

# Nutrition Perspectives

University of California, Davis, Department of Nutrition and the Center for Nutrition in Schools

## Diet High in Refined Carbohydrates May Increase Risk of Insomnia

New research published in the *American Journal of Clinical Nutrition* suggests that what we eat may impact how we sleep. In a study of over 70,000 post-menopausal women, those whose diets contained more foods with a high glycemic index were more likely to have developed insomnia during the study. (1)



Carbohydrates that have a high glycemic index are those that are digested and absorbed quickly, such as sugars and easily-digested starches. These types of foods tend to cause a rapid rise in blood sugar. Foods with a lower glycemic index are higher in fiber and take longer to digest and absorb, such as fruits, vegetables, and whole grains. As a result, they do not cause as large of a spike in blood sugar as high-glycemic index foods do.

This study was part of the Women’s Health Initiative, which followed a diverse cohort of post-menopausal women for several years, starting in 1993. At the start of the study, participants completed a food frequency questionnaire and a questionnaire that measured insomnia. After three years, the participants completed the insomnia questionnaire again so that the researchers would be able to identify new cases of insomnia and determine if those were related to diet before the insomnia developed.

The researchers found that increasing consumption of high-glycemic index foods was associated with greater likelihood for insomnia. This was the case even after considering other factors that might be related to diet or insomnia, such as body mass index, physical activity, demographic characteristics, certain health conditions and medications,

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## Insomnia (Continued from page 1)



*After controlling for potentially-related factors, those who had a high-glycemic index diet were more likely to develop insomnia.*

caffeine consumption, and depression. When they compared newly-developed insomnia to diet three years earlier, the results were similar; after controlling for other potentially-related factors, those who had a high-GI diet were more likely to have developed insomnia at the three-year follow-up.

When considering what may be causing this relationship, the researchers speculated that it may be related to spikes in blood glucose and subsequent increases in insulin and other hormones (2). Other possible explanations might be related to the effects a high-glycemic index diet may have on gut microbiota or on inflammation, either of which could potentially disrupt sleep (3-5).

These findings should be interpreted with caution, however. Since the study only included post-menopausal women, the results may not apply to men or pre-menopausal women. Furthermore, since diet was assessed at only at the start of the study, it's impossible to determine if there were changes in diet that may have been related to the new cases of insomnia. Despite these limitations, this research suggests a potential avenue for additional studies into diet and insomnia as well as diet-related interventions to prevent or treat insomnia.

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## Decline in Early Childhood Obesity in WIC Families



*Parents can serve nutritious foods for meals and snacks and be a role model for preschoolers by eating fruits and vegetables alongside them.*

In a new study, 41 U.S. states and territories show significant declines in obesity among children, aged 2-4 years, from low-income families enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) between 2010-2016, according to data published in CDC's *Morbidity and Mortality Weekly Report* (1).

In 2009, WIC state agencies were required to implement redesigned WIC food packages to better align with the U.S. Dietary Guidelines for Americans and infant feeding practice guidelines of the American Academy of Pediatrics. This change led to increased availability of healthier foods and beverages in authorized WIC stores and improved dietary quality among families who enrolled in WIC.

In addition to the food packages, WIC helps to establish successful long-term breastfeeding, provides participants with a wider variety of food, and offers WIC state agencies greater flexibility in prescribing food packages to adapt to participants with cultural food preferences.

Despite these recent declines in obesity among children enrolled in WIC, the prevalence remained high in most states in 2016.

"Improvements in national, state, and caregiver guidance around nutrition and physical activity may be contributing to this decline in childhood obesity," said CDC Director Robert Redfield, M.D. "We are moving in the right direction and helping parents make healthy choices for their children is reducing the potential for complications posed by childhood obesity later in life."

CDC and U.S. Department of Agriculture (USDA) researchers analyzed obesity trends from 2010 to 2016 among young children, aged 2 to 4 years, from low-income families enrolled in WIC. Over 12.4 million children aged 2 to 4 years from 56 WIC state agencies and territories were included in the study.

