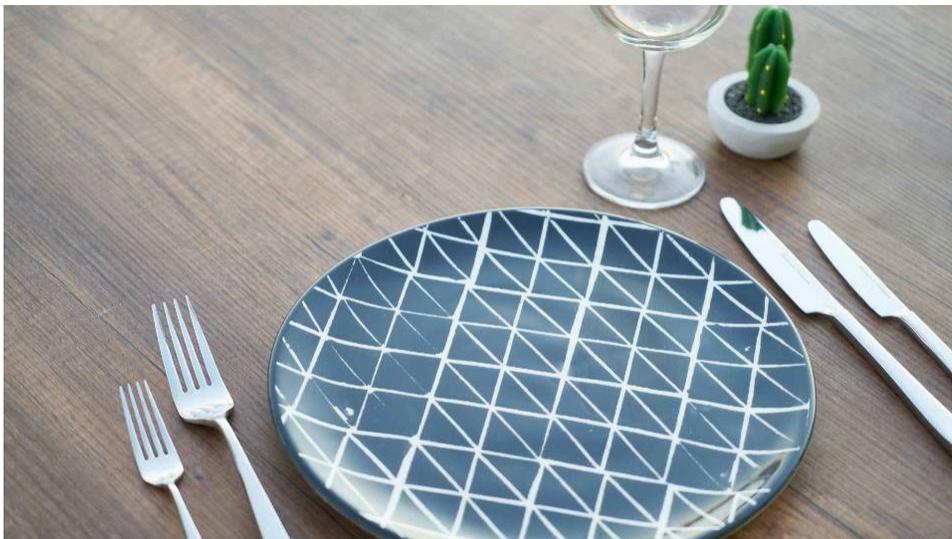


# Fasting Diets: Are They Safe, Healthy, and Effective?



Diets are commonly prescribed to induce weight loss and reduce the risk of many diseases. Because a standard daily calorie restriction diet is often hard to maintain, other diet alternatives such as fasting diets were created. Fasting diets have been found to be effective, though they may not be any more effective than typical diets. Before beginning a fasting diet, it is best to seek professional medical advice to assess individual risks and circumstances. Read on to learn more about the safety, health, and effectiveness of fasting diets.

## What are fasting diets?

Diets involving daily calorie restriction have often been prescribed to facilitate weight and fat loss, but many individuals have a hard time following the diet long enough to see results (Harvie et al., 2011). In contrast, fasting diets alternate between periods of substantial calorie restriction and periods where you eat normally rather than restricting calorie intake every day (Varady, 2011). Intermittent fasting, alternate-day fasting, and time-restricted feeding are among the most researched diets. Intermittent fasting involves 75-100% energy restriction one to three non-consecutive days a week with normal eating the other days. With many interventions, you may consume up to 500-600 calories (about one small meal) and unrestricted water and calorie-free beverages on fasting days. On the feeding days, you may eat ad libitum, meaning that you can eat whatever and as much as you want (Kroeger et al., 2012; Varady, 2011). Extreme over consumption of food, however, will defeat the purpose of this diet. The 5:2 diet is a commonly known intermittent fasting diet where the individual fasts two non-consecutive days each week and eats normally the other five (Conley, Le Fevre, Haywood, & Proietto, 2018). Intermittent fasting (IF) may also be known as intermittent energy restriction (IER) or intermittent calorie restriction (ICR).

Alternate-day fasting (ADF) is similar to intermittent fasting, but you fast every other day rather than only once or twice a week (Varady, 2011; Varady & Hellerstein, 2008).

Time-restricted feeding (TRF) involves extending the nighttime fast by restricting all eating to a few hours within each day. Commonly, individuals will restrict eating to 8 hours a day, such as 10 a.m. to 6 p.m. Ideally, significant calorie restriction is not necessary during this time because reducing the number of hours that one may eat will naturally reduce the number of calories consumed. Outside of these feeding hours, only water and calorie-free beverages are consumed (Moro et al., 2016). The eating period may range from 3-12 hours depending on the individual's circumstances.

