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Freka PEG Aftercare Training

For Healthcare Professionals in Hospital and Homecare

Note:
This training is not intended to be comprehensive instructions for the set-up and care of Percutaneous Endoscopic Gastrostomy (PEG) devices. Further details are available in the Instructions for Use . Follow your local policies which may differ.

How this training works

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MENU

Click the menu icon to open the table of contents page.

Trainer

This training is organized along a timeline starting after the placement of the PEG.

Patient

And also this guide is centered along PEG patients' typical needs and concerns.

Timeline after PEG placement

A — B

Aftercare topics

- Your patient
- Stoma care
- PEG Maintenance
- Troubleshooting

Watch out for these blocks of information.

Important tips

Warnings and precautions

Do nots

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Table of contents - Click to view

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Initial care after placement
day 1 to day 7

Long-term care
day 7 onwards

A → B

Tube Feeding

- When and why tube feeding ›
- Tube feeding & medication ›
- Adapting the nutrition ›
- Tube feeding & medication ›

Stoma care

- Initial care ›
- Dressing change ›
- Long-term care ›
- Dressing change ›

PEG handling & troubleshooting

- Cleaning and Flushing ›
- Tube occlusion ›
- Cleaning and Flushing ›
- Change of ENFit connector ›
- Tube occlusion & material defects ›

Possible stoma complications

- Frequent complications ›
- PEG dislocation ›
- Frequent complications ›
- PEG dislocation ›

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Initial care after placement

Tube Feeding

A

- When and why tube feeding ›
- Adapt to tube feeding ›
- Drug application ›

When and why tube feeding?

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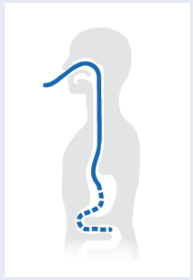
Reasons for tube feeding

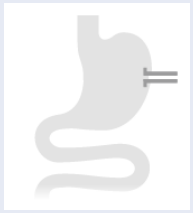
Inadequate oral nutritional intake and need for nutritional feeding for ≥ 2-3 weeks to:

- Avoid loss of body weight
- Correct nutritional deficiencies
- Rehydrate patient
- Promote growth in children with growth retardation
- Improve quality of life

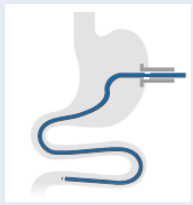
Types feeding tubes



Nasogastric feeding tube
Nasojejunal feeding tube
Short term



Percutaneous Endoscopic Gastrostomy (PEG)
Long-term standard



Jejunal tube through PEG (PEG/J)
When the long-term food intake through the stomach is impaired

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The therapy system in enteral nutrition

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Enteral nutrition container
from Fresenius Kabi called EasyBag

ENPlus
The connector between giving set and container

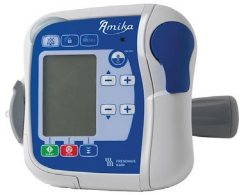
ENFit
Standard connector for enteral tube feeding

Drip chamber

ENFit syringe

Freka Transnasal tube

Roller clamp for gravity feeding



Feeding pump

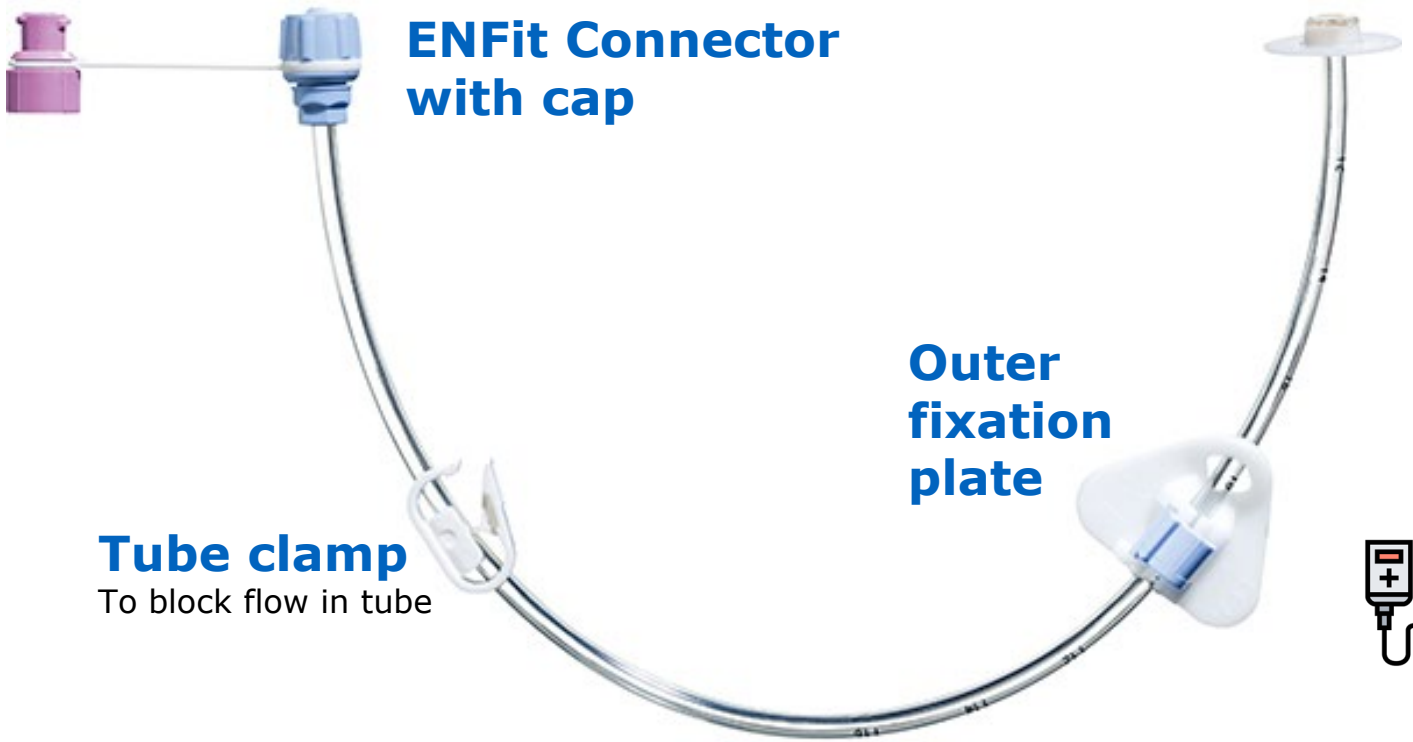
Enteral giving set

ENFit Three-way-stopcock

Freka Percutaneous tube

Purple is the color of enteral nutrition. Purple + ENFit indicate a connector which is safe for enteral application and prevent from a misconnection with intravenous application routes.

Freka PEG FR15
Which parts does a PEG consist of?



ENFit Connector with cap

Internal retention plate
To keep the PEG inside

Outer fixation plate

Tube clamp
To block flow in tube

I feel pain with my PEG. I need to report it to my clinical team and stop administering feed or water!

