Let's Talk About...

Spina bifida and nutrition for children

It is important that growing children are active and have good nutrition. However, both of these habits can be a challenge for a child with spina bifida. Poor eating habits and reduced activity can cause the following problems:

- Weight gain
- Constipation
- Osteoporosis
- Anemia
- Urinary tract infections
- Drug and nutrient interactions
- Pressure sores
- Problems chewing or swallowing

If your child has any of these symptoms, or to prevent them from happening, use the following guidelines. The dietitian in the Spina Bifida Clinic also can help you with specific nutritional concerns.

How can my child avoid gaining too much weight?

To avoid excessive weight gain, begin making these choices when your child starts eating solid food. Introduce your child to a variety of fruits and vegetables right from the start. This will help her enjoy these foods when she is older. Avoid fast foods and high fat and high sugar snacks. Young children should not lose weight. Use the following tips to create good eating habits in your family:

Plan your family's mealtimes

- Serve meals at set times during the day. If you do not schedule mealtimes, children snack all-day on high-calorie foods.
- Plan snack times. Offer fruits and raw vegetables by themselves or with low-fat yogurt or fat-free salad dressing as dips. Give your child plain popcorn, low-fat popcorn, rice cakes, or corn cakes, instead of cookies or potato chips. Use frozen yogurt, juice bars, angel food cake, or fruit instead of rich desserts.
- Eat meals as a family often. Children learn to eat more varied foods by eating with the whole family. Set a good example; have the whole family eat healthy foods.

Make good beverage choices

Constipation and urinary tract infections (UTIs) are common in children with spina bifida. Encourage your child to drink a lot of liquid. Watch sugary drinks, though, as these add calories and can cause weight gain.

- Offer 1% or skim milk after age two, unless your child has trouble gaining weight. Milk is the best source of calcium for your child, so encourage her to drink two to three eight-ounce glasses of milk daily.
- Limit fruit juice to two ounces a day for infants under two and four ounces a day for older children. Fruit juice contains as much sugar as soda. Dilute juice to make it go further.
- Encourage your child to drink water.
- Discourage your child from drinking soda. If she does drink soda, encourage diet soda without caffeine.

Limit fat in foods

- Trim all visible fat from meats.
- Remove skin from chicken and turkey.
- Use low-fat cooking methods: bake, broil, grill, steam or poach food instead of frying food.
- Use nonstick vegetable sprays instead of butter, shortening, or oil.

- Serve foods plain without sauces or gravies. Use low-fat toppings such as cottage cheese, low-fat yogurt, or low-fat sour cream.
- Choose low-fat dairy products such as skim milk, 1% milk, and low-fat cheeses.
- Fill up on fresh fruits and vegetables that are naturally fat-free.

How do I encourage my child to exercise?

Exercise and diet are very important to prevent weight gain. Here are some tips to help your child be more active:

Limit inactive time

Limit time spent with television, video games, Gameboys®, and videos. Pediatricians recommend that children should not watch television or videos if they are younger than two years old. Older children should watch no more than one to two hours of television daily.

Increase physical activity

Set up an exercise program for your child as early as possible. Work with your physical therapist. Plan family outings that involve fun physical activities.

Make physical activity family centered

Do not single out your child for special treatment. Include the whole family in an exercise program.

How can I prevent constipation in my child?

Constipation is a common problem for children with spina bifida. Plenty of fiber and fluid in the diet can help this condition. Fiber is the portion of the plant that our bodies cannot digest. The fiber prevents constipation by absorbing water, which softens and enlarges the stool, which makes it easier to pass. To find out the right amounts of fiber and fluid for your child, speak to the dietitian in the Spina Bifida Clinic.

To increase the fiber in your child's diet, offer fruits and vegetables plus whole grains at each meal. Serve milk with meals and encourage your child to drink plenty of water throughout the day.

Below are some more tips for adding fiber:

1. **Increase fiber gradually**
   If you add fiber to your child's diet too quickly, it can cause gas, cramping, diarrhea, and discomfort. If you add fiber gradually, this gives the bowel time to adjust, reducing unpleasant side effects.

2. **Get fiber from various sources**
   Eat different fruits, vegetables, and grains to ensure your child receives a variety of nutrients. Try beans such as pinto, garbanzo, lentils, and refried beans.

3. **Drink lots of water**
   Fiber absorbs large amounts of water in the intestine. A high fiber diet can cause constipation if your child doesn't drink plenty of liquids. A dietitian can decide the amount of liquid that is enough for your child.

4. **Try to include some fiber in every meal.**
   Any meal or snack is a good opportunity to add high-fiber foods to your child's diet.

5. **Substitute high-fiber foods for low-fiber foods wherever possible:**
   - Eat whole grain breads, cereals, and pastas. This includes products made from grains such as whole-wheat flour, oats, rye, corn, rice, buckwheat, or bran.
   - Leave the peels on fruits and vegetables if possible.
   - Choose a breakfast cereal with more than three grams of dietary fiber per serving.

6. **Use wheat bran as a natural laxative**
   Wheat bran is a concentrated source of fiber that you can gradually add to your child's diet. It works best when added to moist foods such as mashed potatoes, ground meat, cooked cereals, casseroles, soups, and yogurt. You can substitute wheat bran for some of the flour in recipes.