## Are fasting diets effective for improving health and losing weight?



While more research is needed, preliminary studies have found that fasting diets, namely alternate-day and intermittent-fasting diets, effectively reduce calorie intake and cause weight loss (Varady, 2011). Two studies found that despite intense energy restriction every other day in ADF, participants ate only slightly more than normal on feeding days, resulting in calorie reduction of about 25-35% over 48 hours (Varady, 2011; Varady et al., 2013). There is no evidence, however, that fasting diets are more effective in weight loss than daily calorie restriction diets (Seimon et al., 2015).

While studies show that people lose similar amounts of weight short-term on both intermittent fasting diets and daily calorie restriction diets, many people on both diets regain the weight later on (Catenacci et al., 2016; SundfØr, Svendsen, & Tonstad, 2018). Those following a fasting diet, however, have regained less weight from fat than individuals on a daily restriction diet in some studies (Catenacci et al., 2016). Maintaining weight loss after a diet is only possible with long-term changes in health and nutrition habits. Emphasizing behavior change during dieting and completing a weight maintenance program may minimize weight regain (Hartman, Stroud, Sweet, & Saxton, 1993; Hovell et al., 1988), but fasting diets alone do not reduce the risk of weight regain.

Fasting and calorie restriction diets have produced similar results in controlled research studies (Headland, Clifton, Carter, & Keogh, 2016; Seimon et al., 2015; Varady, 2011). Both diets have led to weight and fat loss (Harvie et al., 2011), BMI reductions (Seimon et al., 2015), decreases in cholesterol levels (Catenacci et al., 2016), and improved fasting insulin and glucose levels (Barnosky, Hoddy, Unterman, & Varady, 2014). Improvements in these measures can reduce risk factors for many diseases such as diabetes, heart disease, cancer, and more. Research is currently underway regarding which diets, if any, will produce greater health improvements.

Preliminary research has found a few advantages to fasting diets, but results are inconclusive at best and should be considered with reservation. A few studies have found that intermittent fasting results in losing slightly more weight from fat compared to daily calorie restriction diets (Catenacci et al., 2016; Moro et al., 2016; Varady, 2011), but others found no difference (Seimon et al., 2015). Fasting diets may enhance disease prevention (Harvie et al., 2011) and slow the development of cancer (Nair & Khawale, 2016), but data is currently inconsistent. Limited research has also associated fasting diets with improved polycystic ovary syndrome (PCOS) symptoms, food intolerance, self-esteem, anxiety, depression, and a decreased dependency on pain medications (Nair & Khawale, 2016). While some studies found fasting diets to be slightly more advantageous than daily restriction, other studies found the opposite (Seimon et al., 2015). The inconsistency of the data requires more research to further determine if there are any significant advantages of fasting diets (Harvie & Howell, 2016). All in all, both diets produce similar results and are viable options for weight loss (Varady, 2011).

Because it is often difficult to follow a standard daily restriction diet long enough to see health improvements, fasting diets were created in the hope of improving the ability for individuals to stay on a diet. Collectively, studies have not found compelling evidence that intermittent fasting interventions are easier to follow, on average, than standard daily energy restriction diets (Seimon et al., 2015). Personal preferences and individual circumstances, however, may make one diet strategy easier than another. If you find calorie counting and requirements of daily restriction diets too cumbersome, a fasting diet with alternating periods of restriction and normal eating may be easier to follow. If fasting doesn't work with your schedule, causes too many side effects, or puts you at risk for other health complications (such as hypoglycemia in people with diabetes), a daily restriction program may be better.

Ask a doctor before beginning a diet, especially if you:

- Are pregnant or breastfeeding
- Suffer from an eating disorder
- Have diabetes, cardiovascular disease, cancer or other health conditions
- Experience any negative sideeffects on the diet

## Are there any risks with fasting diets?

Fasting diets seem safe for most healthy individuals, but some have reported side effects such as constipation, water retention, bad breath, trouble sleeping, dizziness, and weakness (Hoddy et al., 2015). Little is known about the effects of fasting diets on other health aspects such as physical activity and sleep (Patterson & Sears, 2017). One study found that intermittent fasting did increase the risk for hypoglycemia, especially on fasting days, in patients with type 2 diabetes (Corley et al., 2018), but other effects on diabetes are still being researched. We also don't know how fasting diets will affect pregnant and breastfeeding mothers or individuals with other health complications like cardiovascular disease, Alzheimer's disease, or eating disorders (Patterson & Sears, 2017), so it is best to consult a doctor before and during a fasting diet intervention. In some studies, calorie-restricted diets of any kind have been associated with binge eating, eating disorders, and weight gain and regain, especially in adolescents and children. Calorie-restricted diets are

discouraged for adolescents and children (Golden, Schneider, & Wood, 2016). If you experience any unusual side effects after beginning a fasting diet, stop and seek advice from a qualified doctor or health professional.

