

## Cooperative Extension

### Good Nutrition for Better Sleep

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How do you know that the quality of your sleep affects your diet? Studies show that inadequate amounts of sleep can increase your appetite, especially for foods higher in carbohydrates, and a lack of sleep gets our body hormones out of whack. Ghrelin, the hormone that is responsible for hunger, is produced at higher rates, while Leptin, the hormone that controls satiety, is produced at lower levels. This imbalance is what causes us to reach for that cream cheese bagel at lunch instead of the salad.

So, if the quality of your sleep affects your diet, does the quality of your diet affect your sleep?

In short, yes. What we eat during the day not only gives us energy, but can actually affect our sleep. The food we eat throughout the day affects our hormonal balance and can actually help us sleep better or worse. There are certain foods and eating habits that can stimulate a calming response from your nervous system and certain foods that can stimulate it.

Let's start with the obvious, caffeine. Most likely the reason you do not wake up feeling well rested, even if you got those 8 hours of sleep, is because the quality of your sleep was poor. Caffeine can interfere with our sleep cycle and prevents us from falling into a deep sleep. Deep sleep is when your body repairs itself, strengthens its immune system, and keeps those hormones in check. Drinking too much caffeine laden beverages throughout the day, or drinking it later in the day can affect your deep sleep. Start by reducing your total caffeine intake, or cutting yourself off by 3 PM. Or better yet, try skipping caffeine for a day and see how your sleep quality improves.

Eating heavy meals late at night will not help you sleep better and large meals stimulate your digestive tract. There is an increase in blood flow and many hormones are being secreted. During digestion the nervous system is stimulated, not calmed, making it difficult to have a good night sleep. So try to eat dinner at least 3 or 4 hours before bedtime.

Try drinking herbal tea. Research has been shown in many studies that drinking a nice hot cup of Chamomile tea will help calm the nervous system before bed. Herbal teas do not contain caffeine; therefore, they are safe to consume before bed without the risk of stimulating the nervous system.

Balance your meals throughout the day. Do not skip breakfast or lunch as this can throw off your hormone balance, which leads to inadequate sleep. These meals should include carbohydrates, protein, and healthy fats, all of which supply the body with the vitamins and minerals that are necessary for better sleep. A diet high in vitamin B, zinc, and magnesium, all of which can be found in whole grain foods, may help your overall sleep cycle.

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# Be Safe with Raw Dough

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**B**aking can be a great family activity, and who doesn't love licking the spoon or the bowl after they're done making the batter? There are, however, real risks that need to be considered.

Most people know about the dangers of Salmonella in cookie dough containing raw eggs. Salmonella can infect laying hens, and then either get inside the eggs, or persist on the shell after being laid. Although Salmonella may be inside intact eggs, the risk from cracked or dirty eggs may be higher. Consider using pasteurized egg products when making a dough or baked product. People that are infected with Salmonella will begin to feel sick after 6 to 48 hours and will be sick for 4 to 7 days. Hospitalization or death may occur especially for the very young, the very old or the immunocompromised.

Attention has recently shifted to emphasize the risks associated with flour due to outbreaks attributed to pathogenic E. coli. This organism can

cause stomach cramps, diarrhea (sometimes bloody), and vomiting. While many affected make a full recovery, young children are especially at risk, and hospitalization or even death can result.



Seventy-two people became ill from Nestlé Toll House refrigerated premade cookie dough in 2009 because of contamination from E. coli O157:H7. Thirty-four people were so sick they required hospitalization. Nestlé made significant changes to their practices after the outbreak to minimize risk.

The problem made the news again in 2016 when many people were sickened by another pathogenic strain E. coli known as O121. There were ten million pounds of General Mills flour recalled including all-purpose, bleached and self-rising flours.

While the technology to manage risks from refrigerated premade cookie dough exist, the solution to managing risk from raw flour are more complex and are as yet not fully realized. Companies like General Mills and others are actively working to find long term solutions to the problem.

