



Nursing and feeding techniques and equipment

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INDEED: “Innovative tools for diets oriented to education and health improvement in dysphagia condition” - Project N: 2020-1-ES01-KA204-083288



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Goals of the lesson

The aims of this lesson is understand the importance actions during mealtime for dysphagia people, to learn about nursing and feeding techniques and equipment



Source: designed by Canva Pro

Learning outcomes

To discuss the main characteristics of a safe mealtime environment.

To understand the importance of actions during mealtime for people with dysphagia.

To apply the right actions of the caregiver before, during and after feeding, to discuss alternative feeding methods.

To learn about the medicine-taking of patients who cannot swallow the medications.

To emphasize the importance of good oral hygiene to the overall health of dysphagia patients and infection control.



Source: designed by Canva Pro

Ice breaker

I like Pizza:

- With pineapple
- Without pineapple



Source: <https://pixabay.com>

Mealtime environment (characteristics of the place and process)



Characteristics of the place and process

It is important to create a safe mealtime environment. An uninviting environment can put people off their meals and result in inadequate nutrition and hydration, while a distracting environment can reduce focus on following the strategies for safe swallowing and lead to safety concerns.

The following tips may help you to ensure the mealtime environment is optimized for the person you care for to enjoy a safe and nutritious meal:

■ Reduce potential distractions:

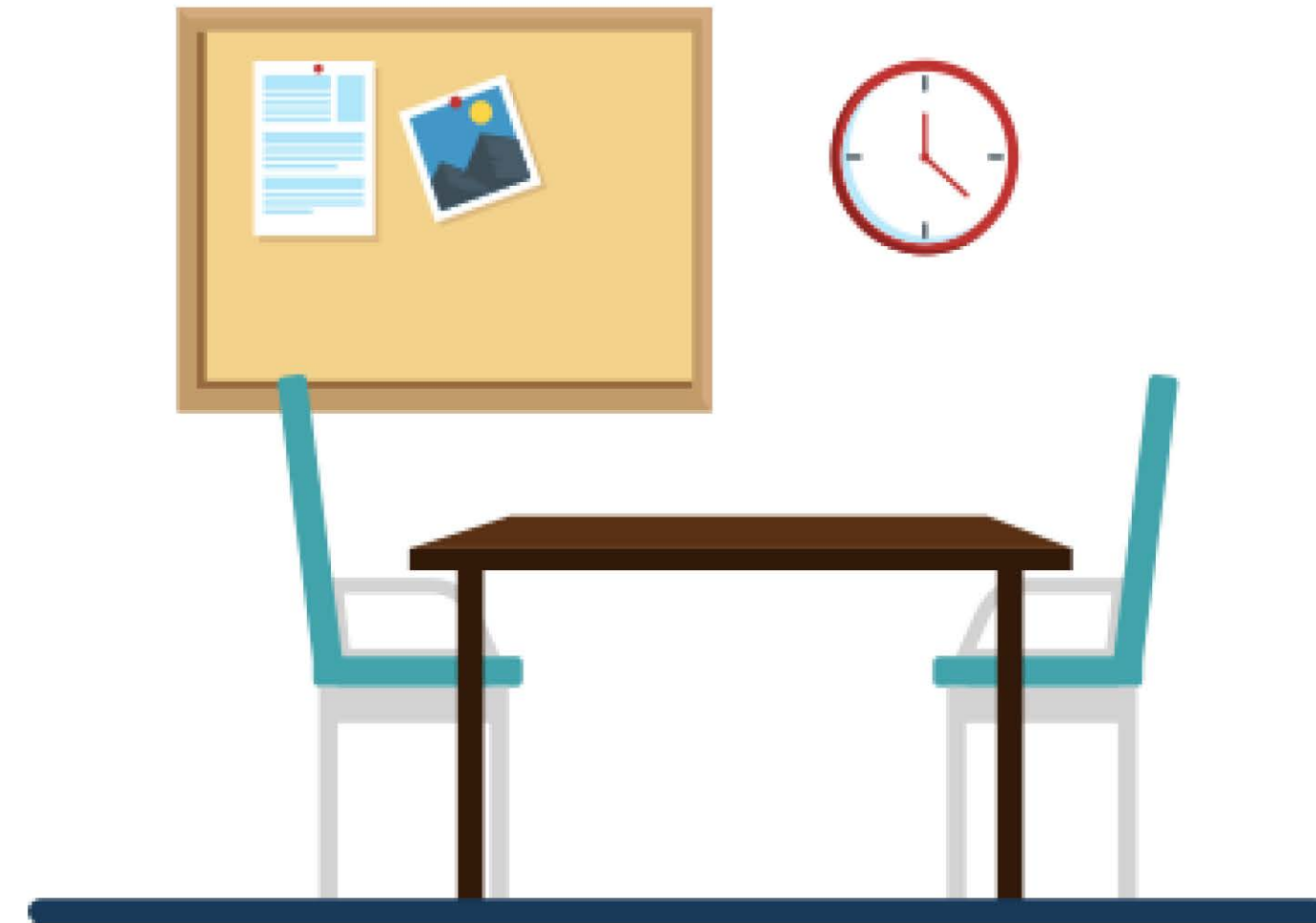
- Bright, pleasant, quiet place and without noise or distractions.
- Minimize the number of people walking around the meal area.
- Turn off or turn down the volume on the TV, radio, mobile or tablet.
- Avoid loud noises such as microwave or oven timers going off.
- Brake or control of compulsive behaviors during mealtime.