⚠ Water / feed can usually commence 1-2 hours after placement of the Freka PEG tube.
Any pain, bleeding or leakage, particularly within the first 72 hours after placement should be treated as an emergency.

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Get ready for tube feeding
How can you help your patient acclimatize to it?

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With the new PEG in place, I am going through a massive change in lifestyle. It is usually well tolerated and my healthcare professional helps me to acclimatize to it.

For intragastric feeding, **a fasting period after PEG placement of at least 1-2 hours** is recommended.

Modes of delivery:

- Continuous by pump
- Continuous by gravity
- Bolus

In any case, the dosage of the nutrition should be increased gradually.

Typical / recommended nutrition plan for the first 5 days

Day 1	500 ml in 20 hours, i.e. 25 ml/h
Day 2	1000 ml in 20 hours, i.e. 50 ml/h
Day 3	1500 ml in 20 hours, i.e. 75 ml/h
Day 4	2000 ml in 20 hours, i.e. 100 ml/h
Day 5	2000 ml in 16 hours, i.e. 125 ml/h

If your patient has trouble adapting, increase the dose slower or even reduce it.
Do not forget the hydration with water.

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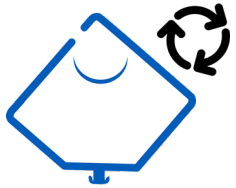
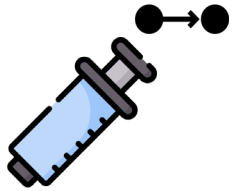
Mode of delivery

Which mode of delivery should you choose?



Continuous delivery

- By gravity or by pump
- Usually better tolerated
- Higher protein and energy supply
- Indicated for titration phase



Bolus delivery

- Mimics natural food intake rhythm
- Single bolus dose ≤ 250 ml

Use a pump to assure precise dosing below 100 ml/h.
Choose continuous delivery for the titration phase to ensure good tolerability.

Mode of delivery
Tips for a good tube feeding tolerability

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Choose nutrition according to metabolism and indication of your patient.

Increase dosage of the nutrition gradually to prevent adverse events.

Use pumps for exact, easy and secure delivery: They have alarms when empty, occluded, or the target volume is reached.

To prevent heartburn and feed refluxing, feed in an upright position.

For overnight feeding, use supporting pillows or a backrest or raise the mattress at the head of the bed instead.

Administer feed at room temperature 15-25°C.

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Drug application
How to administer medicines via the tube

Apply drugs in liquid form via the tube using a syringe.

Any drug administration should be consulted with the doctor.

Never mix drugs and food. This may cause tube blocking or changes in the effect.

Drugs with sustained release are not suitable because the mode of action can be modified. Ask the physician or pharmacist for advice.

Caution: The smaller the tube lumen, the easier occlusion can occur!

How to administer liquid medication and tablets

Material needed	20 ml ENFit syringe, glass, water, medication
Prepare medication	Liquid drug: Dissolve with some water Tablet: Crush tablet one by one and/or completely dissolve in water
Flush tube	≥ 20 ml of water
Administer medication	In case multiple medications need to be given, flush after each medication application
Flush tube	≥ 20 ml of water

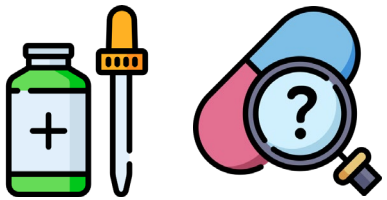
Dos and Don’ts
Different types of medications

Crush all solid medication according to instructions for use!

Prepare medication thoroughly especially when the tube lumen is small to prevent occlusion!

Sustained-release tablets, capsules and coated tablets may not be suitable for the application by tube since the comminution the galenics and thus the mode of action may change.

Please consult a pharmacist or physician.



Prefer liquid medication!

Prefer medication with non-enteral mode of administration, e.g., rectal or sublingual!

Don’t mix medications!
Don’t mix medication with feed, tea, or juice!

Don’t apply medication simultaneously with feed, tea, or juice!

Prepare properly and don’t mix!

Dos and Don’ts
Tips for administration of medications

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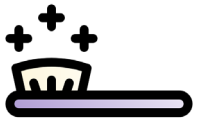
Don’t use tea or juice for flushing, only water!

Flush generously with min 20ml before and after any application (food, medication) or aspiration!

Flush tubes that are not used at least once a day!



Clean the connectors regularly, e.g. with a toothbrush and warm water!

You can prevent tube occlusion by correctly flushing and proper care!

Prevention is better than an occluded tube! **Flush, flush, flush!**

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Understanding your patient’s situation
Wrap-up

Continuously check how your patient tolerates the PEG feed.

Prepare medication or feed properly and don’t mix.

You can prevent tube occlusion by correctly flushing and proper care.

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Initial care after placement

Initial stoma care

A

Start stoma care at home ›

Dressing change day 1-7 ›

Stoma care – the first days
How to start stoma care at home?

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It is important that the correct daily aftercare is completed for both a “fresh” and “mature” stoma site.

- Day 1-7: “fresh” stoma site aftercare should be performed daily
- Day >7: “mature” stoma site aftercare should be performed daily or every 2-3 days

Initial wound care must be done by a Healthcare Professional only.
The Healthcare Professional is responsible for training of patients and carers before they perform the aftercare themselves.

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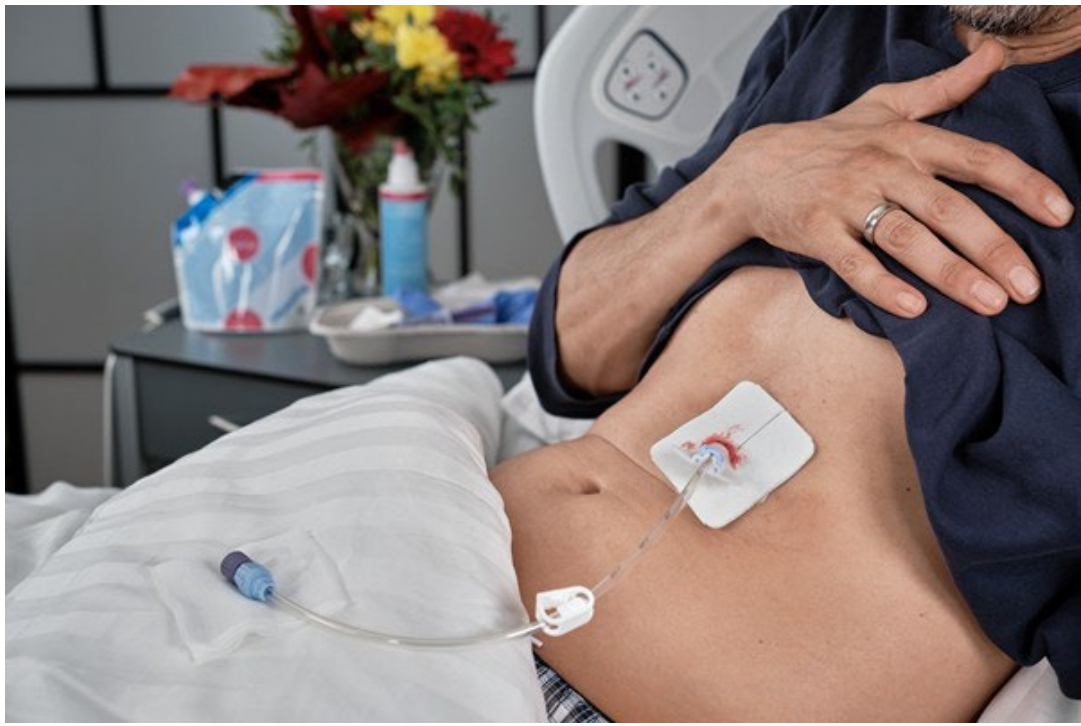
Stoma care – the first days
General and Dos and Don’ts