Until these solutions are implemented, consumers need to be aware of the risks. "Flour crafts" for kids should also not contain raw flour even if it is just for arts and crafts. While the risks are low, care should still be taken to avoid consumption of raw dough, even if it doesn't contain raw eggs.

## When handling dough remember:

- ✓ **Never eat raw dough**, whether it is for cakes, cookies, breads, pancakes, or tortillas.
- ✓ **Never let children play with raw dough** even dough from restaurants that allow it.
- ✓ **Follow all baking instructions** and cook properly to the temperature indicated by baking instructions before consumption.
- ✓ **Do not make ice cream or milkshakes out of raw dough products** such as cake mixes. Cookie dough used in cookie dough ice cream sold commercially has been properly treated to kill harmful bacteria.
- ✓ **Keep raw flour and eggs away from ready-to-eat foods**, and prevent cross-contamination.
- ✓ **Remember that flour is a powder** and can be easily spread.
- ✓ **Make sure to properly refrigerate all dough** according to instructions until it is ready to be cooked or baked.
- ✓ **Always clean up after handling dough and raw products.** Make sure to wash hands with soap and water and clean all surfaces and utensils that have been used to work with raw dough.

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Salmonella and Eggs. Centers for Disease Control and Prevention. <https://www.cdc.gov/features/salmonellaeggs/index.html>  
Multistate Outbreak of E. coli O157:H7 Infections Linked to Eating Raw Refrigerated, Prepackaged Cookie Dough (FINAL UPDATE). <https://www.cdc.gov/ecoli/2009/cookie-dough-6-30-2009.html>

## VISIONS

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# The Ketogenic Diet: Just Another Fad?

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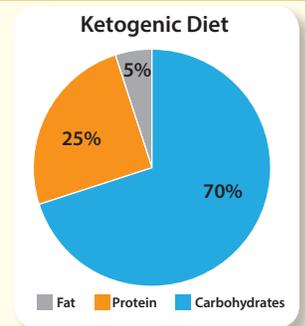
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You may have heard about the ketogenic diet recently on the news, from your favorite blogger or even from your favorite athlete. This diet has gained popularity due to claims of weight loss, improved endurance and even the reduction of developing chronic diseases such as diabetes and cardiovascular disease. Sound too good to be true? Well, it just might not be true.

## What is it?

The ketogenic diet is described as a reformed version of the Atkins diet; low carbohydrates (at most 30% of total intake) with a moderate intake of protein (1.2-1.5g/kg/day) and high intake of fat (60-80% of total intake). This diet introduced in 1921, gained attention due to its potential benefit for epilepsy. Researchers found when epileptic patients adopted a high fat, low carbohydrate diet the body was forced into a state of ketosis. Ketosis happens when fat is burned for energy instead of glucose. This change in energy metabolism leads to an increase in ketone bodies becoming a source of energy for the brain, which may contribute to seizure control for a person with epilepsy. The diet benefits patients with epilepsy and the need for seizure control, but please consult with your physician before you follow any special diet plan.



## Does it Work?

Although research shows the benefits of the ketogenic diet with patients that have epilepsy, more people (especially athletes) are now choosing to follow this diet for weight loss or improved endurance. New studies evaluating subjects that follow the ketogenic diet, find that subjects do lose weight while on the diet. This can be caused by an increase in satiety (fullness) due to the suppression of ghrelin, the hunger hormone.

Most of the studies that have been conducted are evaluating subjects over a short-term period, ranging from 3 weeks to 24 weeks. Subjects are able to lose weight, their triglyceride profiles improve, as does their blood pressure. Researchers suggest the increase in protein intake rather than fat is responsible for the early satiety and weight loss.

Research on the effects of the ketogenic diet on athlete performance is also very limited. Many of the studies published do not consider the effectiveness of the ketogenic diet as compared to other weight loss methods which include improved physical performance through increased physical activity. Therefore, adopting the ketogenic diet does not improve physical endurance or physical performance.