Mealtime environment

Characteristics of the place and process

■ Create an inviting atmosphere:

- Decorating the meal area with tablecloths.
- Placemats.
- Plants.
- Pictures and curtains can create a warm atmosphere that can help facilitate enjoyment at mealtimes.
- Room and adapted furniture (chair, table, cabinets, ramps, others).
- Adapted kitchenware (cutlery, glasses, plates, tablecloths, etc.) and placed on the table in an accessible and comfortable way for the diner.



Source: designed by Canva Pro

Mealtime environment

Characteristics of the place and process

■ Meal time and food presentation:

- The smell and appealing appearance of food can help to increase appetite as we taste not only with our tongues but our eyes and our noses as well.
- Not filling the cutlery with food except in medical cases prescribed
- Do not use feeding syringes or straws during oral feeding.
- Establishment of a fixed schedule for all daily meals.
- Maximum duration of the shots between 40-45 minutes.
- After feeding, maintain a comfortable posture above 45° for 30-40 minutes to avoid gastric reflux.



(Source: <https://www.freepik.com>)

Body position

Position of a person without problems to eat.

- Back in contact with the back of the chair in a 90° position.
- Head and neck aligned with the back.
- Chin slightly inclined towards the chest.
- Feet flat on the ground or footrest.
- Forearms on the table on either side of the cutlery.

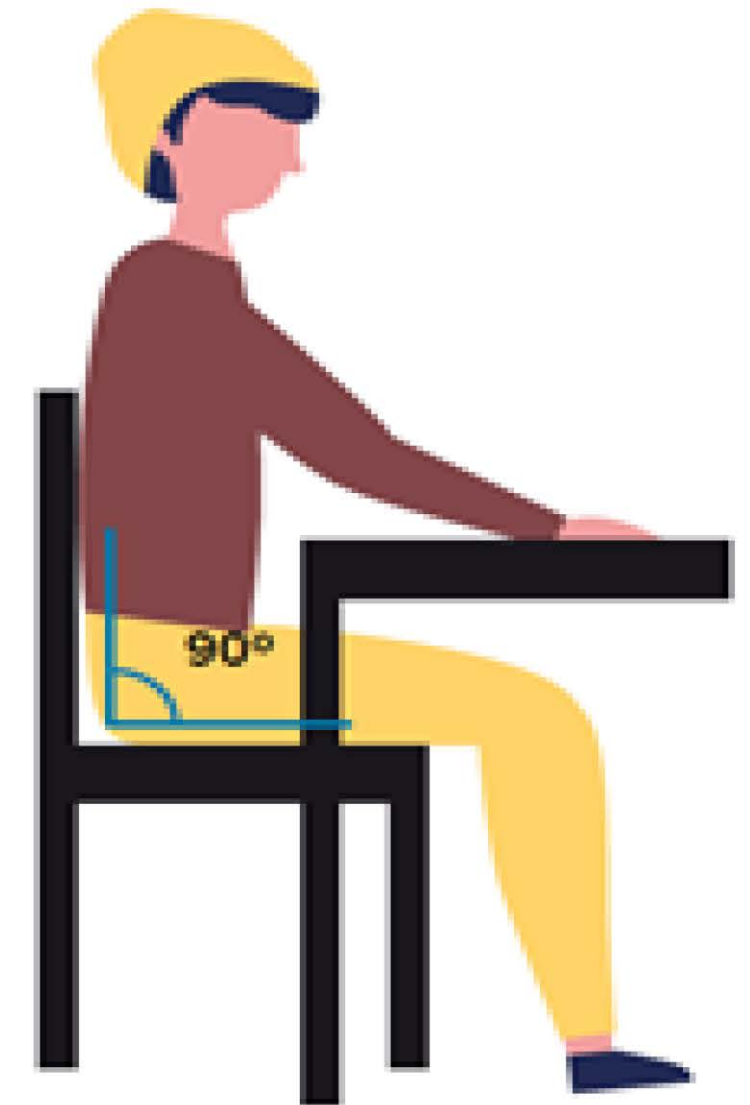


Figure 2. Position of a person without problems to eat
(Source: CADIS Huesca)