Your patient arrived home with a fresh surgical stoma. Absolute hygiene and caution in handling like in wound care are essential to avoid complications such as inflammation.

Dos and Don’ts

- Keep the outer retention plate and tube dry. Don’t leave it slippery.
- Keep the skin around the stoma always dry and with a good ventilation to avoid a moist chamber.
- Fix the tube carefully by applying as much tension as necessary to get a tight fixation, but not more. The force to be used corresponds to lift up about 2 bars of chocolate à 100g to build a stoma.



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Overview: Stoma care
Procedure for dressing change day 1-7

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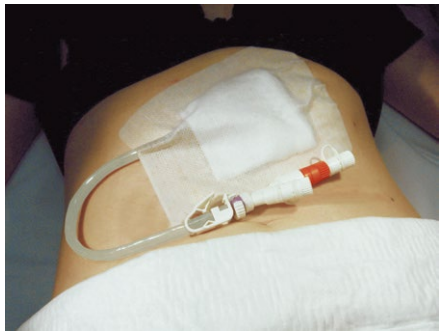
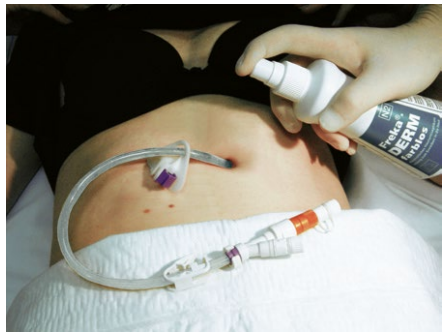
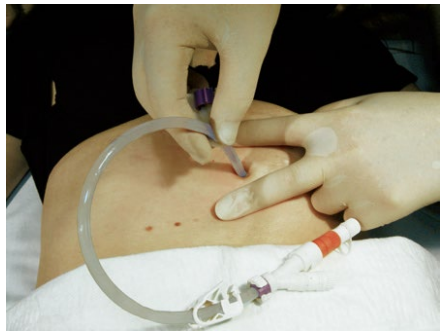
Overview of steps*

* The pictures show a JET-PEG. The steps of the dressing change of a PEG are the same, only the way of mobilization differs.

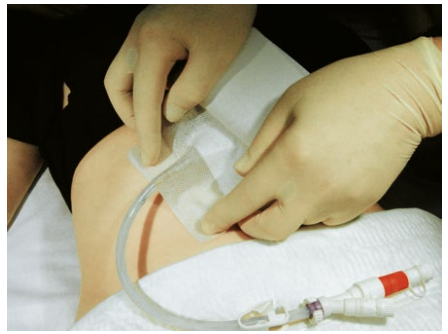


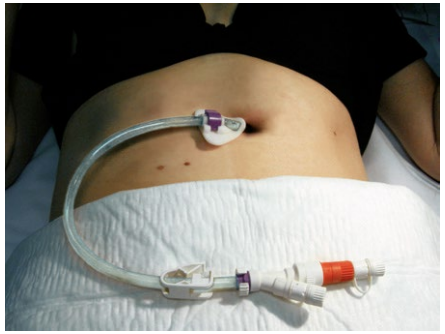
1. Preparation



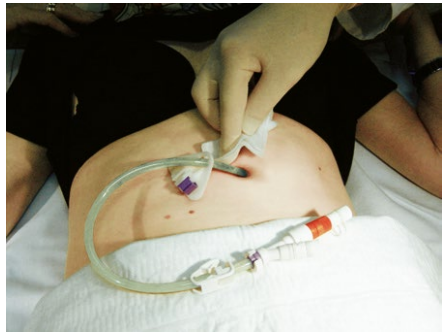


5. Mobilization of the tube

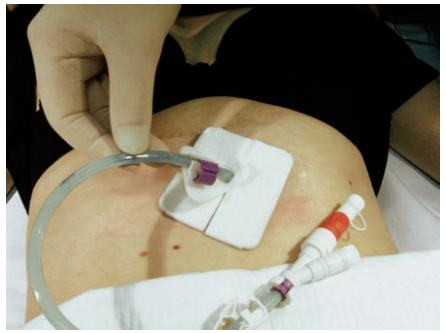




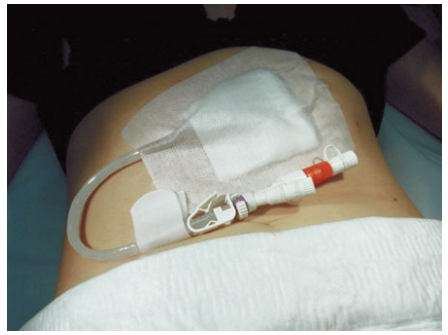
2. Remove dressing
3. Inspection of the stoma



4. Disinfection and cleaning of the stoma



6. Application of dressing



7. Secure the tube
8. Documentation

Explain the steps to your patient. Routine care is crucial for optimal stoma healing.

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Preparation
Step 1 of 8 in stoma care

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- Inform the patient and position him/ her comfortably, ideally lying down
- Prepare and disinfect work surface and wash hands, close windows
- Open dressing packs
- Apply disposable gloves

When disinfecting hands, consider the less wetted areas shown in dark blue.