## Pros vs Cons

Following the ketogenic diet can be very beneficial for patients with epilepsy due to the increase of seizure control. Perhaps this may be the most beneficial aspect of following this diet. Short-term, this diet may help people lose weight and improve metabolic profiles, however, long-term there is no evidence to suggest lasting improved results. It's important to keep in mind many of the studies do not evaluate the types of fat consumed in the participant's diet. Consuming various amounts of monounsaturated and/or saturated sources of fat may have adverse metabolic affects, so claims that the ketogenic diet can improve cholesterol and triglyceride profiles may be unreliable.

If you're healthy and eating a balanced diet, your body controls how much fat it burns, and you don't normally make or use ketones. But when you cut way back on your calories or carbs, your body will switch to ketosis for energy. It can also happen after exercising for long periods of time and during pregnancy. Ketosis during pregnancy can cause brain damage to the baby with irreversible mental retardation after birth. In non-pregnant adults it disturbs the body's normal acid-base balance. For people with uncontrolled diabetes, ketosis is a sign of not using enough insulin. People with diabetes can get diabetic ketoacidosis when they don't take enough insulin or when they're sick, injured, or they don't get enough fluids and become dehydrated. Others without diabetes can get ketoacidosis, too as it's also caused by alcoholism, starvation, or an overactive thyroid. More studies are needed before following a ketogenic diet.

In addition to the lack of long-term studies, it may be difficult to stick to a low carbohydrate, high fat diet. Sample foods included in this diet might be: meat, avocados, nuts, cheese and other sources of protein and fat. The diet limits carbohydrates which includes fruits, vegetables and whole grains which contain many essential nutrients and fiber. With the limitation of these foods in the diet, one may be at risk for developing nutritional deficiencies while on the ketogenic diet. Overall, results from various studies have shown that there is a lack of long-term benefits when following the ketogenic diet.

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# The Benefits of Budgeting

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Rutgers Cooperative Extension faculty recently had a study published in the *Journal of Family and Consumer Sciences* that found positive and statistically significant relationships between the practice of using a budget and eighteen positive health and financial practices. Specifically, the results suggested that consumers who reported following a budget more often scored higher in indexes of both health and financial practices.

A small step that everyone can take to increase their wealth and financial security is to develop and follow a budget (a.k.a. spending plan). Unfortunately, many people view the word “budget” as very negative word. Like the word “diet,” people think of the three Cs (cut back, cut out, and can’t) or the three Ds (denial, deprivation, and don’t). A much better way to view a budget is as a valuable tool to enhance your future financial security. In other words, as a positive feature in your financial life. There is even a personal finance blogger, J. Money, who tweets with the handle **@BudgetsAreSexy**.

A budget is a plan for future income and expenses, including savings required to achieve financial goals. Ideally, a budget should be written (paper, computer spreadsheet, etc.) with specific categories of income and spending and dollar amounts. Benefits of budgeting include providing “guardrails” (i.e., designated limits) for spending, achieving financial goals (if savings is included as a fixed “expense”), and for peace of mind.

Budgets are a future-oriented financial document that project income and expenses with a goal of positive cash flow (i.e., income greater than expenses). Developing and following a budget requires a level of attention to detail (e.g., recording and adjusting expenses). The first step is to carefully track income and expenses to determine current spending levels. Be sure to include periodic expenses and divide their annual by cost by 12 to arrive at a monthly cost. For example, \$4,000 of annual property taxes costs \$333 monthly.



A budget is telling your money where to go instead of wondering where it went.

JOHN C. MAXWELL

The second step is to use the income and expense tracking data to determine future amounts for each category of income and spending. The goal is for income to equal expenses, including savings, to balance the “bottom line.” It generally takes several attempts to get the numbers to balance out. This is perfectly normal and to be expected. If you are working the numbers by hand, use a pencil with a good eraser. With computer spreadsheets, you can easily change numbers and do a variety of calculations with the click of a mouse.