### Key findings:

- In 2016, obesity prevalence among young children enrolled in WIC varied from 7.8% to 19.8%.
- During 2010–2016, obesity decreased by more than 3 percent in seven WIC state and territorial agencies (New Jersey, New Mexico, Utah, Virginia, Guam, Northern Mariana Islands, and Puerto Rico).



*The WIC food packages were redesigned in 2009 to better align with the Dietary Guidelines.*

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## WIC Families (Continued from page 3)

- Three state agencies showed significant increases in obesity: Alabama (0.5 percent), North Carolina (0.6 percent), and West Virginia (2.2 percent)
- A previous study reported that 34 of 56 WIC state/territory agencies experienced decreases in obesity prevalence during 2010–2014.

“While we have seen some progress, obesity prevalence among young children remains too high,” said Dr. Ruth Petersen, M.D., M.P.H., director of CDC’s Division of Nutrition, Physical Activity, and Obesity. “We must persist in our efforts to support healthy eating and physical activity for this positive trend to continue.”



### Efforts to address childhood obesity

In addition to improvements in the WIC program, local, state and national efforts designed to prevent childhood obesity, may have contributed to this decline. For example, CDC provided support for states and communities to implement nutrition, breastfeeding support, physical activity, and screen time standards in early care and education systems and settings. Also, improvements in maternity care policies and practices to support breastfeeding in birthing facilities and workplaces could be a factor in this decline in childhood obesity.



*During 2010–2016, obesity decreased by more than 3 percent in seven WIC state and territorial agencies (New Jersey, New Mexico, Utah, Virginia, Guam, Northern Mariana Islands, and Puerto Rico).*

### What more can be done?

There is no simple solution to the issue of childhood obesity. Further implementation of a comprehensive approach that calls for positive changes in multiple settings to promote healthy nutrition and physical activity for young children could help continue the declines in childhood obesity. Policy makers, state and local organizations, business and community leaders, school, childcare and healthcare professionals, and individuals must work together to create an environment that supports a healthy lifestyle. Parents can serve nutritious foods for meals and snacks and be a role model for preschoolers by eating fruits and vegetables alongside them. Parents can make water available throughout the day and limit the screen time of preschoolers at home. Parents can support and encourage preschoolers to be physically active every day.

There are several ways state and local organizations can create a supportive environment to promote healthy living behaviors that prevent obesity. States can embed National Standards for obesity prevention into state early child care

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education (ECE) guidelines such as licensing, quality rating, subsidy, professional development.

States and communities can support mothers who choose to breastfeed, work with early care and education (ECE) centers (child care) and schools to improve healthy food and beverage offerings and opportunities for physical activity for children. In addition, they can work to increase access to healthy and affordable foods and make it easier and safer to walk and bike where families live, learn, work, and play.

For more information about CDC’s childhood obesity and prevention efforts, visit [www.cdc.gov/obesity](http://www.cdc.gov/obesity).

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Source: CDC Newsroom Releases. November 21, 2019; <https://www.cdc.gov/media/releases/2019/p1121-decline-childhood-obesity-wic-families.html>

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## Losing Weight Too Quickly May Impact Bone Mineral Density

In a new study in *JAMA Network Open*, researchers found that severely cutting calories results in greater weight loss than moderate calorie restriction, but at a cost—it may also increase bone loss (1).

The study recruited post-menopausal women with a body mass index (BMI) between 30 and 40 kg/m<sup>2</sup>, which is considered obese. They were randomized in groups depending on age and BMI to either moderate calorie restriction (25-35 percent restriction relative to calorie needs, or about 1 to 2 pounds of weight loss per week) or to severe calorie restriction (65-75 percent reduction, or about 3 to 5 pounds of weight loss per week). For someone who needed 2,000 calories per day, this would mean consuming about 1,300 to 1,500 calories per day in

the moderate restriction group and 500 to 700 per day in the severe restriction group.

Those in moderate calorie restriction followed a diet based on the Australian Guide to Healthy Eating for 12 months. The severe restriction diet consisted of meal replacement shakes and soups, which they consumed for 4 months before switching to moderate calorie restriction for the next 8 months.



