fasting, modified fasting, Bigu (a modality of Chinese medicine), and Ramadan fasting. Intermittent fasting and modified fasting involves lowering calorie intake with vegetables and fruits on alternate days or on five continuous days during one week. Bigu only requires the intake of less water, honey and fruits, and to do Qigong at the same time. Ramadan fasting follows time-restricted feeding and lasts for 11 to 22 hours.

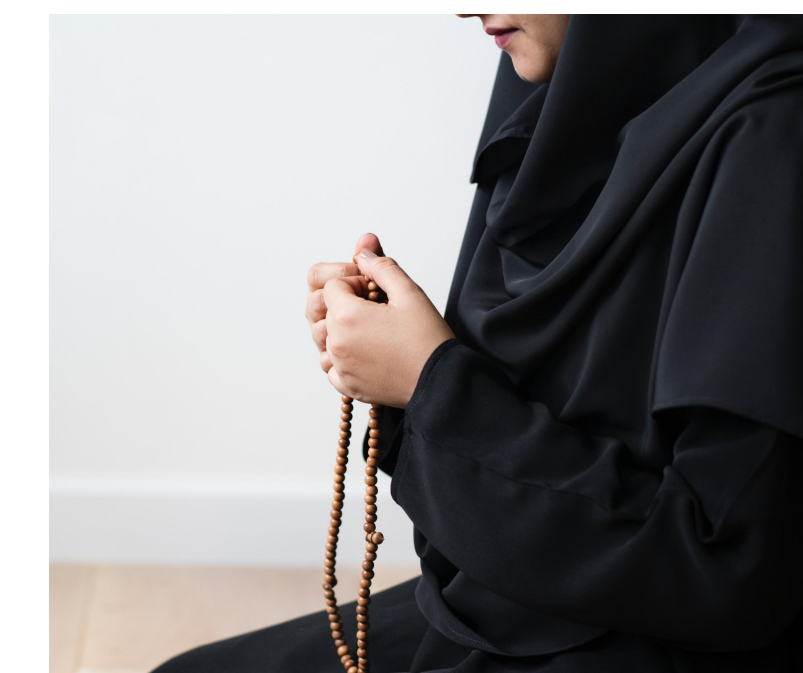
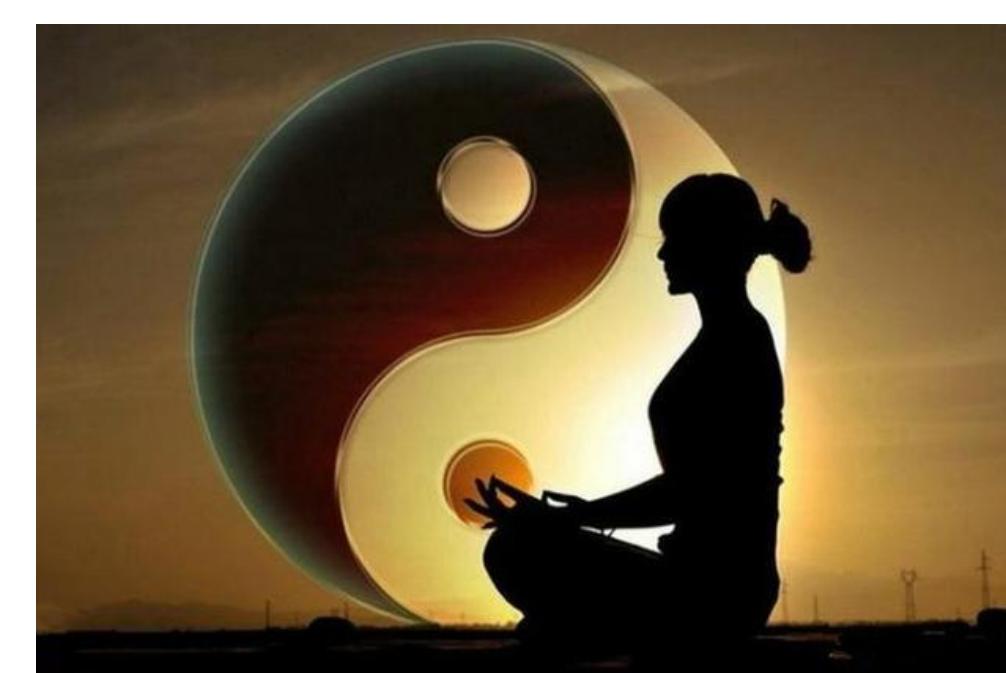
The top three diseases/conditions were type-2 diabetes, obesity and metabolic syndrome. Most studies were conducted in China, Germany and the UK. Eighteen studies applied fasting for prevention, 29 studies for cure, and two studies for both two purposes. The course lasted for periods of 1-4 weeks and continued to 1-2 years. 29 (59.2%) studies used fasting alone whilst others combined it with conventional symptomatic treatment. The most frequently reported outcomes were weight, BMI, blood pressure and blood glucose level. 67.3% studies reported positive effects, 24.5% studies reported uncertain effects and 8.2% studies reported negative effects. No serious adverse events related to fasting were reported.

Tab 1 Description of fasting therapy

Category	Details
Bigu	Diet: The participants ate the amount of fruits about 300g, including Chinese-date (Fructus Jujubae), grapes, apples and so on, and drank mineral water about 500ml every day. Exercise: The participants performed Qigong for 4-5 hours a day, and outdoor walk, keeping the time of daily exercise 6-8 hours. On the 7th day, the participants climbed the mountain.
Intermittent fasting	Intermittent diet: lowering calorie intake with vegetables and fruits on alternate days
Modified fasting therapy	Pre-fasting (D1-D2): The participants received a low-calorie and low-salt diet with intake of pure cooked rice and vegetables. Fasting (D3-D11): The participants received defined amounts of fruit and vegetable juices, vegetable broth, teas, and water, added up to an uptake of approximately 3 L of fluids and 1 MJ of total energy per day. Some fasting regimens started with the oral ingestion of a laxative salt (30–40 mg Glauber's salt). Post-fasting (D12-D14): Low-calorie diet days with stepwise reintroduction of foods. 5:2-diet: Ad libitum food for 5 days during the week and fasting -i.e. a maximum of 500 kcal intake- for two nonconsecutive days
Ramadan	Religious time-restriction diet: About 12 hours for fasting in the holy months of Ramadan, usually from dawn to sunset.

Conclusions

With limited evidence, fasting therapy is applied in diseases/conditions measured by weight and blood indices. Well-designed, adequately powered and further rigorous studies are recommended to confirm its effects.



An overview of evidence-based clinical studies on fasting therapy

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