Research indicates that people who prepare a detailed household budget are in the minority in the U.S. Despite expert recommendations to develop a budget, recent studies have found that less than half of all Americans actually do. One study of results from a national survey about financial management practices found that less than half (46%) of 1,004 respondents used a budget and 36% planned and set goals for the future.

Research using data from the Rutgers Cooperative Extension Financial Fitness Quiz investigated the performance of 20 financial practices using an online financial self-assessment tool with 10,661 respondents from 2005 through 2010. Budgeting was among the five quiz items least frequently performed, ranking 16 out of 20, in order of mean scores. A widely quoted Gallup Economy and Personal Finance Survey in 2013 found that only 32% of American households prepare a written budget or use software for a spending plan.

When budgeting is described in less rigid terms (i.e., without having to be in a written form), more Americans say that they do it. For example, a survey by Bankrate Inc. in 2015 found that 82% of Americans kept a household budget. However, only 36% of those surveyed used a pen and paper while 18% kept information in their heads and 26% used a computer program or smart phone app.

All of these research findings indicate that budgeting needs to be convenient for people to do if it is to be performed as a routine financial management practice. Rutgers Cooperative Extension has several online resources to assist with budget preparation. To download a worksheet that can be printed out and completed with a pencil and a hand-held calculator, visit <http://njaes.rutgers.edu/money/pdfs/fs421worksheet.pdf>.

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# Skip The Salt, Please

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If you are among the 56% of United States adults over the age of 18 who have been diagnosed with prehypertension or hypertension (high blood pressure), you've probably been told to limit your sodium intake. While sodium is a mineral needed by the body for certain functions, it can have consequences in excessive amounts. Physicians and dietitians recommend dietary sodium reductions because sodium contributes to fluid retention in our blood vessels, which causes a build-up of tension along the artery walls causing high blood pressure. Prolonged hypertension makes your heart work harder which can damage arteries and consequently harm other vital organs like the kidneys and brain. Without support from proper dietary interventions and management, hypertension can lead to dependence on medication.

You might be asking how much sodium we should have in our diet? The Dietary Guidelines for Americans recommend that healthy people over the age of 14 years old limit their sodium intake to less than 2,300 milligrams daily. To put that into perspective, that is the equivalent of 1 teaspoon of salt. If you have prehypertension, hypertension, or are at risk for high blood pressure, sodium intake should be reduced to less than 1,500 milligrams daily.

Contrary to popular belief, the majority of the sodium in our diets does not come from the salt shaker. In fact, according to the U.S. Food and Drug Administration, only about 11% of dietary sodium comes from cooking with it or adding it to our foods. The vast majority, a whopping 75%, comes from dining at restaurants and from prepackaged foods. Despite these facts, there are several ways that everyone can reduce their dietary sodium intake.

Learning how to read food labels will be a tremendous help when grocery shopping for packaged goods. Reading the nutrition fact label to compare sodium contents of foods will allow you to choose items that are lower in sodium. Be sure to check the serving sizes as well. The nutrition facts are based on 1 serving of the food. A can of soup that you might enjoy is likely 2 servings, which means it is double the amount of sodium listed on the nutrition facts label. You can also use the Percent Daily Value (% DV) on the label to understand if a serving is low in sodium or high in sodium. The %DV represents the percentage of sodium in one serving based on 2,400 mg. If an item is 5% DV or less, it is considered low. If the serving is 20% DV or higher, it is considered high.

Being educated on nutrient claims found on packaged foods will also prepare you for making the best choice. An item that states it is "reduced sodium" means that it has at least 25% less sodium than its original counterpart, however it might not mean it is low sodium. Also, "no salt added" or "unsalted" does not mean it is free of sodium, so always check the labels!