*Those in the severe restriction group lost more weight and proportionally bone mineral density than the moderate restriction group.*

As expected, those in the severe restriction group lost more weight compared to the moderate

restriction group (on average 33.7 pounds versus 18.5 pounds). The severe group experienced a much larger decline in bone mineral density at

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## Bone Mineral Density (Continued from page 5)



*The severe calorie restriction group consumed meal replacement shakes and soups for the first four months of the study.*

the hip compared to the moderate group. The moderate group experienced declines of approximately 1.3 percent, which is similar to average declines seen in early postmenopausal years (2). The decline in hip bone mineral density was, on average, more than twice that in the moderate restriction group (3.3 percent). Those in the severe restriction group were also more likely to develop osteopenia.

The researchers also investigated other ways in which body composition changed as a result of the diets. At first, the severe restriction group experienced more lean body mass loss relative to the moderate restriction group, however this evened out over time to be proportionate with the amount of weight lost. The severe restriction group experienced greater improvements in waist-to-hip ratio, which indicates a healthy fat distribution.

While more severe calorie restriction resulted in great weight loss and healthier fat distribution compared to the moderate restriction group, the increased bone mineral density loss is concerning. Postmenopausal women are already at higher risk for developing osteopenia and osteoporosis. The authors recommended caution regarding severe calorie restriction for weight loss in this group.

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## 1 in 5 Adolescents and 1 in 4 Young Adults Now Living with Prediabetes

Nearly 1 in 5 adolescents aged 12-18 years, and 1 in 4 young adults aged 19-34 years, are living with prediabetes, according to a new CDC study published in *JAMA Pediatrics*.

Prediabetes is a health condition in which blood sugar levels are higher than normal, but not yet high enough to be diagnosed as type 2 diabetes. The condition also increases the risk of developing type 2 diabetes, chronic kidney disease, heart disease, and stroke.

Monitoring the percentage of adolescents and young adults with prediabetes can help determine the future risk of type 2 diabetes. To do this, CDC researchers used data from the National Health and Nutrition Examination Survey covering the years 2005-2016.

“The prevalence of prediabetes in adolescents and young adults reinforces the critical need for effective public health strategies

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## Prediabetes (Continued from page 6)

that promote healthy eating habits, physical activity, and stress management,” said CDC Director Robert R. Redfield, M.D. “These lifestyle behaviors can begin early in a child’s life and should continue through adolescence and adulthood to reduce onset of type 2 diabetes.”

### Key study findings:

- Nearly 1 in 5 (18 percent) adolescents (those aged 12-18) and 1 in 4 (24 percent) young adults (aged 19-34 years) were living with prediabetes.
- The percentage of adolescents and young adults living with prediabetes was higher in males and participants with obesity.
- Hispanic young adults had higher rates of prediabetes compared to white young adults.

Adolescents and young adults with prediabetes had significantly higher cholesterol levels, systolic blood pressure, abdominal fat and lower insulin sensitivity than those with normal glucose tolerance, which increased their risk of type 2 diabetes and other cardiovascular diseases.

“We’re already seeing increased rates of type 2 diabetes and diabetes-related complications in youth and young adults, and these new findings are evidence of a growing epidemic and a tremendously worrisome threat to the future of our nation’s health,” said Ann Albright, Ph.D., director of CDC’s Division of Diabetes Translation. “Additional research is needed to support the development of interventions for youth and increasing access to programs that we know work for young adults, like the CDC-led National Diabetes Prevention Program.”

### What can be done?

Research shows that adults with prediabetes who take part in a structured lifestyle-change program, including weight management and exercise, can cut their risk of developing type 2 diabetes by 58 percent (71 percent for people over 60 years old). Participation in the CDC-led National Diabetes Prevention Program lifestyle change program can help prevent or delay type 2 diabetes in those at high risk. The program, available to those aged 18 and older, is taught by trained lifestyle coaches, and encourages healthy, whole-life changes to help participants address barriers to improved nutrition, increased physical activity and coping mechanisms for stress reduction.

Parents can also help turn the tide on prediabetes by encouraging healthy eating and increased physical activity. They can aim for their children to get 60 minutes of physical activity a day. To find tips on how to encourage children to eat healthy and stay active, visit CDC’s Healthy Weight site.

