Intermittent fasting has gained popularity over the past decade, but many people are still confused about what fasting entails. To put it simply, intermittent fasting involves a short period of not eating followed by a period of eating freely. Fasting does not equate to starvation, and with all intermittent fasting regimens, you get to eat every day.

The three most popular forms of intermittent fasting are the 5:2 diet, alternate day fasting, and the 16:8 diet. The 5:2 diet involves limiting food intake to 500 calories per day on two days per week. During the other five days, you can eat whatever you want with no limitations on types or quantities of foods. Alternate day fasting is slightly different from 5:2 in that it requires you to fast every other day. So, with alternate day fasting, you would continuously alternate between a 500-calorie fast day and a day of eating freely. The 16:8 diet, on the other hand, involves fasting a little bit every day. During 16:8, you would limit your food intake to an 8-hour window each day (for example 10am-6pm), and water fast the rest of the day.
EDITORIAL

DISCOVER EXTREME SPORTS

by ALLISON PIGATTO, MS, RDN, LDN

Does the idea of jumping out of an airplane, racing down a mountainside, or scaling a cliff face give you a twinge of terror? You’re not alone. According to one study, nearly 25% of the population identifies having a fear of heights. Additionally, many Americans recognize a fear of falling and speed. Despite these fears, extreme sports like rock climbing, mountain biking and snowboarding are growing in popularity, and may provide benefits beyond a thrill.

Extreme sports involve a higher degree of risk than other activities. However, many sports are accessible to novices, with classes and training sessions available for different skill levels. Exploring an extreme sport is an exciting alternative to treadmills and free weights, and will keep people engaged while learning a new activity. Additionally, many extreme sports build balance, strength and flexibility, while burning calories.

Sports that involve some degree of danger (or perceived danger) can be an avenue to manage fear and build self-confidence.

One study found that participants benefited by confronting and learning to manage fear. Researchers discussed perceptions of fear with athletes participating in base jumping, big wave surfing, extreme skiing and solo rope-free climbing. Athletes reported that facing extreme situations in sports facilitated the management of fear in other aspects of their lives.

Beyond physical and emotional fitness, extreme sports are also mentally stimulating, forcing participants to navigate challenging situations. Rock climbing, for example, is considered to be a physical puzzle, with routes viewed as “problems” to be solved. Additionally, extreme sports often have strong social communities where athletes train, compete and travel together.

I started rock climbing three years ago and never looked back. Participating in a sport that is both physically and mentally stimulating has helped me stay motivated. If you’re making fitness a priority in 2018, consider a sport that will push you to new extremes.

REFERENCES

SPACING PROTEIN INTAKE – CAN IT HELP WITH WEIGHT LOSS AND MAINTENANCE?

by APEKSHA GULVADY, PhD

KEY MESSAGES

• Higher protein intake spaced throughout the day may help decrease body fat and increase lean body mass.
• Long-term, higher protein intake spaced throughout the day may promote weight maintenance.

In a more recent study,³ Arciero et al. examined gender-specific responses of obese men and women to a short-term weight loss diet comprised of a hypocaloric diet with more than 30% energy from protein over 6 meals per day. At the end of the 12-week intervention, they observed similar improvements in body composition in both men and women with the test diet. This included a 10% reduction in body weight, lower total-, abdominal-, and visceral fat, and a 9% increase in lean body mass. This was in addition to favorable alterations in plasma biomarkers (insulin, glucose, and leptin) and metabolism. Furthermore, they also found that long term (52 weeks) protein-spacing with calorie restriction was more efficacious than the traditional dietary intervention in helping maintain body weight and composition, thereby implying a role for protein pacing in preventing weight relapse.

Apeksha Gulvady, PhD, is a nutrition scientist specializing in science-based communications for a broad range of food, nutrition and biomedical areas.

REFERENCES


Over 36% of adults and approximately 17% of children and adolescents in the United States are obese, and among the adults in particular, obesity prevalence is higher in women (38.3%) than in men (34.3%).¹ While both diet and lifestyle changes are important weight management strategies, both successful weight loss and maintaining weight loss over time can be challenging.

One nutrient that has come to the forefront as a dietary strategy for weight loss is protein, with researchers extensively exploring how the adjustment of quantity, quality and frequency of eating of this macronutrient may bring about small yet meaningful improvements in metabolic parameters and body composition. In studying the effect of both quantity and frequency of protein intake, Arciero et al. previously compared the effects of increasing dietary protein to approximately 35% of energy and spacing it over six meals throughout the day, versus a traditional intake of 15% protein and 3 meals per day. They found that the higher protein, spaced throughout the day resulted in a decreased total and abdominal body fat while increasing the percentage of lean body mass and enhancing postprandial thermogenesis.²
INTERMITTENT FASTING FOR HEALTH AND LONGEVITY

KEY MESSAGES

- Intermittent fasting regimens involve periods of not eating followed by a period of eating freely.
- It is important to consume protein during periods of fasting.
- Intermittent fasting can be an effective way to achieve a healthy body weight.