Material

- Hand disinfectant
- 1 sterile Y-compress (7.5 x 7.5 cm)
- Plaster (Secu-Tape)
- 3 pairs of sterile gloves
- 4 sterile compresses
- Disposal bag
- Disinfection spray
- Stretch-plaster (10.0 x 10.0 cm)

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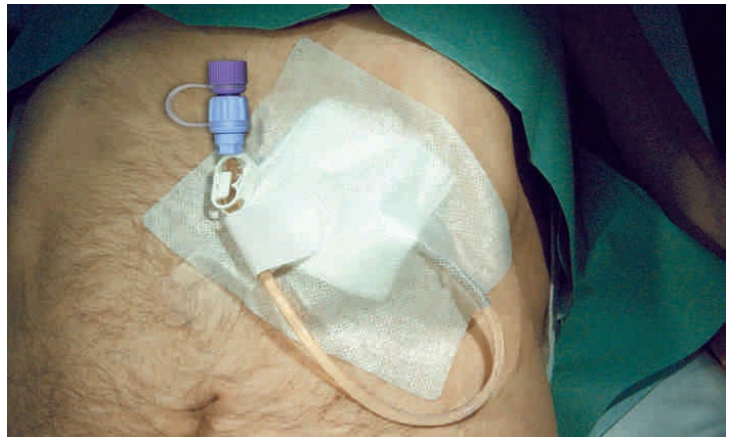
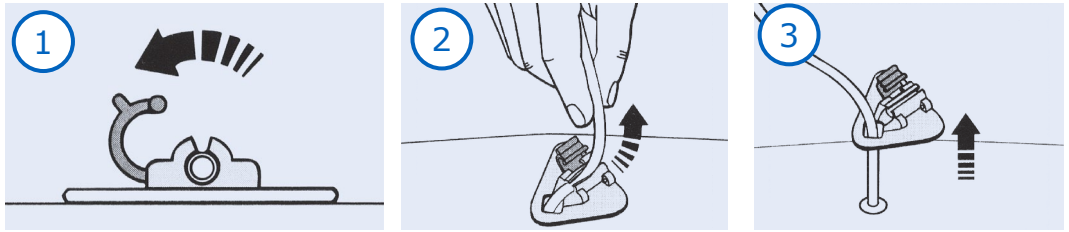
Remove dressing
Step 2 of 8 in stoma care

- Remove dressing and dispose carefully



At the PEG:

- Open fixation plate (1)
- Take out the tube from the outer fixation plate (2)
- Pull back the fixation plate (3)



Stoma inspection
Step 3 of 8 in stoma care

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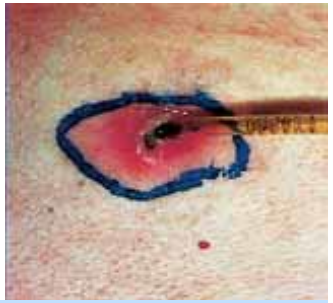
Look for possible complications

Symptom	Comment
Slight pain	2-3 days normal (analgesics if required)
Bleeding	Slight post-OP bleeding is possible on the first day
Reddening	< 5 mm, no stoma infection, observe carefully
Secretion	• Differentiate between enteral feeding, stomach acid, and pus • Change dressing several times a day to keep the stoma as dry as possible
Skin surface bulging or induration	Possible ultrasound scan for further investigation
Allergic skin reactions	Inform physician



Mark the outline of the local reddening for better progress assessment.

Also ask me about my observations as patient.

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Stoma cleaning and disinfection
Step 4 of 8 in stoma care

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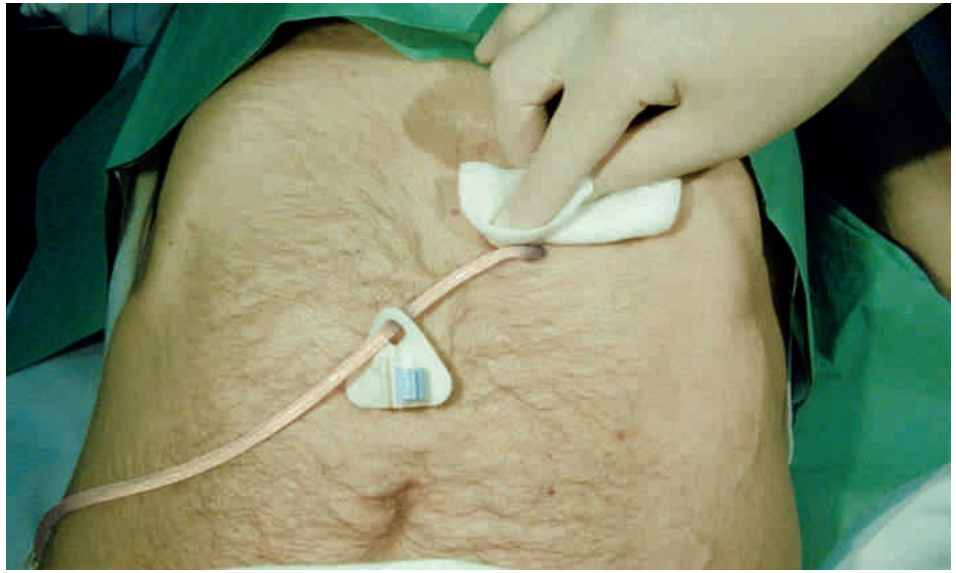
- Use disinfection spray to cover the insertion site, the whole tube, external fixation plate, and the surrounding stoma area
- Clean the stoma from the center outwards, using the no-touch technique
- Look out for reddening or signs of infection
- Further spraying of the insertion site, the outside area of the tube and the external fixation plate



Leave area to dry completely.
Don’t leave stoma moist.

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Mobilization of the tube
Step 5 of 8 in stoma care

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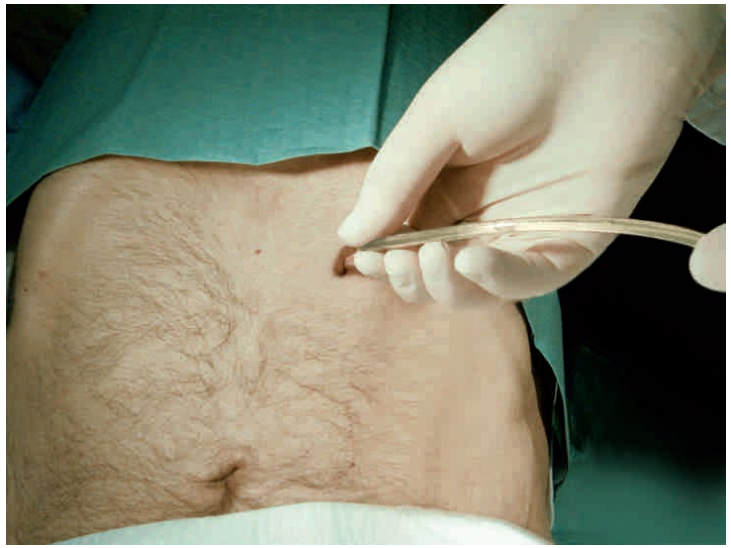
- Push the tube 3-4 cm into the stoma and rotate by 360°
- In case of a JET-PEG: Never rotate by 360°, just push the tube 3-4 cm back and forth ventrally

- Carefully pull the tube back up until a slight resistance is felt (internal fixation plate)
- Disinfect the stoma, tube and external fixation plate. Volatile substances should be preferred to minimise the period of contact with the tube.



Mobilization of the tube is critical to prevent the internal fixation plate from becoming embedded in the internal gastric wall.