## Other ways to reduce dietary sodium intake include:

- Cooking or preparing meals at home to control added sodium.
- Rinsing canned foods that are preserved in a liquid (sodium acts as a preservative!).
- Seasoning foods without salt (try sodium-free spice blends, fresh lemon or lime juice or vinegar).
- Being mindful of the condiments you use.

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## The Benefits of Budgeting - continued from page 4

To download a spending plan spreadsheet that uses pre-programmed Microsoft Excel® software complete with mathematical formulas to make income and expense calculations with a computer, visit <http://njaes.rutgers.edu/money/templates/Spending-Plan-Template.xls>. Placeholders in the rows and columns of the spreadsheet allow users to enter data on their own personal computer with mathematical calculations are already pre-programmed.

Want to build wealth and take charge of your finances? Develop a budgeting system that works for you. Budgets don't have to be a tedious chore. With user-friendly tools and a positive attitude, budgets can be sexy!

# Protein Timing, Quantity and Quality Ensures Rebuilding Muscle and Recovery Success!



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Understanding the importance of dietary protein for recovery has been popular due to countless articles on the internet and constant attention from the supplement industry. The question is, for those who engage in resistance exercise which involves lifting free weights, using weight machines, resistance bands and moving your own body weight, when is protein intake optimal? What type of protein is best? And how much should be consumed?



Protein is made up of building blocks called amino acids. There are 9 essential amino acids and 11 non-essential amino acids. Essential amino acids are not produced by our body and must be consumed in the form of protein rich foods and/or supplements. Together, these amino acids work synergistically and allow for muscle repair and recovery. The essential amino acid Leucine in particular, increases muscle protein synthesis (MPS). Twenty grams of “quality” protein will have from 2 to 3 grams of Leucine per serving. Good food sources that contain Leucine are: Greek yogurt, eggs, chicken, and milk protein such as whey and casein. Leucine increases the transport of other amino acids to muscle which improves muscle repair and recovery.

## Pre-Workout Fueling with Protein?

Studies indicate that ingesting a 2:1 ratio of carbohydrate to protein (35 grams of carbohydrate to 15 grams of protein) prior to resistance exercise, will induce an anabolic response and increase the amount of amino acids that reach our muscles. This, however, may not be ideal for those who cannot eat prior to their workout. A good rule of thumb is to eat two hours before exercising so you can ensure proper digestion. Any time after that, and up until your workout, a protein rich food with fast digesting carbohydrates may be a better option.

## Protein During Resistance Training?

There is minimal benefit to ingesting protein during your resistance training workout. Focus on getting a quality work out and look forward to your post workout recovery meal.



## Post Workout Protein?

Contrary to popular belief, your “anabolic window”, a term used in strength training to describe the small window of time the body has after resistance exercise to shift the body from muscle protein breakdown (catabolic state) to muscle protein synthesis (anabolic state), happens between 30 minutes to an hour after your workout. There is some strength and lean body mass benefits to ingesting protein up to 4 hours after your workout. The key is to consume a sufficient amount of protein throughout the day and focus less on overconsuming protein immediately before and/or after your workout... but how much protein should you consume?

## How much Protein Should I Consume after Resistance Training?

You may be thinking to yourself that the more protein you consume, the better, right? Research shows that ingesting more than 20-25 grams of various quality proteins will be used for energy production and waste rather than further utilized for muscle protein synthesis (MPS). However, the research is conflicted and needs to be further investigated.

