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Breakfast or Late-Night Snacks — Which Should You Give Up?

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STORY AT-A-GLANCE

- Evidence shows that calories are burned differently when they are consumed at breakfast or late at night; breakfast is better
- More energy is stored, and less fat is burned when you eat a late-night snack, which contributes to weight management challenges
- Several factors contribute to weight loss, and being within normal weight doesn't necessarily mean you're healthy
- The terms "metabolically obese normal-weight" and "skinny-fat" describe individuals who are normal weight, but whose bodies operate as though they were metabolically fat
- A combination of cyclical ketosis with intermittent fasting helps support mitochondrial health and lowers your risk of several chronic diseases

It's important to not only pay attention to what you eat, but also when you eat. In past years, experts have made numerous dietary recommendations, including eating three full meals a day, grazing throughout the day, eating a high-protein snack at night and following a low-fat diet. Despite changing recommendations, the number of overweight and obese individuals continues to climb.

According to the World Health Organization,[1] the number of people who are obese nearly tripled from 1975 to 2016. In 2016, 39% of people 18 years and older were overweight. Unfortunately, in 2018 this health hazard affected 40 million children under the age of 5.

Obesity Action[2] reports there's an estimated 93 million Americans who are obese, which increases their risk for problems with mobility and a higher rate of death. Of the 22 industrialized countries worldwide, the U.S. has the highest number of citizens who are obese.[3]

This condition leads to high blood pressure, insulin resistance and high cholesterol and triglycerides. As body mass index rises so does the potential for developing Type 2 diabetes and high blood pressure. One counter records 751.4 million people worldwide who are obese.

Choose Breakfast, Not a Late-Night Snack

Researchers from Vanderbilt University were interested in determining whether the timing of meals has a bearing on how efficiently energy is burned.[4,5] They tested the hypothesis that a circadian rhythm regulated how food would be metabolized during the day as compared to at night.

To measure this, middle-aged and older participants stayed in a respiratory chamber in two separate 56-hour interventional sessions. During each session they were offered three daily meals. In one session they were given breakfast, lunch and dinner and in the other they were given lunch, dinner and a late-night snack.

During each session the participants received the same amount of food and used the same amount of energy. At night, their respiratory exchange rates were measured. This unexpectedly revealed a difference related to the timing of meals without any relationship to physical activity or core body temperature.

It appeared that the timing of their meals had an influence on lipid oxidation (LO). Those eating a late evening snack experienced lower fat burning during the night as opposed to those who ate breakfast without a late-night snack. The amount of time the participants fasted between the last meal of the day and the first meal the next day was the same for both sessions. The researchers concluded:[6]

> *"The timing of meals during the day/night cycle therefore affects the extent to which ingested food is used versus stored. This study has important implications for eating habits, suggesting that a daily fast between the evening meal and breakfast will optimize weight management."*

Ultimately, this means that despite the number of calories eaten and calories burned being the same in both groups, those who ate at night would theoretically gain more weight than those who ate breakfast.

Weight Loss Alone Doesn't Fix Health Problems

There are several factors that contribute to weight loss, such as sleep habits, the gut microbiome, what you eat and when you eat it. You might think that if you're able to stay lean then you're healthy, but weight loss alone is not a path to optimal health.

While you might look healthy on the outside, you could have some of the same health challenges as those who are overweight or obese. "Skinny fat" is a term used to describe individuals who may look thin on the outside but are metabolically fat due to a poor diet, unhealthy habits and lack of sleep.

Being overweight is a known risk factor for diabetes, yet researchers are finding that people with Type 2 diabetes who are at a normal weight have a higher mortality risk than those who are overweight or obese.[7] This is known as the "obesity paradox" and it is being found in other chronic diseases as well.[8]

Some experts report that as many as 25% of those who are within a normal weight range have prediabetes.[9] This may be the result of a focus on getting thin instead of being healthy. In other words, paying attention to what's on the scale as opposed to getting quality sleep, reducing stress and eating a balanced diet may be leading to poor outcomes.

Researchers have been writing about metabolically obese normal-weight (MONW) individuals since as early as 1978.[10] More recently, researchers have found that Type 2 diabetes in Asia is more frequently diagnosed in those who are not obese.

In a 2017 study, researchers compared insulin sensitivity, insulin secretion, intra-abdominal, muscle and liver fat, and fasting and postprandial glucose and insulin concentrations in two groups.[11] MONW individuals and a control group of healthy persons were matched for age, total body fat and sex.

Compared to controls, MONW participants had nearly two times more visceral fat and four times more liver fat. While hemoglobin A1c concentrations were similar between the groups, the glucose and insulin concentrations after eating were higher in the MONW group than in the control subjects.

This led researchers to conclude that those with an MONW body type have a higher accumulation of fat in the intra-abdominal and liver areas and increasing insulin resistance with a greater insulin response to compensate for the resistance. This demonstrates that the total picture of health is related to more than just weight.