Body position

Position of a person with mobility problems

- Always adopt a semi-upright position above 45° and as close to 90° as possible.
- Head slightly tilted forward, avoiding neck hyperextension.
- Chin slightly inclined towards the chest.
- Trunk and feet aligned with head and neck as far as possible.
- The position of the legs will depend on the situation of the person, alternating bent knees with straight knees and feet apart.
- The arms can be supported on the belly or on the armrests of the chair.
- Cushions, pillows or other tools will be used whenever necessary to maintain proper posture.
- Correction of posture will be made whenever necessary throughout the meal.



Position of a person with mobility problem

(Source: CADIS Huesca)

Correct actions of the caregiver before, during and after feeding



- Before feeding, it is important to know the needs of the person and to prepare a good environment for mealtime (adapted equipment, volume, thickeners, type of texture, food temperature...).
- Maintain personal hygiene by washing hands with soap and water before and after meals.
- Feed meals when the person is alert and attentive; check it before starting the meal and until the end of the process. If he feels drowsy or inattentive, techniques will be done to stimulate his attention (touches on the cheeks or questions to assess his/her attention). If you do not manage to reach a state of adequate attention, reserve the dose for another time.
- Proper positioning of the person is essential during meals. Assist him/her to sit in an upright position before feeding. If necessary, put pillows or other prop behind his back for comfort and support.

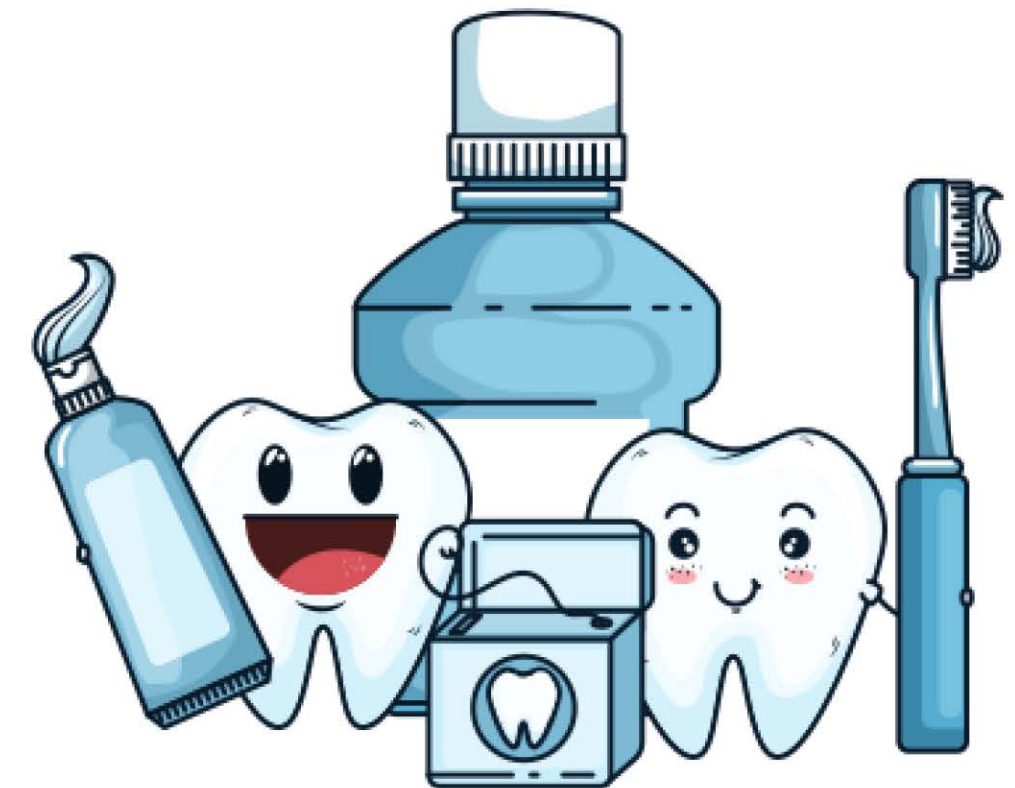
- Describe what food is on the plate before mealtime
- Keep calm and confident attitude during mealtime
- Encourage the autonomy of each patient whenever possible.
- Provide mealtime assistance when necessary
- Autonomous people: supervision throughout the feeding process and support at specific times.
- Dependents: supervision and support throughout the meal.
- To help feed, the caregiver must position himself at the same level as the patient, normally seated nearby to one side or in front of him/her to avoid hyperextension of the neck. Avoid positions standing, behind or away.
- The caregiver should give the food with his dominant arm and from the bottom up, so that the person does not raise the head.



