



## Obesity



Obesity is one of the most common nutritional problems in people with Spina Bifida. Obesity may be a cosmetic concern for affected individuals. More importantly, however, obesity is a major health threat. In adults, obesity has been linked to high blood pressure, diabetes, osteoarthritis, abnormal cholesterol metabolism, heart disease, sleep apnea, and psychological problems. Similar health consequences occur for children and adolescents who are obese. Psychological problems are of special concern for developing children, who may be negatively stigmatized by others if they are obese and thus develop poor self-esteem, greater risk for isolation from peers, and depression.

### How Obesity Develops

All energy intake (measured in Kilocalories (Calories)) comes from food that is eaten and then used by the body to meet its needs. Obesity results when a person's intake of calories exceeds his or her energy needs for bodily functions (metabolism, physical activity, the thermal effect of food, and growth). Similarly, weight loss results when the body uses more calories than are taken in through eating. On average, most (about 60%) of our energy is used for basic metabolism (which is controlled in part by inheritance); physical activity uses about 25%, the thermal effect of food about 10%, and growth about 5%. Our bodies do a good job of balancing short-term excesses in both energy intake and use. Continued excessive intake, however, will lead to storage of energy in the form of fat (weight gain), and continued insufficient intake will force the body to use stored energy (fat and other tissue like muscle) for the calories it needs to function (weight loss).

### Special Concerns for Individuals who have Spina Bifida

Obesity is an even greater health problem for people who have Spina Bifida. Obesity further limits mobility and self-help skills, leading to a spiraling problem of decreased energy use and weight gain, making it harder for the individual to keep up with peers in social and work situations. It adds to the amount of pressure on skin, thus increasing the already high risk of skin breakdown, particularly in areas that are insensate or become wet. Social rejection, which may already be a problem due to others' lack of sensitivity and understanding of disability, may be worsened. And activities of daily living, particularly independence in dressing, continence management and hygiene, may be negatively affected by difficulties in moving a large, heavy body and decreased ability to reach private areas of the body.

Very young children who have Spina Bifida usually grow at about the same rate as their non-disabled peers and are quite physically active, so they usually do not become obese. As they grow older, however, children who have Spina Bifida, especially those who also

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have hydrocephalus, are at very high risk for developing obesity. Beyond age six at least 50% of children who have Spina Bifida are overweight, and in adolescence and adulthood over 50% are obese.

There are many reasons for this. Neurological impairments that lead to even slight mobility problems make it harder for individuals who have Spina Bifida to be physically active. Due to the requirements of school and work for sedentary activity, and due to the increasing difficulty of moving a larger body that has a mobility impairment, school age children who have Spina Bifida typically become less active as they grow older. Small children grow rapidly and so they require a large number of calories for growth. Older children and adults have slower growth, however, and on average those who have Spina Bifida will not become as tall as their non-disabled peers. So, those with Spina Bifida have fewer requirements for growth, as well. Also, studies have shown that people with Spina Bifida have less lean body mass than their peers, and even when other factors like physical activity are equal, have a lower basic metabolic rate (fat cells have slower metabolic rates than other cells like muscle cells). In some families, food is used to try to compensate for the child's disabilities. ("At least he or she can enjoy eating.")

### Preventing Obesity – a Family Affair

Prevention of obesity is the only sure method of promoting optimum nutritional health. Preventing obesity for individuals who have Spina Bifida is a family affair that must begin early in a child's life and continue indefinitely. Fortunately, if healthy eating and exercise habits are begun early, they can become part of a very enjoyable lifestyle, rather than one that is perceived as a life of deprivation.

Most eating behaviours and food likes and dislikes are learned in the context of home and family. Thus, by modeling and teaching healthful eating habits, family members have a chance to improve the child's health. This may be difficult, especially for families where eating patterns and genetic factors have led to obesity being commonplace. When a child has Spina Bifida and family members are somewhat frustrated by their inability to correct their child's underlying disabilities; making this contribution to health and well-being can be very rewarding.

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### Strategies for Success

The most helpful strategy for preventing obesity is to help the child view food as a necessity for growth and activity rather than as a reward for managing the difficulties of daily living. The goal is to condition the child to perceive food not as an emotional, but rather a physical, necessity.

Children can learn about good nutrition as they help plan family meals and shop for ingredients. Remember, children cannot consume food that is not available!! Caregivers need to purchase nutritionally sound, healthy foods using the "Food Pyramid" [see "dietary advice" information sheet) as a guide. Most food servings should come from fruits, vegetables, bread and cereals, fewer from dairy products and meats, and only a small amount from foods high in fats, processed sugars and other carbohydrates. Remember that fat has 9 Calories per gram while carbohydrates and protein have only 4 Calories per gram. Therefore, decreasing fats can have the greatest impact on weight loss.

Food should be eaten at regular times during meals that are pleasant and that take enough time for individuals to eat slowly and realize when their hunger has been satisfied. Treats and snacks should be limited to times when a little extra energy is really needed and should be both nutritionally sound and enjoyable. Food and visual reminders of food should be removed from the environment and other cues for increasing enjoyment of life, such as posters about exercise or hobbies, should be substituted. Entertainment should rarely centre on food or meals. Children should receive only non-food rewards for positive behaviours. Children need to learn to distinguish between boredom and hunger, and also to enjoy foods other than those with high fat or high sugar content. Studies reveal that if such foods are strictly limited from our diets, we lose our taste for them and crave them less and less.

The second important strategy is to help children who have Spina Bifida enjoy exercise. Physical activity has two benefits; it burns calories and can decrease hunger by resetting the body's "thermostat." Most physical activities that other children enjoy can be adapted for children who have mobility impairments. Horseback riding, tennis, swimming, and wheelchair sports like basketball and track are life-long activities that most children love and families can enjoy together. Community organisations such should be encouraged to create such opportunities for individuals who have physical disabilities. Small children can be even more active as they learn to complete some helpful tasks around the house. Such activities not only burn calories, but also help children feel good about themselves as capable people who can help others. Watching television or sitting in front of a computer are activities that demand few calories, and should be limited.

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### Weight Reduction

Once people become obese, losing weight is hard to do. Most can only lose about 10% to 15% of their body weight, and even these individuals usually regain this weight after their strict program of diet, exercise and behaviour modifications is withdrawn.

Once people with Spina Bifida have become obese, it is even harder for them to lose weight than it is for others. It is not impossible, however! If an individual is motivated to lose weight and limits caloric intake while also increasing exercise, weight can be reduced. The assistance of a nutrition consultant may help in such cases, since a very low calorie diet - 1,000 calories per day or even less--may be needed. It can be difficult to create an interesting, enjoyable and nutritionally sound diet using so few calories. Weight reduction strategies should be started one by one, so the individual and family can become used to new patterns of living. Trying to do too much at once is often overwhelming and self-defeating. Most importantly, the individual should recognize that any weight reduction contributes to good health, and that losing weight should be done in small measures and will take a long time. Small weight losses should be celebrated, (but not with food!) because they really are important!

In summary, individuals who have Spina Bifida are very likely to become obese unless they, with the help of their families and friends, prevent gaining too much weight during their childhood and adolescence. Obesity has many negative consequences, so it needs to be prevented or managed to achieve optimum health and quality of life. The benefits of *healthy eating* and *sufficient exercise* for individuals who have Spina Bifida are numerous and important, and last throughout life. Perhaps no other single intervention will make such a positive contribution to long-term good health and quality of life.