Your whole family can benefit from eating more fiber. Use the table on the next page to choose high-fiber foods to help plan meals and snacks.

High Fiber Food List		
Vegetables	Broccoli	Carrots
	Cauliflower	Artichoke
	Peas	Celery
	Brussels sprouts	Corn
	Potato (with skin)	
Grains	Whole wheat bread	Rye bread
	Whole grain cereals	Whole wheat pasta
	Oatmeal	Brown rice
	Cereals with more than 3 grams of fiber per serving	
Fruit	Peas	Apples
	Peaches	Blueberries
	Strawberries	Oranges
	Figs	Bananas
	Apricots	Kiwi
Legumes (Beans)	Lentils	Black beans
	Baked beans	Lima beans
	Nuts	Almonds
	Pistachio nuts	Peanuts
	Crunchy peanut butter	

A few specific foods may cause constipation. Such foods include high-pectin fruits (apples and bananas); breads with less than two grams of fiber per slice, cereals with less than three grams of fiber per serving, and other products made from white flour; and dairy products. If constipation is a problem for your child, talk to the dietitian in the Spina Bifida Clinic before taking these foods out of your child's diet.

Some of your child's medicines may also cause constipation.

How can I prevent osteoporosis in my child?

To have healthy bones, your child needs calcium, vitamin D, and weight-bearing physical activity (such as running or walking).

Dairy products are the best sources for calcium and vitamin D, but they may cause constipation. Don't limit dairy products, as children need them every day. Some medicines interfere with calcium and vitamin D in the body (see the "What are Some Common Drug and Nutrient Interactions?" section).

To get enough calcium, a child over two years old and at normal weight should have two to three servings from the dairy group each day. This may include low-fat milk, yogurt, cheese, or ice-cream. If your child doesn't eat enough dairy foods, you can give her a complete multivitamin and mineral supplement. Your child may need an extra calcium supplement if her calcium intake is low. Speak to the dietitian in the Spina Bifida Clinic to find out whether your child needs a supplement.

To make enough Vitamin D, your child should spend twenty minutes a day in the sun without sunscreen. To avoid burning, have your child go outside either early in the day or later in the afternoon. In northern areas, the winter sun is so low in the sky that even if we spend time in the sun our bodies don't make enough vitamin D. In winter months, consider giving your child a supplement to provide 400-1000 IU of vitamin D each day.

Your child may become anemic if she doesn't get enough iron in her diet. This may be from not eating enough iron-rich foods or troubles with chewing and swallowing foods like meats and nuts. To ensure your child gets enough iron, have her eat iron-rich foods. Also, make sure she avoids caffeinated drinks (for example, tea, coffee, colas, energy drinks, Mountain Dew, or Dr Pepper). If anemia continues to be a problem, speak with the dietitian in the Spina Bifida Clinic. Sometimes, an iron supplement and an iron-rich diet are needed.

How can I prevent urinary tract infections in my child?

Urinary tract infections are common in children with spina bifida. If your child follows her bladder management program and drinks enough water, she should be able to avoid getting a urinary tract infection. Some doctors recommend drinking juices or taking a vitamin C supplement to prevent urinary tract infections. Drinking juices means extra

calories, which can lead to weight gain. So we do not recommend drinking a lot of juice. Before starting a vitamin C supplement, consult your doctor.

What are some common drug and nutrient interactions?

Many medicines prescribed to children with spina bifida have nutrition-related side effects. Several seizure medications cause nausea and vomiting. Weight gain and increased appetite are common with many behavioral medications. However, not every child prescribed these medications has side effects.

If your child is on long-term antiseizure therapy, she may need supplements of vitamin D, folic acid, calcium, and vitamin K. If she is on long-term antibiotic therapy, she may need calcium, iron, magnesium, zinc, folic acid, and vitamin K supplements. Please check with your doctor, before giving your child supplements or minerals in amounts greater than the Recommended Dietary Allowance.

How can I help my child avoid pressure sores?

Children with spina bifida may not feel pain or injury in their legs and feet. They may not notice when areas of their body are developing sores. Check your child's feet and legs regularly for redness, sores, or blisters.

To avoid pressure sores, help your child stay at an ideal weight (neither too heavy nor too skinny). Also, good skin care and good nutrition are essential. If your child is poorly nourished, sores will heal slowly. For other tips, see "***Let's Talk About… Pressure Sores.***"

How do I ensure my child gets enough to eat?

Some children with spina bifida have problems with sucking, chewing, and swallowing. This can lead to poor growth and many health problems. A speech language therapist can help your child with swallowing issues. For sucking and chewing issues, consult the occupational therapist, physical therapist, dietician, nurse, psychologist, or social worker in the Spina Bifida Clinic.

If your child is having problems eating, the Spina Bifida Clinic dietitian can give you tips to increase your child's calorie intake.

Conclusion

You may find your child's nutritional needs challenging. However, your child can receive the best care if you work with your health care professionals. The registered dietitian at the Spina Bifida Clinic is an especially good resource.

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