Source: designed by Canva Pro

- Check the volume of the food and drink provided. Food should be lifted to the mouth in small quantities.
- Clear and easy-to-understand indications about the feeding process may also be needed. This may mean giving very specific directions such as “open your mouth”, “chew”, “swallow”
- If there is no response to open the mouth, visual cues can help to initiate the process of eating. This might include the caregiver opening his/her mouth or making a slight pressure on the lower lip to stimulate the opening of the mouth
- If the person keeps the food in the mouth for a long time, gently rub the spoon on the lower lip to encourage mouth opening.
- While person is focused on eating, there should be no distractions. Discourage conversation when there is food in the mouth.
- Make sure all the food and liquid is swallowed before feeding the next bite.

- Before offering sips of fluid check the mouth to make sure there is no food remaining, especially in the cavities of the cheek or on the tongue.
- Never hit the teeth with utensils whilst eating.
- If the bite reflex occurs while the utensil is in the mouth, wait until it stops and do not force or pull the utensil to take it out.
- Alternate small bites and sips. Feed the person patiently, with a slow rate of feeding.
- It is vital to know signs of eating problems or risk situations that may occur during feeding and how to deal with it.
- Provide a serviette or a bib during the meal and wipe the person's mouth as needed to keep hygiene and maintain dignity.
- At the end of each meal, ensure proper oral hygiene.



(Source: obtained from Canva Pro)

Alternative feeding methods: artificial nutrition



Enteral feeding

Enteral feeding is a method of supplying nutrients directly into the gastrointestinal tract with tube or ostomy.

A person on enteral feeds usually has a condition or injury that prevents eating a regular diet by mouth, but their GI tract is still able to function. Being fed through a tube allows them to receive nutrition and keep their GI tract working.

Enteral feeding may make up their entire caloric intake or may be used as a supplement.



Source: <https://pixabay.com>

■ **Nasogastric (NG tube)** tube is a small and special tube that goes into the stomach through the nose. Liquid food and medicines are given through the tube directly into the stomach, giving a person extra calories.

■ **Percutaneous Endoscopic Gastrostomy (PEG)** is a procedure in which a flexible feeding tube is placed through the abdominal wall and into the stomach. PEG allows nutrition, fluids and/or medications to be put directly into the stomach, bypassing the mouth and esophagus.

Parenteral nutrition (PN)

Parenteral nutrition (PN) or intravenous feeding, is a method of getting nutrition into your body through your veins.

It includes proteins, carbohydrates, fats, minerals and electrolytes, vitamins and other trace elements for patients who cannot eat or absorb enough food through tube feeding formula or by mouth to maintain good nutrition status.

Achieving the right nutritional intake in a timely manner can help combat complications and be an important part of a patient's recovery.

- Parenteral nutrition is sometimes called Total Parenteral Nutrition (TPN).

It is used for people whose digestive function is compromised or needs rest for therapeutic reasons for more than 5-7 days.



Source: <https://pixabay.com>

Enteral feeding Video

<https://www.youtube.com/watch?v=bKEgSlSzEx0>

Parenteral nutrition Video

<https://www.youtube.com/watch?v=yxDJLkg9aZk>

Feeding equipment and adapted utensils



Source: designed by Canva Pro

The use of support products (instruments, equipment or technical systems that facilitate the daily activity of people with some kind of difficulty or functional limitation) during feeding to prepare, serve, eat or drink, facilitates the development of these activities but also allows the normalization of the feeding process by providing the person with greater autonomy.

This has a positive impact on the establishment of social relationships, increases daily activity and improves their quality of life and therefore their self-esteem.

Cutlery



Good Grips Utensils /Built-Up Handle Utensils.

Enabled to assist those with limited or weakened grasping strength, the coated built-up handles help improve grasping ability and holding patterns.

These non-slip utensils allow maximum control with minimum effort during mealtimes.

Angle cutlery with moldable handle.