During periods of fasting, it’s important to consume lots of protein. Consuming at least 50 grams of protein on the fast day will help keep hunger at bay and muscle mass high. Examples of high protein fast day meals include shakes with lots of Greek yogurt, fruits and veggies, or a large salad with lean meat, eggs, legumes or nuts.

Recent scientific evidence shows that intermittent fasting is an effective way of achieving a healthy body weight.

In a recent year-long study, adults with obesity lost 6% of body weight (approximately 13 pounds) and maintained this weight loss with alternate day fasting. Studies also support the use of 5:2 and 16:8 for weight loss. After 3-6 months of 5:2 or 16:8, people with obesity decreased body weight by 3-7% (8-15 pounds).

Intermittent fasting can also help reduce the risk of developing heart disease and diabetes. Recent evidence shows that fasting can lower “bad” LDL cholesterol by up to 15%, triglycerides by up to 25%, and raise “good” HDL cholesterol by up to 10%. Blood pressure also decreases by 5-10 mm Hg with various fasting regimens. Reductions in diabetes risk have also been observed during periods of fasting. For instance, intermittent fasting has been shown to...

SAMPLE FASTING DAY MEAL PLAN

<table>
<thead>
<tr>
<th>MEAL</th>
<th>FOOD</th>
<th>CALORIES*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>1 egg, poached</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>1 slice whole wheat toast</td>
<td>70</td>
</tr>
<tr>
<td>Lunch</td>
<td>1 6-oz container plain Greek yogurt, nonfat</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>1 c strawberries, fresh</td>
<td>45</td>
</tr>
<tr>
<td>Dinner</td>
<td>3 oz chicken, baked</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>3 c spinach, raw</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>2 tbsp Caesar dressing, fat free</td>
<td>45</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>480</td>
</tr>
</tbody>
</table>

*values from Esha the Food Processor
to lower blood glucose, insulin, and improve insulin sensitivity in people with obesity and prediabetes.4 Reduction in risk for heart disease and diabetes can be attributed to weight loss associated with intermittent fasting.

More recently, it’s been shown that intermittent fasting may help slow aging and extend lifespan. Studies conducted in mice show that fasted rodents live much longer than rodents who ate freely every day.5 These findings are complementary to human studies which show that fasting lowers several biomarkers for aging and cancer, which can help prolong lifespan.5 In a very recent study conducted at Harvard University,6 fasting was shown to help keep certain cell components in a “youthful” state, which may in turn improve life expectancy.

More and more scientific evidence shows that fasting is a great way to lower chronic disease risk, slow aging, and achieve a healthy body weight. Nevertheless, it’s important to note that fasting is not for everyone. People with type 1 diabetes or women who are pregnant or nursing should not try these diets. Moreover, children are not advised to try fasting as it may impede their growth.

Keep in mind that intermittent fasting is just one option for weight loss. While some people may find fasting easier to stick to than daily calorie restriction, others may not. All in all, people should choose a diet that they can easily incorporate into their lifestyle and stick to long-term.

Krista Varady, PhD, is an Associate Professor of Nutrition at the University of Illinois, Chicago. Her research focuses on the efficacy of intermittent fasting for weight loss, weight maintenance, and metabolic disease risk reduction in obese adults.

REFERENCES

A recent study showed that consuming a dozen eggs per week for one year resulted in improved aspects of vision in adults with early age-related macular degeneration.

New research shows that eating whole eggs promotes muscle growth better than egg whites.
PHYSICAL PERFORMANCE

EAT YOUR EGGS AFTER: A RECOVERY FOOD FOR ATHLETES

by KRISTEN ARNOLD, RDN, LD, MS

KEY MESSAGES

• Eggs are a nutrient-dense food that contains high-quality protein which can aid in muscle protein synthesis right after exercise.
• When combined with carbohydrate-rich foods, eggs are an optimal recovery food for athletes to help support physical performance.

Optimal recovery protocols for athletes are critical to physical performance. Athletes and coaches often ask: What should an athlete eat after a workout? How much protein does an athlete need after a workout? What are easy and affordable options for post-workout recovery nutrition?