There are several ways state and local organizations can create a supportive environment



*Prediabetes raises the risk of developing type 2 diabetes.*

## Prediabetes (Continued from page 7)

to promote healthy weight and help prevent diabetes related to obesity. States and communities can:

- Support mothers who choose to breastfeed.
- Work with early care and education centers and schools to improve healthy food and beverage offerings and opportunities for physical activity for children.

- Increase access to healthy and affordable foods.
- Make it easier and safer to walk and bike where families live, learn, work, and play.

To learn more about diabetes or the National Diabetes Prevention Program, visit [cdc.gov/diabetes](http://cdc.gov/diabetes).

Source: CDC Newsroom Releases. December 21, 2019; <https://www.cdc.gov/media/releases/2019/p1202-diabetes.html>

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## New SNAP Rule May Result in Fewer Adults Qualifying for Benefits

On December 5, 2019, the USDA released a new Final Rule for the Supplement Nutrition Assistance Program (SNAP) that will result in an estimated 700,000 adults losing eligibility for the program when the new rule goes into effect on April 1, 2020 (1-2). These changes primarily consist of limiting the data allowed to be used to request waivers for a limit on the length of time able-bodied adults without dependents (ABAWD) could receive SNAP benefits.

This provision, which originally dates back to 1996, limits the maximum number of months an ABAWD could receive SNAP (then called food stamps) to three months over a three-year period if they did not work an average 20

hours or more per week. However, there was some flexibility allowed to states that had high unemployment or lack of sufficient jobs. It is this flexibility that was curtailed in the new Final Rule.

Previously, states have been able to request a waiver for this limit based on different available data. Under this law, states can request a waiver when the unemployment rate exceeds 10 percent or there is a demonstrated lack of sufficient jobs. Provided a state could justify the method

used, there were a variety of ways that lack of sufficient jobs could be determined. Currently, the majority of waivers are granted based on an



*The Supplemental Nutrition Assistance Program provides aid to millions of Americans that allows them to purchase food.*

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unemployment rate that is 20 percent above the national average as a way to demonstrate lack of sufficient jobs (2). The new requirement also mandates that a region's unemployment rate be above 6 percent in addition to being 20 percent above the national average. For example, the national unemployment rate for October 2019 was 3.6 percent. If a region has an unemployment rate that is 20 percent above this (4.3 percent), that region would no longer qualify for a waiver because it is below the 6 percent threshold.

While there are several different ways unemployment data can be expressed, only one will be allowed under the Final Rule. The metric chosen, known as the U-3 rate, is defined by the Bureau of Labor Statistics (BLS) as the percent of the labor force that are unemployed. This rate has been criticized as overly-limited. When this limit was originally announced in the Proposed Rule released in February 2019 and opened for a public comment period, many commenters suggested that the U-6 rate be used instead (1,3). This BLS-defined rate also captures those who are underemployed and those who unable to find jobs or are discouraged from entered the labor market (also referred to as marginally attached to the labor force). By allowing only the U-3 rate to be used, this may result in underestimating the true extent of unemployment and underemployment in an area; as a result, fewer adults would qualify for SNAP than need assistance.

The Final Rule also limits the sources of data that can be used to establish what is considered an area for the purposes of a waiver. Now, only federally defined "labor market areas" can be used. This limit was criticized during the comment period as using outdated data from the 2010 Census and American Community Dataset (2006-2010), as well as failing to consider variations in industries and regional socioeconomic status. The argument was also made that states better understand regional patterns in labor markets.

These seemingly small changes to how the law is applied curtail the ability of states to identify and respond to regions of unemployment in the ways they have been able to previously. While this Final Rule addressed ABAWD, another Proposed Rule released on July 24, 2019 included other changes for which the Final Rule has yet to be announced. One of these proposed changes, which effects the types of government benefits that result in automatic eligibility for SNAP, will likely result in many more Americans losing SNAP benefits if they are implemented as proposed (4).

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## CDC Food Safety Tips for the Holidays

Feasting with family and friends is part of many holiday celebrations. Follow these simple tips to help prevent food poisoning, or foodborne illness, during the holidays.

