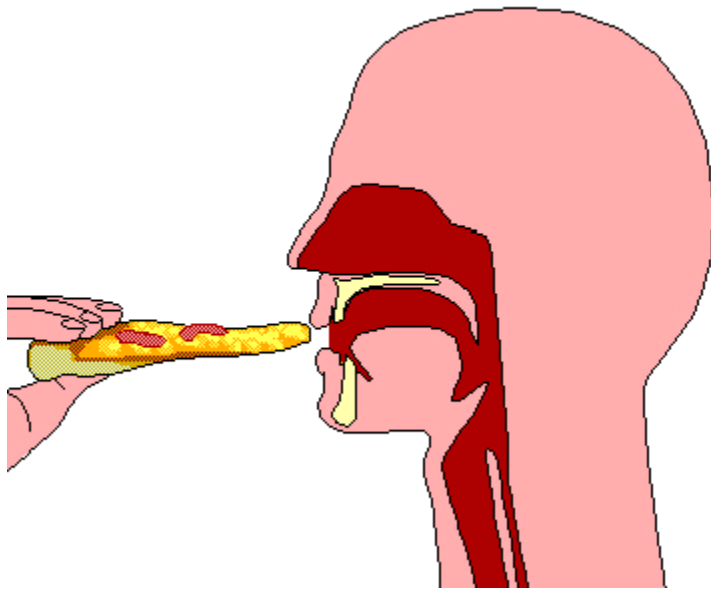


### What is a swallowing disorder?

A swallowing disorder (also called dysphagia) is difficulty or discomfort in swallowing. As a result, it can be difficult to eat and drink. When eating, food is



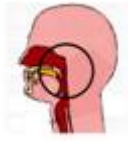
placed in the mouth and is then chewed with the teeth to form a compact ball or bolus. Once the bolus of food is formed, the tongue moves the bolus to the back of the mouth. At this point, the swallow is automatically triggered by the brain. The muscles of the back of the tongue and the throat (also called pharynx) squeeze to move the bolus of food through the pharynx and down a tube called the

“esophagus”. At the end of the tube, the bolus reaches the stomach. Drinking liquids is very similar to eating foods. The main difference is that when drinking liquids, a bolus of liquid is formed without the need to chew. During both drinking and eating, an important step in swallowing is the automatic closure of the airway or windpipe when the bolus passes through the throat. This closure of the airway prevents food or liquid from going into your lungs. Swallowing difficulties can occur at any point along the swallow, from when the food or drink enters the mouth, to when the bolus passes through the esophagus and into the stomach. The following are examples of common swallowing difficulties along different points of the swallow:



- **In the mouth:**
- If the lips are not able to close firmly, the food or liquid may drool from the mouth.
- If the tongue is unable to move around the mouth, there may be

food left in the mouth after the swallow.

**DYSPHAGIA****•In the throat:**

•If the airway to your lungs is not closed off tightly, food or liquid may accidentally spill into the lungs. This is referred to as “aspiration”. Extended amounts of aspiration can cause a lung infection, such as pneumonia.

- If the muscles of the throat are unable to squeeze the bolus (food or liquid) down into the esophagus, there may be food or liquid left over in the throat after the swallow.

**•In the esophagus:**

•If the muscles at the top of the esophagus are weak, food may come back up from the esophagus to the throat. This will cause food to remain in the throat after the swallow.

- If the muscles at the bottom of the esophagus are weak, food may come back up from the stomach. This may create pain in the chest and/or a bad acidic taste in the mouth.

**How frequent are swallowing disorders?**

Swallowing disorders following a stroke are common. Approximately 55% of people who have a stroke have swallowing difficulties during the first days and weeks. Many people regain their swallowing ability within the first month after the stroke. However, around three months after a stroke, as many as 35% of people still have some swallowing difficulties.

**What causes swallowing disorders after a stroke?**

Swallowing difficulties are caused by damage to the brain. The specific swallowing difficulties vary according to the specific area of the brain affected.

- If the area of the brain that controls muscle movements is affected, then it may be difficult to trigger the muscles of the lips, cheek, tongue, throat, or esophagus to move the bolus. If the area of the brain that controls sensation is affected, then it may be difficult to taste flavors, feel different textures, or identify the temperature of foods or drinks.
- Certain medications that treat important illnesses may also cause swallowing difficulties. For example, some medications may decrease saliva production

thereby creating a dry mouth. If the mouth is dry, it is very difficult to form a bolus of food.

- The lack of teeth may also cause swallowing difficulties. For example, loose dentures make it difficult to chew foods.
- Inability to move the hand or fingers after a stroke may cause difficulties in directing food or liquid to the mouth for swallowing.

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### Can swallowing disorders caused by a stroke be treated?

Yes. In most cases, swallowing disorders can be treated or at least managed. There are a variety of helpful strategies and procedures depending on the cause of the problem. These include behavioural interventions (described below), use of special devices such as spill-proof cups or spoons, medications, and surgery. The information provided here is specific to rehabilitation – and does not include a discussion of surgery or medication. Medication and surgery may be used to treat some swallowing difficulties, and you should discuss this with your physician. There are three main reasons why it is important to treat swallowing difficulties after a stroke:

- to make sure that your nutritional and hydration (liquid intake) requirements are being met;
- to prevent aspiration-related complications, such as pneumonia;
- to maximize the enjoyment that comes from eating and drinking.