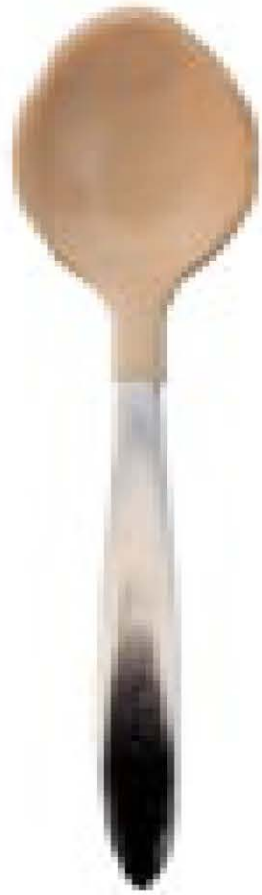
For people with limited movement due to postural and other problems.

The molding of the utensil allows to adapt the desired angle to facilitate the feeding process of the person.



(Source: CADIS Huesca)

Cutlery



Cutlery with soft PVC coating.

Made of aluminum but coated with food-grade PVC to make them softer, reducing the suffering of teeth for people with involuntary bite.

Plastic cutlery.

Made of food-grade plastic, they are lighter and softer, thus reducing dental suffering in the event of bite alterations. They are light tools, can have different designs and are economically accessible.



(Source: CADIS Huesca)

Cutlery



Cutlery with handle and strap.

The handle has an easily adjustable strap made of cloth, plastic or other material to provide a secure grip on the utensil being used.

Special cutlery.

Utensils with different shapes, designed to meet the needs of a specific population: rocking type knife, Nelson type fork or fork-spoon, ect.



Cups



Nose Cut-Out Beaker “Nosey cup”.

This design, with its generous cut out on one side, enables drinking without tilting the head. Nose Cut Out Cup offers an easier way of drinking for anyone who struggles to tip their head back or extend their neck.

Two Handled Mug

Featuring two handles to be held easily increases security when lifting and holding your mug. The Mug also benefits from a wider base for stability and reduces the risk of spillage. The mug has two handles that can be held easily or assist control. Easier to sit down and helps prevent tipping.

Reduces the risk of spillage when you are drinking from it.



(Source: CADIS Huesca)

Cups



Double-handled tumbler with spout.

Similar to the previous tumbler but with a lid to prevent the liquid from spilling completely when tipped over. It has a spout with a hole usually of about 4 mm through which the liquid flows out.

Transparent cup with nozzle lid or without the lid.

Transparent plastic cup for food use, which lid can be fitted, and may or may not have an anti-spill system when tipped over.



Medela cup.

Small capacity graduated cup made of transparent plastic, with a cutout on the outside. Used for the administration of liquids to infants and babies.



(Source: CADIS Huesca)

Plates



Plates made from durable polycarbonate plastic.

Made of food-grade plastic to be light, easily manageable and impact resistant. A plate rim could be attached to the side of the plate to prevent food from spilling, it also allows the user to pick up food against the rim with one hand.

Manoy sloped plate

Made from plastic, with a high back and low front, this sloped plate lets food slide towards the front, making it much easier to see and scoop up.



Partitioned Plate

Made of plastic. It has features sections so that meals can be divided up. The shape of each section allows for easy scooping and makes food easier to eat.



(Source: CADIS Huesca)

Non-slip mat



(Source: CADIS Huesca)

Non-slip mats are placed under plates, cups, cutting boards, etc. to prevent these items from slipping. Non-slip mats are a very simple piece of equipment that can be adapted and used in a variety of ways.

Other feed adapted utensils

There are hundreds of technical aids available on the market to facilitate any of the processes performed during feeding. Those described above are commonly used in associations or other entities that serve people with disabilities and / or dependence.

Medicine-taking



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- Pharmacological treatment, as with the ingestion of food and beverages, requires proper handling into the mouth and coordination during swallowing.
- Texture adaptation drugs are not recommended because they could be interfering with their activity, producing an overdose or limiting their effect. It is always recommended to look for other presentations of the drug before handling it.
- On many occasions, it is not possible to prepare magistral formulas with other forms due to the instability of the preparation, difficulty in finding the active ingredient, etc, so in these situations, the package insert should be read or the pharmacist should be asked for the best way to adapt it.

The selection of the most appropriate pharmaceutical form will be made according to the type of dysphagia:

■ Dysphagia to liquids:

Choice of medication in tablet or capsule form. They can be administered together with thickened liquids with the appropriate texture.

■ Dysphagia to liquid and solid food:

Semi-solid textures are recommended, and depending on the person's capabilities, they can be administered together with a small part of the food or not.



(Source: <https://www.freepik.com>)

Take precautions when administering and choose the most appropriate one. Modification of its texture should be avoided. In case it is not possible, find out if it is possible to crush it without alteration.