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Apply stoma dressing
Step 6 of 8 in initial stoma care

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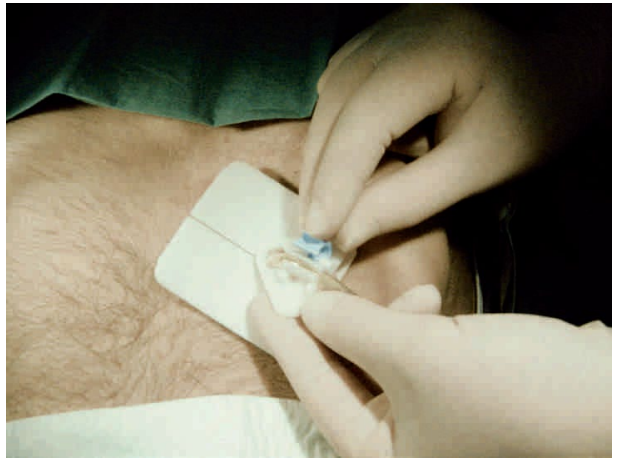
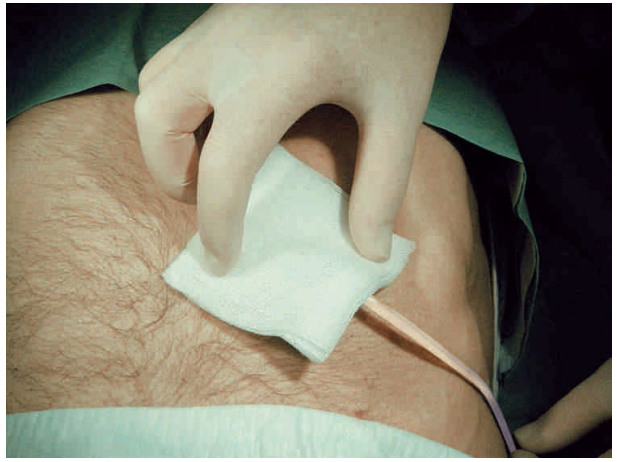
- Put the Y-compress between skin and fixation plate
- Ensure that tube and plate are dry
- Then put the external fixation plate back in place and fix it with a little space and close it



- Apply compresses on fixation plate



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Apply stoma dressing
Step 7-8 of 8 in initial stoma care

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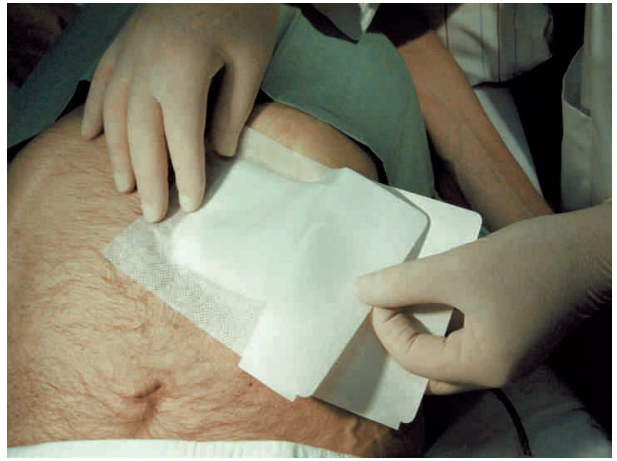
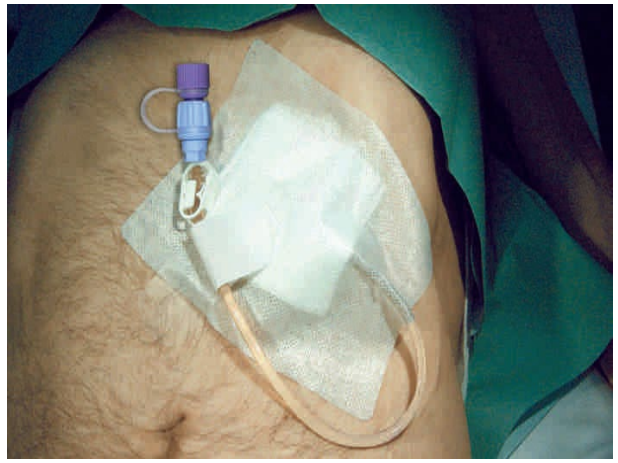
- Fixate the dressing with a stretch-plaster.



- Fix the tube to the dressing with a plaster or Secu-Tape carefully



- Keep a record of the change of dressing and observations.

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Initial stoma care
Wrap-up

Ensure to keep the stoma area dry and to work in a sterile way.

Look out for possible complications.

Pay special attention to the mobilization of the tube and how tight to fix it.

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Initial care after placement

Stoma complications

A

- Frequent complications ›
- Troubleshooting ›
- Stoma infection ›
- PEG dislocation ›

Local stoma infection
How do I notice stoma infection?

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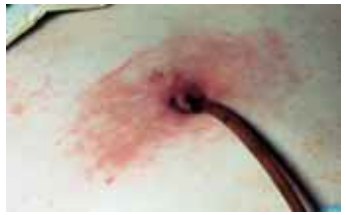
Infection symptoms

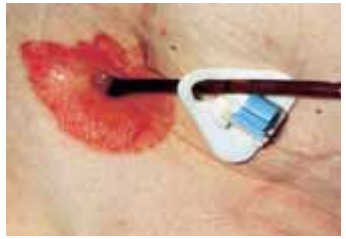
- Redness
- Swelling (oedema)
- Overheating
- Pain
- Secretion: first watery, then purulent
- Widening of the stoma tract



Infection with blurred redness

Fungal infections

- Itching
- Scaly skin
- Pain and swelling rarely
- Infection more clearly limited



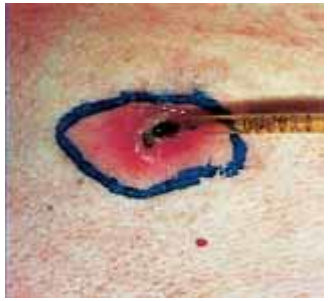
Typical fungal infection

Diagnosis

- Visual assessment and palpation by finger to identify the subcutaneous swelling
- Perform a stoma swab to identify bacterial or fungal infection

Documentation

- Document thoroughly
- Include a size comparison in photos (coin or centimetre measure)
- To capture changes quickly, highlight the dimensions of the affected area with a permanent marker (surgical pen)



Outlined infection

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Local stoma infection
How do I treat it?

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Treatment

- Daily change of dressing according to standards
- Keep stoma sterile and dry
- Extensive infections: Gently rinse stoma with warm water. Let dry completely
- Apply disinfectant and swab stoma with povidone-iodine (PVP-I) solution. Protect tube from contact with PVP-I. Do not use ointments
- Overheating, tension, pain:
  - Locally cooling with ice or cooling pad
  - Omit direct skin contact
  - Limit therapy to 10-15 min
- Confirmed fungal infection: Antimycotics

PVP-I, alcoholic solutions containing Phenoxyethanole or Isopropanol (such as Octenisept) and ointments can damage the tube material and should be avoided!

Change dressing daily and check for extensive or fungal infections.