Two major goals of recovery from training are to build muscle and restore glycogen. Studies show consuming upwards of 20 grams of high-quality protein rich in branched chain amino acids (BCAAs) combined with carbohydrate-rich foods in a ratio of 1:4 (protein to carbohydrates) stimulate muscle protein synthesis and glycogen restoration. It is important to choose foods which are easy to prepare and pack, provide the beneficial nutrients for recovery, and are palatable to the athlete. Many coaches and health care professionals operate with the philosophy of ‘food first’, suggesting that whole foods are preferred over supplements and engineered foods. Whole foods are often less expensive and are not tainted with ingredients unsafe for sport, like some supplements and engineered sports products. Eggs are a whole food that provide an optimal source of protein, branched chain amino acids, and a range of essential vitamins and minerals. Moreover, eggs are inexpensive, easy to prepare, and palatable.

Resistance training (weight lifting, body-weight exercise) is an anabolic stimulus which primes the machinery of the muscle cell to facilitate the transport of amino acids into the muscle. Amino acids taken up from circulation (endogenous or exogenous) are then rapidly incorporated into new muscle proteins. The ingestion of whole egg protein after resistance training has been shown to stimulate muscle protein synthesis and albumin protein synthesis. In a study by Moore et al, six healthy young males ingested a beverage containing 0, 5, 10, 20 or 40 grams of intact protein (as compared to isolated amino acids) from whole eggs in a randomized order after leg-based resistance training. This stimulated dose-dependent increases in mixed-muscle and plasma albumin synthesis up to 20 grams. After 20 grams of dietary protein, there was a marked stimulation of whole-body leucine oxidation and no further increase in protein synthesis. With this information, it is recommended to include upwards of 20 grams of protein in post-exercise recovery food.

In addition to being a source of high-quality protein, eggs include a diverse profile of essential vitamins and minerals. It is important for athletes to not only focus on foods and nutrients to promote muscle growth, but also to prevent illness and promote overall health. Choosing nutrient-dense foods rich in vitamins, minerals, essential fatty acids and amino acids are crucial to athletic performance. Eggs contain varying levels of the following nutrients:

NEW DISCOVERY

Infants exposed to higher levels of choline during pregnancy have improved information processing speed during the first year of life.

Read more here: Eggnutritioncenter.org/cholineresearch
• Vitamin B12 which helps with red blood cell formation, manufacturing DNA and nerve cells and carbohydrate and fat metabolism
• Folate which helps with red blood cell formation and DNA metabolism
• Pantothenic acid which aids carbohydrate, fat, and protein metabolism
• Zinc which aids in wound healing
• Iron which is essential for oxygen transport
• Vitamin E which promotes antioxidant activity and cell membrane integrity
• Chromium which aids in growth and is part of glucose tolerance factor-a complex that enhances insulin action.

The fat present in the yolk helps to metabolize the fat-soluble vitamins present in the egg, making it a synergistic food for optimal nutrient absorption. Unlike engineered sports products and recovery powders, the egg is a whole food which includes a synergistic blend of nutrients to fuel the body.

When combined with carbohydrate-rich foods, eggs are an optimal food to include in an athlete’s post-workout recovery nutrition protocol.

Below are examples of post-workout snacks/meals which include carbohydrate-rich foods and eggs, and are also palatable and easy to prepare:

<table>
<thead>
<tr>
<th>Post-Workout Snack/Meals</th>
<th>Nutrients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 scrambled eggs, 2 pieces of toast, 1 tbsp jam</td>
<td>Calories: 330, Protein: 15g, Carbs: 40g</td>
</tr>
<tr>
<td>2 over-easy eggs, 1 c white rice, dash of green onions, 1 c fruit juice</td>
<td>Calories: 450, Protein: 20g, Carbs: 70g</td>
</tr>
<tr>
<td>2 hard-boiled eggs, 1 banana, ½ c cheerios, 1 c fruit juice</td>
<td>Calories: 470, Protein: 20g, Carbs: 75g</td>
</tr>
<tr>
<td>2 scrambled eggs, 2, 6” tortilla, dash of low-fat cheese, 2 tbsp salsa, 1 c fruit juice</td>
<td>Calories: 450, Protein: 20g, Carbs: 60g</td>
</tr>
</tbody>
</table>

Kristen Arnold is a Registered and Licensed Dietitian Nutritionist with a Master’s in Human Nutrition from The Ohio State University and has been practicing dietetics for 3 years.
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American Heart Month
February is American Heart Month. Find out how eggs can be included as part of a heart-healthy diet.
{ FEBRUARY 1-28 }

Today’s Dietitian Spring Symposium
Austin, TX
{ MAY 20-23 }

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