- Semi-solid textures are recommended and depending on the person's capabilities. They can be administered together with a small part of the food or not.
- The medicine has to be included in the first spoonfuls of the food. It is not recommended to mix with all food content because it modifies the taste and may not be completely consumed, diminishing its effect.
- It is not recommended to administer together with citric juices or yogurts because they increase salivation, increasing the risk of aspiration.
- An alternative to medicines that cannot be administered with food is the use of gelatines and thickeners.
- High fluid drugs are recommended to dilute them first in a small amount of water (10-15ml) and then add a thickener.
- Laxatives are recommended to thicken them with a new generation thickener with food gums.
- Rectal route is a valid procedure to administer medication in suppositories or enemas.
- The dosed transdermal patches are also rapidly absorbed and they are not recommended in case of skin problems.

■ **Dysphagia to solid meal: the options are:**

- **Liquid forms:** oral solutions, syrups, drops, sachets for reconstitution and in some situations injectables that can be administered orally.
- **Effervescent tablets:** they should be dissolved in little water (20 ml approx.). It is necessary to wait for the effervescence to completely dissolve as it can be irritating and cause coughing, which is a risk during swallowing.
- **Orodispersible tablets:** called "Flas, Liotabs or dispersible". They dissolve in contact with saliva and do not require the use of external liquids for dissolution.
- **Sublingual tablets:** they should not be swallowed but allowed to dissolve under the tongue.



Source: designed by Canva Pro

Non-crushable medicines

Not all tablets can be crushed without alterations. In general, only uncoated tablets should be crushed, and only uncoated hard gelatin capsules should be opened.

Once crushed or opened, the dosage form should be mixed with a small amount of soft food or gelled water and administered immediately.

The capsules are formulated so that the gelatin capsule facilitates swallowing and masks the unpleasant taste of the drug, including laxative substances.



Source: designed by Canva Pro

■ **Modified release dosage forms:**

They are formulations where the rate and/or site of release of the active ingredient(s) are different from that of the immediate release dosage form administered by the same route. Modified release dosage forms covered by this guideline include orally, intramuscularly, subcutaneously administered modified release and transdermal dosage forms.

1. Prolonged release dosage forms: prolonged release dosage forms are modified release dosage forms showing a sustained release compared to that of an immediate release dosage form administered by the same route.

2. Delayed release dosage form: The release of the active substance from such modified release dosage forms is delayed for a certain period after administration or application of the dosage. The subsequent release is similar to that of an immediate release dosage form.

3. Multiphasic release dosage forms:

- ***Biphasic Release:*** the first phase of drug release is determined by a fast release dose fraction providing a therapeutic drug level shortly after administration. The second extended release phase provides the dose fraction required to maintain an effective therapeutic level for a prolonged period.
- ***Pulsatile Release:*** Pulsatile drug release is intended to deliver a burst of drug release at specific time intervals.

4. Multiple-unit: A multiple unit dosage form contains a plurality of units e.g. pellets or beads each containing release controlling excipients, e.g. in a gelatine capsule or compressed in a tablet.

5. Single-unit: The single-unit dosage forms consist of only one unit, e.g. Osmotic tablet.



Source: designed by Canva Pro

6. Intramuscular/subcutaneous depot formulations: A depot injection is usually a subcutaneous or intramuscular product that releases its active compound continuously over a certain period of time.

Subcutaneous depot formulations include implants.

7. Transdermal drug delivery systems (TDDS): A TDDS or transdermal patch is a flexible pharmaceutical preparation of varying size containing one or more active substance(s) to be applied on the intact skin for systemic availability.

Keep in mind

Mainly drugs are administered during lunch and/or dinner, so it is important to know:

- When it is essential to crush a drug, the final product must be homogeneous. In addition, the use of spoons and mortars should be avoided or cleaned thoroughly after each trituration.
- Medications, as well as food and beverages, can also give rise to aspirations leading to choking, respiratory infections and even cardiorespiratory or other arrests.
- To include the medication in the first spoonful of the food or drink to consume it all and that it does not contribute strange or unpleasant flavors.
- Do not use citrus juices or yogurts with the medication since salivation is increased and the risk of aspiration is accentuated.
- Use gelatins, thickeners or starches for medications that cannot be administered with food.



Source: designed by Canva Pro

Keep in mind

Mainly drugs are administered during lunch and/or dinner, so it is important to know:

- Drugs with a high fluidity should be diluted in a small amount of water (10-15ml) and then a thickener should be added until the appropriate texture is obtained.
- Sedatives can thicken the saliva and may hinder the swallowing process.
- Laxatives can be administered by dissolving in water and with new generation thickeners.
- Rectal and transdermal routes are a valid way of administering drugs by means of suppositories or enemas. Rectal absorption is good as it is a very vascularized area.
- Transdermal patches are also rapidly absorbed. They are not recommended when skin problems exist.