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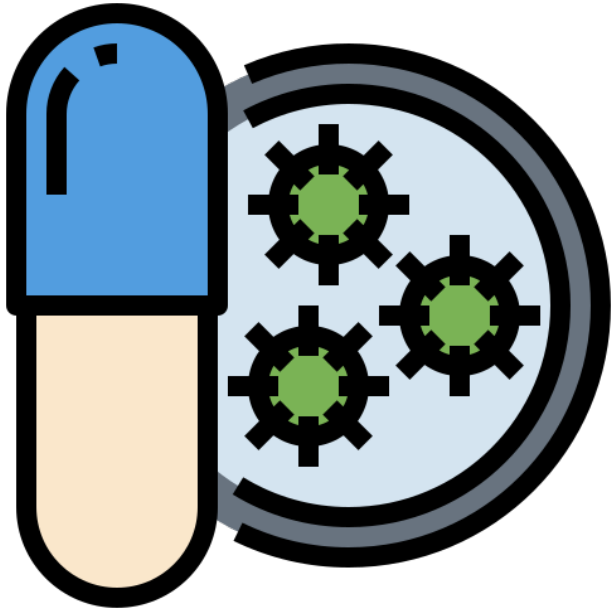
Dos and Don’ts
In case of an infected stoma



Local antibiosis

- No scientific proof of benefit in PEG patients, not indicated
- But may lead to a moist chamber
- May support the development of resistant bacteria

Systemic antibiosis

- Treat local infections locally not systemically
- Exception: Critical patients, highly immunocompromised patients, fever

Abscess

- No antibiosis
- Transfer patient to surgery
- Consider to switch to an exchange system, preferable a Button or GastroTube

Check the application of antibiotics carefully with the medical advisor!

Wound infection - stoma too wide
How do I treat it?

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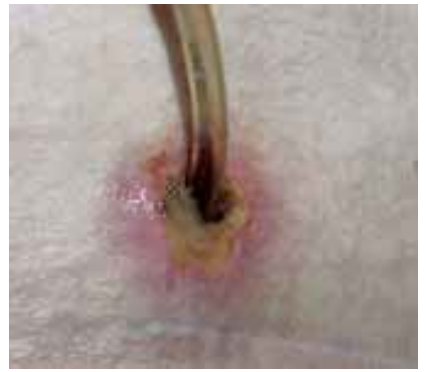
Causes

- Too big puncture when PEG was placed
- Persistent infection in stoma tract
- Fixation of internal and external plates too loose, continuous moving of the tube



Infection due to too wide stoma

Treatment

- Flush stoma tract and necrotic cavities regularly with isotonic saline solution (use a syringe or irrigation cannula)
- To keep stoma dry and facilitate granulation, gauze tamponade can be applied
- With every dressing change, flush stoma and exchange tamponade

Flush stoma and keep the stoma dry, use tamponade if necessary.

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PEG dislocation during initial care
What shall I do?

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PEG dislocation in the first 14 days can cause leakage of gastric content into the peritoneal cavity and peritonitis.

Cause: Pulling of tube

Symptoms

- Impaired or impossible application of nutrition
- Pain
- Pain when applying food
- Tight, pressure sensitive abdominal wall
- Elevated temperature to high fever
- Gastro-intestinal impediments

Rare complication but **acute emergency**!

Requires immediate surgical treatment!

The sooner the surgery, the higher the chances of survival!

Important: My symptoms can be easily overlooked in case I am an elderly or non-responsive patient!

If you suspect a PEG dislocation inform the physician immediately to confirm.

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Stoma care
Overview frequent complications

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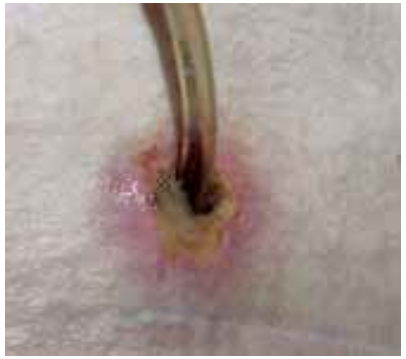
What to do when you encounter the following complications

Complication	Possible action
Encrusted dressing	Remove with 0.9 % saline solution
Residual tape	▪ Remove with disinfection spray ▪ In special cases with surgical spirit but only on intact skin
Signs of inflammation	▪ 2x daily change of dressing with regular stoma inspections ▪ Possible swab if prescribed by doctor ▪ Severe cases: Systemic antibiotic treatment
Severe discharge	▪ Keep stoma dry ▪ Change dressing several times daily ▪ Never apply ointment on a PEG stoma! ▪ Never apply ointment on an inflammation PEG stoma!
Overgranulation tissue	Remove to avoid complications by surgery or cautery: Silver nitrate



Infection of the stoma

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Troubleshooting
Stoma complications cheat sheet 1/3

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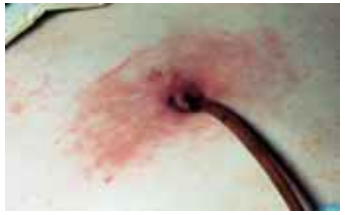
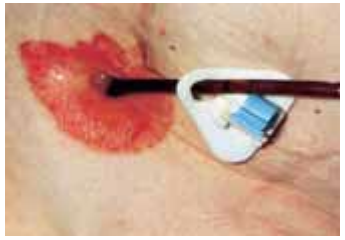
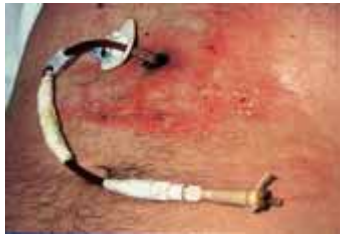
Picture	Symptoms	Cause	Treatment
	**Stoma painful and red**	Moist chamber, dressing change not often enough, usage of ointments at punctuation site, incorrect fixation	Stoma swab Documentation: Mark infection or take photo Sterile, dry dressing as per standard Frequent check-up of stoma and fixation
	**Stoma red, itchy, scaly skin, clearly distinguishable stoma area**	Fungal infection	Stoma swab Antimycotics
	**Material defect**	In many cases non-compliance of care recommendations (alcohol application, wrong salves, adhesive residue on feeding tube or connectors)	Exchange of defect parts

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Troubleshooting
Stoma complications cheat sheet 2/3

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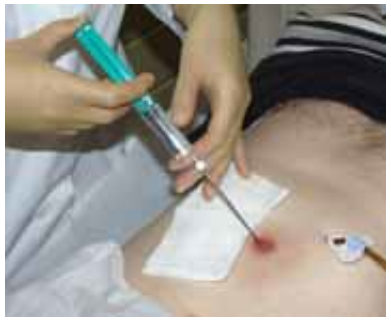
Symptoms	Cause	Treatment
Stoma secretion, clear	Puncture too big Too much room between internal and external plate	Change dressing 3-4 times per day Keep stoma dry Tamponade stoma tract if needed Keep PEG fixation moderately tight (until the resistance of internal fixation plate) Fixate tube in external plate and place Y-compresses Protect not infected skin
Stoma secretion, purulent	See above and progressing infection	See above and Flush stoma and necrotic cavities with saline solution or lukewarm water  Frequent check-up of stoma and fixation, at least 1/day Apply intestinale tube to relieve stomach

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Troubleshooting
Stoma complications cheat sheet 3/3

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Symptoms	Cause	Treatment
Leakage of feed or gastric acid 	Puncture too big Too much room between internal and external plate Skin damage	Clean and disinfect stoma, tamponade it if needed Dry sterile dressing; change as needed Keep PEG fixation moderately tight (until the resistance of internal fixation plate) Use Y-compresses generously Apply intestinale tube to relieve stomach Protect not infected skin Medication to facilitate gastric emptying
Extensive and painful stoma, painful abdominal wall, overheating, elevated temperature or fever 	Abscess, phlegmon, generalized infection	Immediately consult physician, endoscopy

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Medical complications
Wrap-up

Carefully examine the stoma to identify complications the sooner the better.

