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| **Resources – Nutrition & Down Syndrome** |
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Adopted from: <http://www.ncpad.org/165/1278/Down~Syndrome~and~Nutrition>

**Common health concerns related to Down syndrome**

### Weight management

Research documents a high rate of obesity for people with DS. This could be due to:

* Medical concerns such as Gastroesophageal Reflux Disease (GERD), hypothyroidism, and a lower basal metabolic rate (amount of calories needed to support body when resting and awake),
* Medications such as selective serotonin reuptake inhibitors (SSRIs), or
* Limited lifestyles, such as small circles of friends or limited access to exercise opportunities.

It is easy to see how eating an extra small chocolate chip cookie a day (such as Chips Ahoy), which is 50 calories, can lead to weight gain. The calories from one small chocolate chip cookie left over at the end of the day will lead to a 5-pound weight gain in one year. If this continues for 5 years, the outcome will be a 25-pound weight gain!

Talk to your physician in order to rule out medical conditions that are causing weight gain such as hypothyroidism, GERD, or medications that have weight-gain side effects.

#### Suggestions

* Promote a nutrient-dense diet by offering choices that are high in nutrients.
* Involve person with DS in menu planning.
* Teach about appropriate serving sizes.
* Provide options to fast-food socialization.
* Offer fresh fruits and vegetables, and low-fat snacks such as pretzels and popcorn instead of high-fat desserts.
* Limiting calories may not be the best solution due to the risk of vitamin and mineral deficiencies.
* The best solution is to maintain a diet high in needed nutrients and limit junk foods.
* Exercising, even helping with the household chores, increases energy expenditure.

### Celiac Disease

This is an inability to tolerate the protein, gluten, which is found in foods and seasonings that contain wheat, barley, oats, and rye. People with Down syndrome are more likely to develop Celiac Disease than the general population in the United States, with the incidence estimated at 4% to 5%. People with untreated Celiac Disease do not absorb the nutrients from the foods they eat and are often at nutritional risk as a result. The nutrition therapy for Celiac Disease is a gluten-free diet. Resources for a gluten-free diet are listed at the end of this fact sheet.

### Diabetes

Research suggests people with Down syndrome are at a greater risk for developing diabetes, but it is not clear if the occurrence of either type 1 (insulin dependent) or type 2 (non-insulin dependent) diabetes is greater than that of the general population in the United States.

Nutrition therapy for people with diabetes is highly individualized and should be worked out with a registered dietitian or certified diabetic educator. People with Down syndrome, their families, and primary support people need to be educated and made aware of the care plan agreed to by the person with Down syndrome and their dietitian. Nutrition therapy is usually combined with different types of medication along with blood sugar testing, all of which require the active participation of the person with Down syndrome.

#### Diabetes and Physical Activity

* Eat a snack prior to exercise.
* Monitor blood glucose or behavior after exercise for signs of low blood sugar.
* Work with a dietitian or certified diabetic educator to manage exercise and physical activity.

### Constipation

People with Down syndrome are at an increased risk of constipation due to low muscle tone and sedentary lifestyle.

#### Suggestions

* Adequate fluid intake, preferably water: 6-8 eight-ounce glasses per day.
* Raw fruits and vegetables: Leave skin on, as it is a great source of fiber.
* Dried fruits such as raisins, prunes, and figs.
* High fiber grains/cereal products: bran, whole-wheat flour, whole cornmeal, wheat bran cereals (All Bran, Bran Buds, Bran Chex), bran flakes (Raisin Bran), Grape-Nuts, Shredded Wheat, Fiber One.
* Regular meals during the day.
* If the above do not work, consult with the registered dietitian or physician about taking high-fiber supplements such as Miralax or Benefiber.

### Hyper and hypothyroidism

While there is no direct nutrition therapy, these are nutrition-related concerns for obvious reasons. With one, you have weight loss that is unaccounted for; with the other, you have extreme constipation, weight gain, lethargy, and other symptoms. It is so common for people with DS that the health care guidelines suggest testing thyroid levels yearly in all people with Down syndrome beginning at birth.

### GERD

GERD is not getting enough attention. It has been on the rise as a concern for children and adults with Down syndrome. Symptoms include heartburn, sore throat, difficulty in swallowing, regurgitation, and chest pain.

#### Suggestions

* Eat small, frequent meals.
* Wait at least an hour after a meal to exercise.
* Drink before or after meals, not during.
* Talk to your health provider about medication.

### Dentition

This is more of a concern for middle-aged adults with DS than it is for the younger crowd. I don't run into too many people with DS in the 15- to 30-year-old range who do not have their teeth, but I know they still exist. However, texture changes are probably more common for people who have low oral motor tone and never really developed good jaw strength rather than their dentition.

People with DS usually develop fewer dental caries than the general population because their teeth have stronger enamel. The greatest dental issue is gum disease that promotes tooth loss.

#### Suggestions

* Ask a person with DS if there are any texture modifications needed due to dental and/or oral motor concerns.
* Do not promote sweet chew foods such as caramel, soft candy ? foods that will easily stick to teeth. When this is not possible, encourage timely tooth brushing or offer water, carrot sticks, or other crunchy foods to help clean the sticky foods from the teeth.
* Incorporate soft foods such as bananas, puddings, applesauce, cottage cheese, yogurt, mashed potatoes, and oatmeal in the diet.

### Vitamin and Mineral Supplements

People with Down syndrome generally do not require vitamin supplementation. There are some situations that may put them at risk for nutrient deficiencies, such as congenital heart defects, thyroid disease, and celiac disease. Research suggests people with Down syndrome may also benefit from extra zinc and selenium. Also, because people with Down syndrome need fewer calories to maintain their weight than people without DS, a general over-the-counter multivitamin may help to compensate for less than perfect eating habits. While it is possible to meet nutrition needs through food alone, the lower calorie need leaves little room for missteps from a healthy eating plan for optimal nutrition. If you are concerned, ask your physician or a registered dietitian for assistance.

#### Suggestions

You may want to consider an over-the-counter multi-vitamin supplement if a person is:

* A picky eater,
* Skips entire food groups,
* Has extensive food allergies,
* Has problems with food texture, which limits food selection,
* Follows a reduced calorie diet, or
* Is always tired and lacks energy, but does not have any other medical concerns