Therefore, people with dysphagia should avoid any drug that is not indispensable and choose the correct form when it is. Moreover, oral solution, rectal or transdermal, should be considered.

Exercise

What type of medication could you give to a person with dysphagia to liquids?



(Source: <https://www.freepik.com>)

Oral care



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■ Why is oral care important?

Oral care is essential for everyone to maintain clean and healthy teeth and mouths. However, people with dysphagia (difficulty with chewing and swallowing) are at a greater risk of poor oral hygiene and health.

This is because **they are at risk of food and drink pooling in the mouth and inhaling food, drink and saliva into the lungs (aspiration) when swallowing.**

Aspiration of the harmful bacteria that develops in unclean mouths can lead to life threatening respiratory difficulties and chest infections known as aspiration pneumonia.



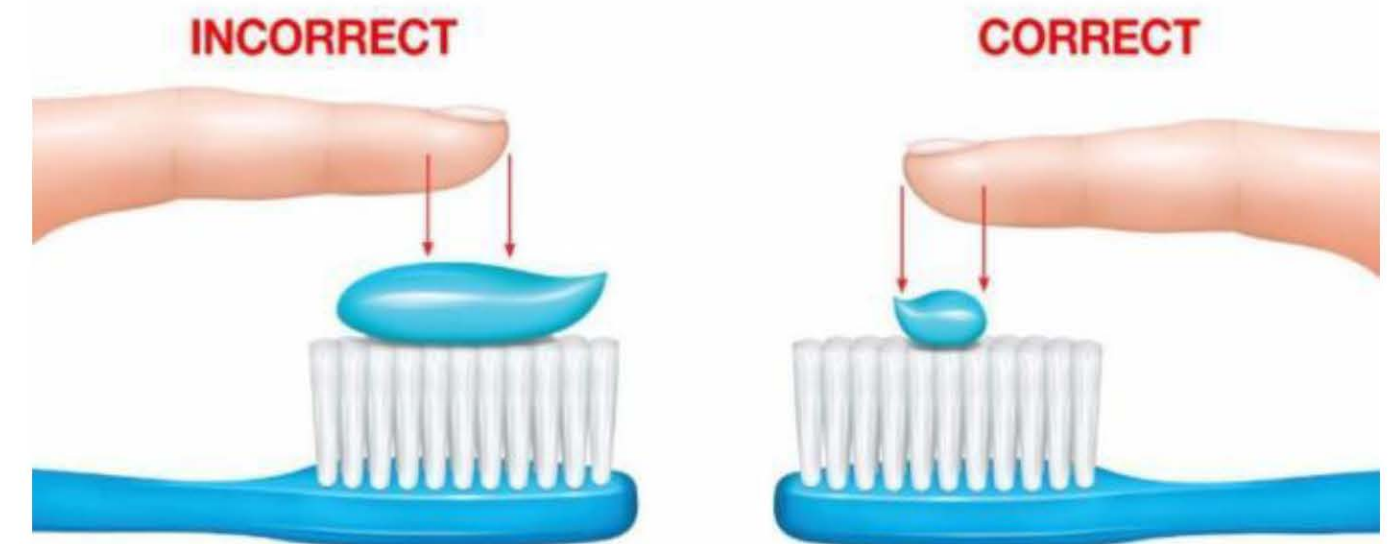
(Source: <https://www.freepik.com>)

- **How often should oral care be performed?**
- Oral care should be performed at least **twice a day** – in the morning and at night, but people with dysphagia may need extra oral care before and after meals.
- This is to minimize their risk of aspirating harmful bacteria and any fluid that may be pooling in the mouth.
- It is also important to remove any food debris from the teeth and mouth after meals that could pose a choking risk.
- Debris also provides a breeding ground for bacteria and the development of plaque that leads to tooth and gum disease.

- **Who should perform oral care?**
- Whenever possible the person should be encouraged to brush their own teeth. This may be difficult for people who find it difficult to hold a toothbrush.
- There are toothbrushes which have large handles and angled heads to make them easier to use.
- Alternatively, you may need special handgrips and other adaptations which can be fitted to manual toothbrushes to make them easier to hold. Electric toothbrushes with oscillating heads are very effective at providing a large amount of cleaning action with very little movement needed from the user, although you do need to position the brush correctly.

- **What products should be use?**

- a **dry** small headed soft to medium bristled toothbrush;
- a **small pea-sized amount of toothpaste** on a dry toothbrush.