If swallowing difficulties are related to your inability to cut and manage your food because you have difficulty using one hand, specific functional interventions will be needed. For example, you may benefit from specialized utensils to help place foods or liquids in your mouth. Alternatively, assistance with feeding may be necessary by a family member, therapist, or nurse. It is important to know that swallowing problems can be treated or controlled no matter the cause. Don't be afraid. Talk to your doctor or nurse OR have someone talk to him or her for you. They will be able to help you find the best treatment for your specific problem.

### What are behavioural interventions?

Behavioural interventions for swallowing disorders after a stroke include: **Safe eating strategies:** Self-feeding is strongly encouraged whenever possible. Whether

you are an independent eater or you require assistance, there are a number of helpful strategies that can be used to increase swallowing safety:

- if you require eye-glasses, hearing aids, and/or dentures, ensure that you are wearing these at mealtime;
- eat and drink only when you are fully alert;
- sit in an upright position, with your torso at a 90° angle to the ground (pillows can be used to support you);
- eat slowly and allow adequate time for swallowing between bites or sips;
- take small mouthfuls (teaspoon size);
- never combine liquids and solids in the same bite;
- place food on the strong side (the side less effected by the stroke) of the mouth;
- take 2 or more swallows per bite to ensure food is cleared from the mouth and throat;
- try not to talk while chewing or swallowing – save conversation for between bites;
- stay sitting upright for at least 30 minutes after the meal to help food move down into the stomach;
- if you are having swallowing difficulties, it is a good idea to eat while family and other care-givers (nurses, friends who are visiting) are nearby to supervise you and help you eat safely.

**Optimum eating environment:** An ideal environment for eating is one that is calm with minimal noise and distractions, and has good lighting. **Changes in head posture:** There are a number of helpful swallowing postures for your head that may be recommended to you. For example, if one side of your throat is weaker than the other, it may help to turn your head towards the weaker side when swallowing, as this directs the food down your stronger side. **Changes in the texture or thickness of food and drink:** The following are some of the diet textures that may be recommended to you:

- pureed food (e.g., applesauce, yogurt, and mashed potatoes);
- minced or ground food (e.g., meatloaf, shepherd’s pie, and cottage cheese);
- soft or easy to chew food;
- soup and drinks that have been thickened to a nectar-like, honey-like, or pudding-like consistency.

These texture recommendations are usually made following a swallowing assessment performed by a health professional with expertise in swallowing disorders. These recommendations will be discussed with you and your family.

**Avoidance of certain foods:**

- “Dry particulates” or foods that are dry and come in small pieces (e.g., corn, peas, dry rice, noodles, dry cookies, nuts, raisins, hard candies, etc.), as these are difficult to chew;
- Bread products and peanut butter, as these can stick in your throat;
- Spicy and acidic foods (e.g., fried food, coffee, tea, cola, and chocolate), as they promote acid reflux.

**Oral muscle exercises:** Exercises to strengthen the lips, tongue, and jaw may help to increase your ability to chew and control the movement of food in your mouth. Your therapist should show you these exercises and practice them with you.

**Swallow maneuvers:** There are a number of special maneuvers that can help to improve your swallow. Some maneuvers may not be safe for stroke survivors as they temporarily increase your blood pressure. Ask your speech-language pathologist or other members of your healthcare team if there are any swallow maneuvers appropriate for you. **Proper oral hygiene:** Ensure that after every meal your mouth is cleaned of all food that may have gotten stuck in your teeth or dentures. Also, your mouth should be kept moist at all times.

**Are behavioural interventions effective for swallowing disorders?**

Experts have researched the effectiveness of behavioural interventions for swallowing disorders. Some of these studies have shown promising outcomes. Here is a brief overview of what we know:

- **Changes in posture:** One study looked at patients who aspirated when eating in the upright position. Significant improvement was achieved in some patients by adjusting the position of their head and neck when swallowing. So, as mentioned earlier it may help to turn your head towards the weaker side when swallowing, as this directs the food down your stronger side.
- **Changes in the texture or thickness of fluids:** Studies have shown that thickening fluids to a honey or milkshake texture may successfully reduce the risk of aspiration, and so, the risk of pneumonia. However, studies have also

shown that people placed on a modified texture diet (where your drinks are thickened) have a higher risk of dehydration from not taking in enough regular liquids. Therefore, it is critical that a proper swallowing assessment be conducted to determine the need for this treatment.

- **Combined Behavioural Strategies:** Studies have looked at treatment involving a combination of the strategies we have discussed, including oral muscle exercises, changes in posture, and modified texture diets. The results suggest that this combination is helpful for better and safer swallowing and nutrition.

*Information on this web site is provided for informational purposes only and is not a substitute for professional medical advice. If you have or suspect you have a medical problem, promptly contact your professional healthcare provider.*