If you are a regular gym enthusiast who incorporates resistance training for 60 to 90 minutes daily, aim for 20-25 grams of high quality protein within 2-3 hours of your

### Foods high in Protein and Leucine content:

High Protein Foods	Serving Size	Protein (g)	Leucine (g)
Eggs	3 Large Eggs	19g	1.5g
Chicken Breast	3 oz	25g	1.8g
Greek Yogurt	1 serving container	15g	1.5g
Tuna	¼ cup	16g	1.1g
Salmon (wild caught)	3 oz cooked	23g	1.9g
Beef Tenderloin	3 oz cooked	26g	1.6g
Chocolate Milk	8 oz	8.0g	0.8g

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# Set Boundaries to Achieve Financial Goals

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Research indicates that one of the best ways to stick with any type of goal (e.g., health and finances) is to set boundaries. In other words, draw a “line in the sand” and develop personal policies to help say “no,” resist temptation, and stay on course.

Consider this analogy from the world of NASCAR Motor Sports. Ever since a car wreck nearly killed hundreds of spectators in the grandstands at Talladega Super Speedway in 1987, when a speeding car went airborne, certain races have required drivers to use “restrictor plates” to slow down their cars.

Like Talladega race cars, people also need “restrictors” to slow them down so they can stick to their financial goals. In other words, cues to limit spending and/or debt because they’ve “had enough.” Consider the following examples of financial restrictions:

- Spending no more than \$500 on holiday gifts and parties.
- Charging no more than \$300 per month on credit cards for new purchases.
- Spending no more than \$100 a week at the supermarket.
- Buying a “new used” car, instead of a new car, to reduce the cost.
- Depositing 5% of gross income in a 401(k) or 403(b) plan via payroll deduction (to “restrict” income)



Another way to set boundaries is to change your response to inevitable temptations. According to research cited by productivity expert James Clear, the words “I don’t” are a much more effective response to temptation than the words “I can’t.” In one study, respondents were divided into two groups. When faced with temptation to eat chocolate candy, one group was told to say “I can’t” and the other said “I don’t.” Those that used the words “I don’t” succumbed to temptation to eat candy bars much less frequently (36% versus 61%).

In another study cited by Clear, there were three groups of respondents who were working on a wellness goal: a control group that was given no specific strategy, a group that said “I can’t miss my workout today,” and a group told to say “I don’t miss workouts.” The control group, “I can’t” group, and “I don’t” group had 3 out of 10, 1 out of 10, and 8 out of 10 members, respectively, who persisted with their goals.

Clear notes that words “frame your sense of empowerment and control” and can result in very different actions:

- “I can’t” sounds like someone else is in control and forcing you to do something that you don’t want to do.
- “I don’t” sounds like you are in control and that you have power over the situation.

How can you apply this information? Write some “I don’t” statements to help you achieve your goals. Below are five personal finance examples to consider:

- I don’t pay interest and fees to use credit cards
- I don’t get car loans longer than 4 years
- I don’t invest in any investment product that I don’t understand and feel comfortable with
- I don’t use payday loans and pawn shops
- I don’t pay bills late

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workout. This equates to 0.25 grams of protein per kilogram (kg) of body weight. For example, a 90 kg male (about 200 lbs.) needs 22.5 grams of protein. Keeping this protein range at each meal will ensure adequate protein for the day and recovery success!

### Protein supplementation with the highest Leucine content:

Protein Supplement	Serving Size	Protein (g)	Leucine (g)
Whey Isolate Grass-Fed	1 scoop (34g)	24g	2.8g
Soy Isolate	1 scoop (34g)	31g	2.5g
Casein Micellar	1 heaping scoop (34g)	34g	2.7g
Pea Isolate	1.5 scoops (33g)	15g	1.9g
Chocolate Milk	8 oz	8.0g	0.8g

## Good Nutrition for Better Sleep - *continued from page 1*

Get off of your phone, tablet, and laptop about an hour before bed. It is not food related, but the blue light that is emitted from these devices will change your melatonin levels, the sleep-inducing hormone. This can make it harder for you to fall asleep, meaning you will sleep less, or have a lower quality sleep. This can lead to increased hunger the next day, and weight gain in the long term. Try reading a book while sipping your Chamomile tea instead.

Incorporating these tips should improve the quality of your sleep and overall health.

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