## Conclusion

Overall, fasting diets seem to be effective for initial weight loss, but are not superior to previously prescribed daily calorie-restriction diets and do not prevent weight regain. Fasting diets may be associated with reduced risks for diabetes, cardiovascular disease, cancer, and other diseases, but unknown is whether the weight loss or the fasting diet reduces these risks. If a daily calorie restriction diet does not fit well with your lifestyle and circumstances, an intermittent-fasting diet is another viable option. All individuals are encouraged to seek medical advice from a qualified health professional that understands their risks before beginning a diet. Those with diabetes, cardiovascular disease, eating disorders, cancer, are pregnant or breastfeeding, or have any other health conditions, are at greater risk and may need additional professional supervision. In the end, if you feel that dieting is appropriate for you, the diet that works for you is best for you.

## References

- Barnosky, A. R., Hoddy, K. K., Unterman, T. G., & Varady, K. A. (2014). Intermittent fasting vs daily calorie restriction for type 2 diabetes prevention: a review of human findings. *Translational Research*, 164(4), 302–311. <https://doi.org/10.1016/j.trsl.2014.05.013>
- Catenacci, V. A., Pan, Z., Ostendorf, D., Brannon, S., Gozansky, W. S., Mattson, M. P., ... Donahoo, W. T. (2016). A randomized pilot study comparing zero-calorie alternateday fasting to daily caloric restriction in adults with obesity. *Obesity*, 24(9), 1874–1883. <https://doi.org/10.1002/oby.21581>
- Conley, M., Le Fevre, L., Haywood, C., & Proietto, J. (2018). Is two days of intermittent energy restriction per week a feasible weight loss approach in obese males? A randomised pilot study. *Nutrition & Dietetics*, 75(1), 65–72. <https://doi.org/10.1111/1747-0080.12372>
- Corley, B. T., Carroll, R. W., Hall, R. M., Weatherall, M., ParryStrong, A., & Krebs, J. D. (2018). Intermittent fasting in type 2 diabetes mellitus and the risk of hypoglycaemia: a randomized controlled trial. *Diabetic Medicine*. <https://doi.org/10.1111/dme.13595>
- Golden, N. H., Schneider, M., & Wood, C. (2016). Preventing obesity and eating disorders in adolescents. *Pediatrics*, 138(3). <https://doi.org/10.1542/peds.2016-1649>
- Hartman, W. M., Stroud, M., Sweet, D. M., & Saxton, J. (1993). Long-term maintenance of weight loss following supplemented fasting. *International Journal of Eating Disorders*, 14(1), 87–93.
- Harvie, M. N., & Howell, T. (2016). Could intermittent energy restriction and intermittent fasting reduce rates of cancer in obese, overweight, and normal-weight subjects? A summary of evidence. *Advances In Nutrition* (Bethesda, Md.), 7(4), 690–705. <https://doi.org/10.3945/an.115.011767>
- Harvie, M. N., Pegington, M., Mattson, M. P., Frystyk, J., Dillon, B., Evans, G., ... Howell, A. (2011). The effects of intermittent or continuous energy restriction on weight loss and metabolic disease risk markers: a randomized trial in young overweight women. *International Journal of Obesity*, 35(5), 714–727. <https://doi.org/10.1038/ijo.2010.171>
- Headland, M., Clifton, P. M., Carter, S., & Keogh, J. B. (2016). Weight-loss outcomes: A systematic review and metaanalysis of intermittent energy restriction trials lasting a minimum of 6 months. *Nutrients*, 8(6). <https://doi.org/10.3390/nu8060354>
- Hoddy, K. K., Kroeger, C. M., Trepanowski, J. F., Barnosky, A. R., Bhutani, S., & Varady, K. A. (2015). Safety of alternate day fasting and effect on disordered eating behaviors. *Nutrition Journal*, 14, 1–3. <https://doi.org/10.1186/s12937-015-0029-9>
- Hovell, M. F., Koch, A., Hofstetter, C. R., Sipan, C., Faucher, P., Dellinger, A., ... Felitti, V. J. (1988). Long-term weight loss maintenance: Assessment of a behavioral and supplemented fasting regimen. *American Journal of Public Health*, 78(6), 663–666.
- Kroeger, C. M., Klempel, M. C., Bhutani, S., Trepanowski, J. F., Tangney, C. C., & Varady, K. A. (2012). Improvement in coronary heart disease risk factors during an intermittent fasting/calorie restriction regimen: Relationship to adipokine modulations. *Nutrition & Metabolism*, 9(1), 98–105. <https://doi.org/10.1186/1743-7075-9-98>