(Source: pixabay.com)

■ **How to perform oral care for those who need help?**

If the person requires assistance to perform oral care you should:

- stand or sit behind them because it helps to support their head and means your hands are in the most appropriate position to brush their teeth.
- Tilt the persons head forward slightly to reduce their risk of aspirating on the toothpaste and debris brushed from their teeth.
- Aim to lay them on their side with their head on a pillow and a towel covering the pillow if the person is unable to sit upright.
- do not wet the toothbrush which will keep foaming to a minimum.

- **What if the person is nil by mouth (NBM)?**
- Some people with severe dysphagia are unable to be fed orally and are fed via a feeding tube. It is important that their teeth and mouths are kept clean and healthy.
- Sometimes people who are NBM can form calculus more quickly and it may be difficult to remove. Good tooth brushing will prevent this.
- They may develop aversion or 'sensory defensiveness' to oral care. This can be avoided with very gradually increased amounts of regular oral care with a soft toothbrush and mild or unflavoured toothpaste.
- People who are nil by mouth frequently suffer from dry mouth.

- **What if the person suffers from dry mouth?**
- Oral care is especially important for individuals who suffer from dry mouth as they are at greater risk of dental decay and gum disease.
- A dry mouth is very uncomfortable and also makes chewing and swallowing more difficult.
- If able, the person should be encouraged to take frequent sips of water. There are also a number of saliva substitute gels and sprays designed to provide moisture and comfort.

- **What if the person wears dentures?**
- Oral care is equally important and night, and rinsed after eating to remove any debris. When removed, all surfaces of the people with no natural teeth to keep the mouth clean, healthy and to promote saliva flow.
- Dentures should be removed at night to allow the gums to rest. They should be cleaned twice a day, morning dentures should be brushed with a toothbrush or denture brush to remove any plaque and debris.
- Dentures can be brushed with warm soapy water; a denture cleanser will help to remove stubborn stains. Ensure you clean dentures over a sink filled with water in case you accidentally drop them. When not in the mouth they should be left to soak in cold water to prevent them warping and cracking.

Dysphagia severity*	Explanation and SLP interventions	Oral hygiene recommendations
1. Minimal dysphagia	Slight deviance from normal swallow on videofluoroscopy Patient reports change in sensation during swallow No change in diet	Normal oral hygiene – i.e., twice daily toothbrushing with fluoridated toothpaste
2. Mild dysphagia	Dysphagia managed by specific swallow techniques Slightly modified diet	Toothbrushing: with high fluoride or low foaming toothpaste Interdental cleaning: flossing, interdental brushes Frequency: at least twice daily
3. Mild-moderate dysphagia	Potential for aspiration exists Diminished by specific swallow techniques and modified diet Eating time significantly increased Supplemental nutrition may be indicated	
4. Moderate dysphagia	Significant potential for aspiration Trace aspiration of one or more consistencies on videofluoroscopy Specific techniques implemented to minimise aspiration Supervision during mealtimes May require supplemental nutrition orally or via feeding tube	Toothbrushing: with high fluoride or low foaming toothpaste Frequency: after each meal If unable to tolerate foaming of toothpaste, follow measures for severe dysphagia
5. Moderately severe dysphagia	Aspirates 5–10% on one or more consistencies Cough reflex absent or non-protective Alternative mode of feeding required, nil by mouth may be indicated	Toothbrushing: dry/damp, no toothpaste Topical application of fluoride product with swabbing to remove excess Frequency: at 1–2 times daily
6. Severe dysphagia	More than 10% aspiration for all consistencies Nil by mouth recommended	

*Dysphagia severity ratings based on classification developed by Waxman et al. (1990)

Obtained from: Lim M. Basic oral care for patients with dysphagia - A Special Needs Dentistry perspective. JCPSLP. 2018; 20(3):142-9.

Reflect on the session

What did you learn today?

I learned medication in
dysphagia

Paying attention
to medicine
presentation

How will you apply what you have
learnt?

Continue learning about
the tips for medication
adaptation

What next?

Feedback



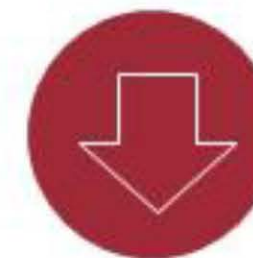
How many stars
would you give this
workshop
(1 to 5)?



What reasonable change
would you recommend?



What did you
like the MOST?



What did you
like the LEAST?

To Know More

- Cortés AC. Comer diferente, comer bien: recetas seguras para chuparse los dedos. Recetario de alimentos texturizados. CADIS Huesca. 2020:1:1-223.
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- Enteral Feeding: How It Works and When It's Used. Available at: <https://www.healthline.com/health/enteral-feeding#procedure>
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Indeed partners



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