Fasting Is a Powerful Tool

Intermittent fasting is a powerful approach to facilitate better eating habits and weight loss and to reduce your risk of chronic diseases such as Type 2 diabetes,[12] heart disease[13] and cancer.[14]

Intermittent fasting doesn't have to be difficult and it can be started gradually to help increase your potential for success. Basically, it is a cycle of eating and fasting that attempts to mimic the eating habits of our ancestors who did not have access to food 24 hours a day, 7 days a week. This helps restore your body to a more natural state.

Eating throughout the day — the opposite of intermittent fasting — means your body adapts to burning glucose as a primary fuel, which downregulates enzymes used to burn and store fat. Unfortunately, you then become progressively more insulin resistant and efforts to lose weight can be ineffective.

It is important to remember that intermittent fasting does not have to be a form of calorie restriction. In other words, the practice should make you feel good, not weak and

lethargic. As your body begins to burn fat as its primary fuel, sugar cravings begin to subside and you feel full for a longer period of time.

However, it is not advisable to use intermittent fasting if your daily intake is filled with processed foods. In other words, this practice is not a cure-all for poor health and excess weight when your diet is filled with non-nutritive foods.

There are several health benefits you may experience by practicing intermittent fasting, including the reduction of insulin resistance, the promotion of leptin sensitivity, the lowering of triglycerides and the prevention or reversing of Type 2 diabetes. You'll discover these and more in my previous article, “Top 22 Intermittent Fasting Benefits.”

Eating Keto Builds a Foundation for Cellular Health

The practice of nutritional ketosis is focused on eating high amounts of healthy fats. Aim for 70% to 85% of your total calories from healthy fat and 1 gram of protein for every kilogram of lean body mass. Focus on keeping your net carbohydrates at no more than 4% to 10% of your daily calories.

The variation in net carbs considers energy requirements that are different from person to person, depending on physical activity. There is no set amount of fat you can eat but you need to limit carbohydrates and protein for a standard ketogenic diet.

Following a ketogenic diet often increases your level of energy and helps you lose and maintain weight loss. Far greater than weight loss, it also helps support your mitochondrial health and reduces inflammation.

This may play a role in reducing chronic and neuropathic pain.[15] Many aging factors are impacted by low-grade inflammation, so a ketogenic diet may help reduce your risk of premature aging and chronic diseases.[16] The diet also helps reduce insulin resistance, which is associated with heart disease, cancer, diabetes and Alzheimer's disease.

It has a positive effect on your immune system. A team from the Yale School of Medicine[17] tested the theory that ketosis could protect against influenza.[18] They found

that infected mice that ate a keto diet were less likely to die from the virus than mice who were fed a standard diet.

Please note that while at least one of the study's authors told news media that getting vaccinated against influenza is the optimal thing to do, there are other, better ways of fighting flu that I describe in "Will Eating Keto Help Prevent Flu?"

Fasting With Cyclical Nutritional Ketosis for Optimal Health

Using a cyclical approach to a ketogenic nutrition plan will help increase the health benefits and allow you greater flexibility in your meal planning. There are three things you need to do to follow this plan.[19]

1. Restrict net carbohydrates (total carbs minus fiber) to 20 to 50 grams per day
2. Consume 50% to 85% of your daily calories from healthy fat
3. Limit protein to one-half gram of protein per pound of lean body mass

It is important to maintain these ratios until your body is burning fat for fuel. Use keto testing strips to confirm you are in ketosis and keep in mind it may take a couple of weeks to a few months until your body is effectively burning fat. Once you're in ketosis and this starts happening, begin cycling in and out by eating a higher number of net carbs once or twice a week.

On your high-carb days, triple the amount of net carbs to maximize the biological benefit of cellular regeneration and renewal. However, I caution you to choose healthy alternatives such as digestive-resistant starches. Forgo the potato chips and bagels.

Fasting is a powerful lifestyle tool to combat obesity and insulin resistance. When you combine the power of fasting and the energy of eating keto it creates a strong foundation for optimal health.

Sources and References

- [1] World Health Organization

- [2] Obesity Action
- [3] Worldometer
- [4] Plos|Biology, February 27, 2020; doi.org/10.1371/journal.pbio.3000622
- [5, 6] EurekAlert! February 28, 2020
- [7] Diabetes and Metabolism Journal, 2018;42(3):179
- [8] The American Journal of Medicine, 2007;120(10):863
- [9] Daily Mail, November 20, 2014
- [10] Perspectives in Diabetes, 1998;47
- [11] American Journal of Physiology, Endocrinology and Metabolism, 2018;314:E494
- [12] BMJ Case Rep 2018. doi:10.1136/bcr-2017-221854
- [13] Frontiers in Physiology, 2016; doi.org/10.3389/fphys.2016.00350
- [14] Clinics, 2018;73(1)
- [15] Plos|One, 2009;4(12)e8349
- [16] Impact Journals:Aging, 2016;8(11):2814
- [17] New Scientist, November 15, 2019
- [18] Science Immunology, November 2019; 4(41):eaav2026
- [19] Diabetes.co.uk January 15, 2019