- Cook food thoroughly. Meat, chicken, turkey, seafood, and eggs can carry germs that cause food poisoning. Use a food thermometer to ensure these foods have been cooked to a safe internal temperature. Roasts, chops, steaks, and fresh ham should rest for 3 minutes after you remove them from the oven or grill.
- Keep food out of the “danger zone.” Bacteria can grow rapidly in the danger zone between 40°F and 140°F. After food is cooked, keep hot food hot and cold food cold. Refrigerate or freeze any perishable food within 2 hours. The temperature in your refrigerator should be set at or below 40°F and the freezer at or below 0°F.
- Use pasteurized eggs for dishes containing raw eggs. Salmonella and other harmful germs can live on both the outside and inside of normal-looking eggs. Many holiday favorites contain raw eggs, including eggnog, tiramisu, hollandaise sauce, and Caesar dressing. Always use pasteurized eggs when making these and other foods made with raw eggs.
- Do not eat raw dough or batter. Dough and batter made with flour or eggs can contain harmful germs, such as E. coli and Salmonella. Do not taste or eat raw dough or batter that is meant to be baked or cooked. This includes dough or batter for cookies, cakes, pies, biscuits, pancakes, tortillas, pizza, or crafts. Do not let children taste raw dough or batter or play with dough at home or in restaurants. Some companies and stores offer edible cookie dough that uses heat-treated flour and pasteurized eggs or no eggs. Read the label carefully to make sure the dough is meant to be eaten without baking or cooking.



*Use pasteurized eggs for dishes containing raw eggs, such as hollandaise, Caesar dressing and eggnog.*



*Separate raw meat, poultry, seafood, and eggs from other foods to prevent cross-contamination.*

- Keep foods separated. Keep meat, chicken, turkey, seafood, and eggs separate from all other foods at the grocery store and in the refrigerator. Prevent juices from meat, chicken, turkey, and seafood from dripping or leaking onto other foods by keeping them in containers or sealed plastic bags. Store eggs in their original carton in the main compartment of the refrigerator.
- Thaw your turkey safely. Thaw turkey in the refrigerator, in a sink of cold water (change the water every 30 minutes), or in the microwave. Avoid thawing foods on the counter. A turkey

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must thaw at a safe temperature to prevent harmful germs from growing rapidly.

- Wash your hands. Wash your hands with soap and water during these key times when you are likely to get and spread germs:
  - » Before, during, and after preparing food
  - » Before eating food
  - » After handling pet food or pet treats or touching pets
  - » After using the toilet
  - » After changing diapers or cleaning up a child who has used the toilet
  - » After touching garbage
  - » Before and after caring for someone who is sick
  - » Before and after treating a cut or wound
  - » After blowing your nose, coughing, or sneezing



*Do not taste or eat raw dough that is meant to be baked or cooked.*

### Pregnancy and Food

Pregnant women are at increased risk of food poisoning, so take extra care if you're pregnant or preparing food for someone who is.

- Do not eat or drink raw or unpasteurized milk and products made with it, such as soft cheeses. They can contain harmful germs, including Listeria. Do not eat soft cheeses such as queso fresco, Brie, Camembert, feta, goat cheese, or blue-veined cheese if they are made from raw or unpasteurized milk.
- Be aware that Hispanic-style cheeses made from pasteurized milk, such as queso fresco, also have caused Listeria infections, most likely because they were contaminated during cheese-making.
- Processed cheeses, cream cheese, mozzarella, and hard cheeses are safer choices.
- Don't drink raw or unpasteurized juice and cider.
- Be careful with seafood. Do not eat smoked seafood that was sold refrigerated unless it is in a cooked dish, such as a casserole. Instead, choose shelf-stable smoked seafood in pouches or cans that do not need refrigeration.
- Take care with holiday beverages. Drinking any type of alcohol can affect your baby's growth and development and cause fetal alcohol spectrum disorders. Don't drink holiday punches and eggnogs that contain alcohol. Avoid eggnog entirely unless you know it contains no alcohol and is pasteurized or made with pasteurized eggs and milk.

Source: CDC Food Safety; December 4, 2019; <https://www.cdc.gov/foodsafety/communication/holidays.html>

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