Remember to document complications thoroughly.

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Initial care after placement

Handling the PEG & Troubleshooting

A

- Cleaning and flushing ›
- Tube occlusion ›
- Troubleshooting ›

Methods of flushing the tube
How do I correctly flush the tube?

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Using ENFit syringe for flushing

Method A

Connect the ENFit syringe (20ml or larger) to the medication port of the giving set. Turn the medication port to 90º to administer water.

Method B

Connect the ENFit syringe (20ml or larger) directly to the tube.

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Tube occlusion
Better prevent it

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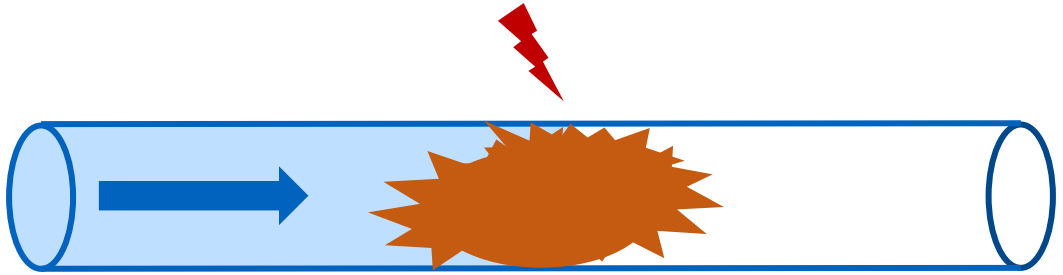


- Common complication
- Main cause: Application of medication

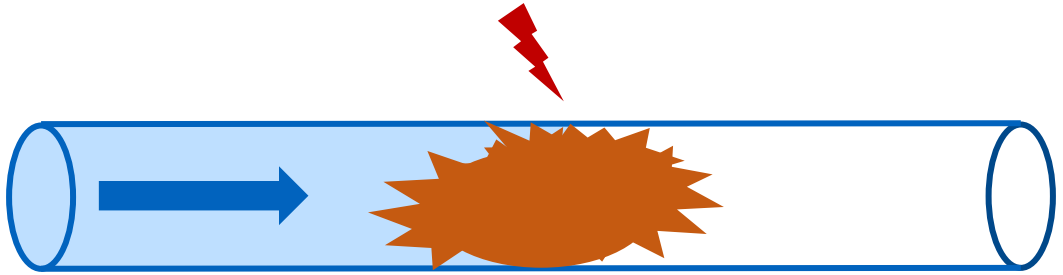
Prevention

- Flush with water
- Minimize repeated gastric residual aspiration: pH < 4 can promote protein coagulation
- Flush before and after medication or bulking agents
- Don’t apply alcoholic drinks over your tube
- Massage the tube to break up a clog

Tube occlusion is best to be prevented by thorough care and flushing – flush, flush, flush.

Tube occlusion
What you can do about it

- Double check that the tube is not kinked and all clamps are open
- Flush tube with a 60 ml syringe and only slight pressure
- Administer sparkling water and close the clamp and let it soak for 15 min
- If the tube occlusion remains, contact the physician for the next steps



Do not use sharp devices or a guidwire to unclog the tube. This can injure the patient or damage the material.

Do not apply additional pressure.

Do not use small volume syringes.

If the tube occlusion remains, contact the physician. The PEG might need to get replaced.

Troubleshooting
What shall I do when my patient gets worse? 1/2

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Symptoms	Cause	Treatment
Diffuse, general abdominal pain; pain when administering feed 	Dislocation and peritonitis	Immediately stop feeding Check tube positioning Examination by physician as soon as possible
Deterioration of patient responsiveness, clouding of consciousness 	Too little fluid intake Underlying diseases, e.g. diabetes perforation, tube dislocation	Check fluid requirement Check blood glucose level Examination by physician as soon as possible

Caution: In case of acute pain or raised temperature immediately inform the treating physician, stop nutrition and liquid supply.

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Troubleshooting
What shall I do when my patient gets worse? 2/2

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Symptoms	Cause	Treatment
Diarrhea 	Application of feed too quick, in too large amounts, too cold, wrong kind of nutrition	Adjust amounts, rate, temperature Check tube positioning (aspiration, X-ray) Check medication Try out probiotics, e.g. 3 x 1 capsule Metaflow®
Bloody stools 	Multiple, e.g. necrosis or volvulus of the small intestine	Examination by physician as soon as possible Is there a causal relation to the tube?

Caution: In case of bloody stools immediately inform the treating physician.

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Handling the PEG & Troubleshooting
Wrap-up

Pay attention to frequently flushing the tube to prevent tube occlusion.

Carefully handle an occluded tube and apply only slight pressure.

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Long-term care

Your patient in long-term care

B

- Adapting the nutrition ›
- Tips for tolerability ›
- Tips for tube feed and medication ›

Tube feeding
Adapt the nutrition to your patient’s needs

The daily nutrient intake and composition needs to be determined for each patient individually. It depends for example on the patient’s body weight, activity, disease, and age.

Diarrhea or constipation

Use fiber-containing feeds

Diabetes

Use a modified enteral formula with lower sugar content containing slowly digestible carbohydrates

Enrich the nutrition with unsaturated fatty acids, especially monounsaturated fatty acids

Daily references

Nutrient intake: 25-35kcal per kg body weight

Fluid intake: 35-40ml per kg body weight

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Mode of delivery
Tips for a good tube feeding tolerability

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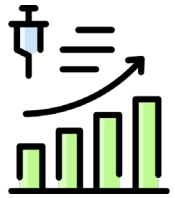
Choose nutrition according to metabolism and indication of your patient



Increase dosage of the nutrition gradually to prevent adverse events

Use pumps for exact, easy and secure delivery:They have alarms when empty, occluded, or the target volume is reached

To prevent heartburn and feed refluxing, feed in upright position

For overnight feeding, use supporting pillows or a backrest or raise the mattress at the head of the bed instead

Administer feed at room temperature 15-25°C

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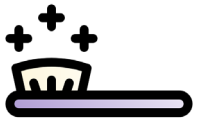
Dos and Don’ts
Tips for administering feed and medicines

Don’t use tea or juice for flushing, only water!