- Moro, T., Tinsley, G., Bianco, A., Marcolin, G., Pacelli, Q. F., Battaglia, G., ... Paoli, A. (2016). Effects of eight weeks of time-restricted feeding (16/8) on basal metabolism, maximal strength, body composition, inflammation, and cardiovascular risk factors in resistance-trained males. *Journal of Translational Medicine*, 14, 1–10. <https://doi.org/10.1186/s12967-016-1044-0>
- Nair, P. M. K., & Khawale, P. G. (2016). Role of therapeutic fasting in women's health: An overview. *Journal of MidLife Health*, 7(2), 61–64. <https://doi.org/10.4103/0976-7800.185325>
- Patterson, R. E., & Sears, D. D. (2017). Metabolic effects of intermittent fasting. *Annual Review of Nutrition*, 37(1), 371–393. <https://doi.org/10.1146/annurev-nutr-071816-064634>
- Seimon, R. V., Gibson, A. A., Sainsbury, A., Hills, A. P., Zhu, B., Roekenes, J. A., ... Wood, R. E. (2015). Do intermittent diets provide physiological benefits over continuous diets for weight loss? A systematic review of clinical trials. *Molecular and Cellular Endocrinology*, 418, 153–172. <https://doi.org/10.1016/j.mce.2015.09.014>
- Sundfør, T. M., Svendsen, M., & Tonstad, S. (2018). Effect of intermittent versus continuous energy restriction on weight loss, maintenance and cardiometabolic risk: A randomized 1-year trial. *Nutrition, Metabolism, and Cardiovascular Diseases: NMCD*, 28(7), 698–706. <https://doi.org/10.1016/j.numecd.2018.03.009>
- Varady, K. A. (2011). Intermittent versus daily calorie restriction: which diet regimen is more effective for weight loss? *Obesity Reviews*, 12(7), e593–e601. <https://doi.org/10.1111/j.1467-789X.2011.00873.x>
- Varady, K. A., Bhutani, S., Klempel, M. C., Kroeger, C. M., Trepanowski, J. F., Haus, J. M., ... Calvo, Y. (2013). Alternate day fasting for weight loss in normal weight and overweight subjects: a randomized controlled trial. *Nutrition Journal*, 12, 1–15. <https://doi.org/10.1186/1475-2891-12-146>
- Varady, K. A., & Hellerstein, M. K. (2008). Do calorie restriction or alternate-day fasting regimens modulate adipose tissue physiology in a way that reduces chronic disease risk? *Nutrition Reviews*, 66(6), 333–342. <https://doi.org/10.1111/j.1753-4887.2008.00041.x>

## Authors

***Keshele Stevens Dietetics Student; Carrie Durward PhD, RD, Extension Nutrition Specialist***

```
window.onload = function() { // This ensures the script runs after the entire page is loaded
document.querySelectorAll('.embed-feed .fourColumnCarousel .img-fluid').forEach(function(img) { if (!img.getAttribute('alt')
|| img.getAttribute('alt').trim() === "") { // Navigate up to find the common ancestor, then find the h3 within it let relatedH3
= img.closest('.col-lg-3').querySelector('.carousel-h3'); if (relatedH3) { img.setAttribute('alt', relatedH3.innerText.trim());
console.log('Alt text set for', img.src, 'to', relatedH3.innerText.trim()); // Helps to see what's being processed } else
{ console.log('Related h3 not found for', img.src); // Indicates a problem finding the h3 } } }); }
```