Flush generously with min 20ml before and after any application (food, medication) or aspiration!

Flush tubes that are not used at least once a day!



Clean the connectors regularly, e.g. with a toothbrush and warm water!

You can prevent tube occlusion by correctly flushing and proper care!

Prevention is better than an occluded tube! **Flush, flush, flush!**

Dos and Don’ts
Different types of medicines

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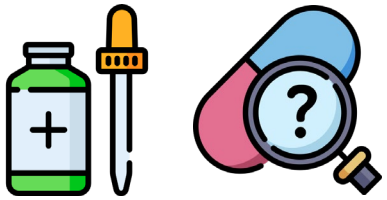
Crush all solid medication according to instructions for use!

Prepare medication thoroughly especially when the tube lumen is small to prevent occlusion!

Sustained-release tablets, capsules and coated tablets may not be suitable for the application by tube since the comminution the galenics and thus the mode of action may change.

Please consult a pharmacist or physician.



Prefer liquid medication!

Prefer medication with non-enteral mode of administration, e.g., rectal or sublingual!

Don’t mix medications!
Don’t mix medication with feed, tea, or juice!

Don’t apply medication simultaneously with feed, tea, or juice!

Prepare properly and don’t mix!

Your patient in long-term care
Wrap-up

Nutrient intake depends highly on the patient and can vary over time or the course of the disease.

Keep up a good routine of medication and feed administration.

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Long-term care

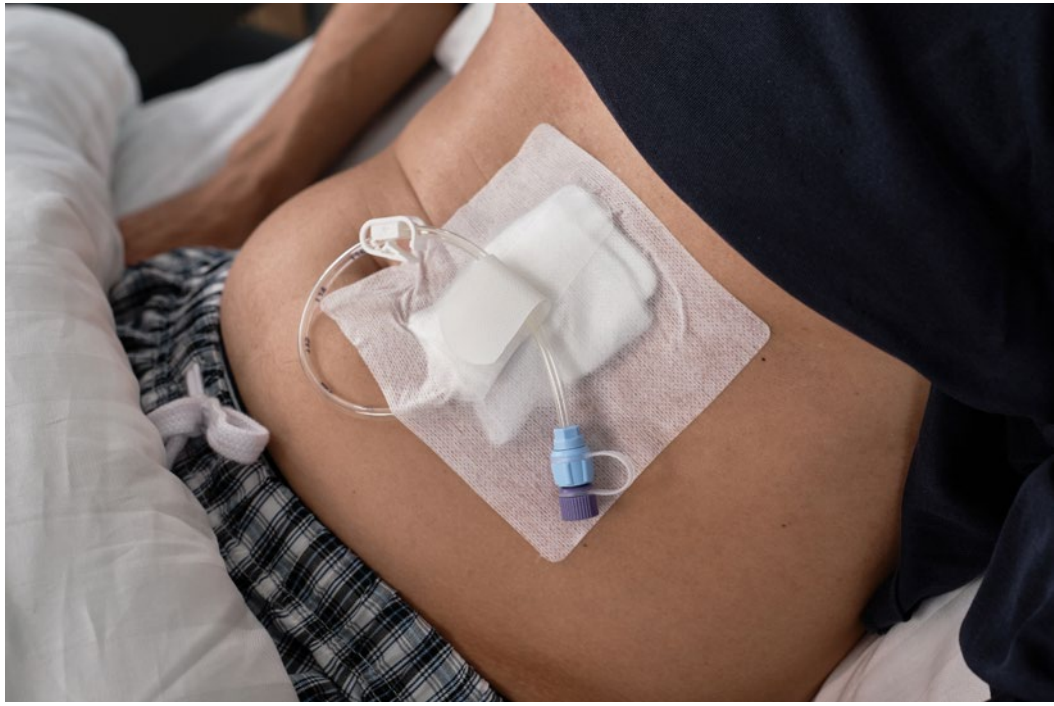
Long-term stoma care

B

- Tips for stoma care ›
- Dressing change after day 7 ›
- Body hygiene ›

Dos and Don’ts
Tips for long-term stoma care

Absolute hygiene and caution in handling are essential to avoid complications such as inflammation.



Dos and Don’ts

- Keep the outer retention plate and tube dry. Don’t leave it slippery.
- Keep the skin around the stoma always dry and with a good ventilation to avoid a moist chamber.
- Fix the tube carefully by applying as much tension as necessary to get a tight fixation, but not more.

Avoid disinfectants based on phenoxyethanole, isopropyl alcohol or ointments with iodine. They can damage the tube material.

Routine care is crucial for optimal stoma healing.

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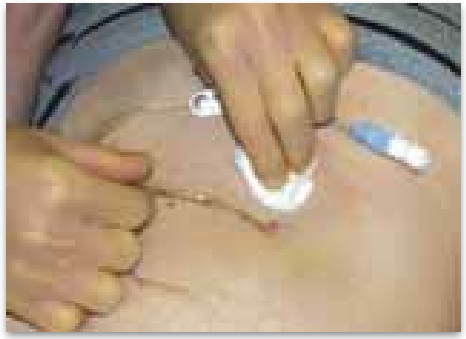
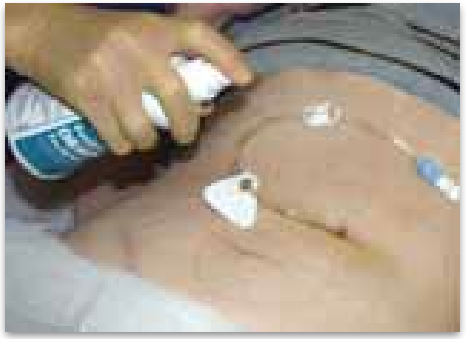
Stoma care
Procedure for dressing change after day 7

After day 7 the dressing change needs to be done <u>every 2-3 days.</u>
Intensive cleaning with daily disinfection is no longer necessary and can lead to mycosis or eczema in long-term care.

Overview of steps



1. Preparation
2. Remove dressing



3. Inspection of the stoma
4. Cleaning and disinfection of the stoma

5. Mobilization of the tube
6. Application of dressing

7. Secure the tube
8. Documentation

Stoma care
Procedure for dressing change after day 7

Click above to watch a video about the dressing change
(to play the video an internet connection is required).

Preparation
Step 1 of 8 in stoma care

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- Inform the patient and position him / her comfortably, ideally lying down
- Prepare and disinfect work surface and wash hands, close windows
- Open dressing packs
- Apply disposable gloves

When disinfecting hands, consider the less wetted areas shown in dark blue.

Material

- Hand disinfectant
- 1 sterile Y-compress (7.5 x 7.5 cm)
- Plaster (Secu-Tape)
- 3 pairs of sterile gloves
- 4 sterile compresses
- Disposal bag
- Disinfection spray
- Stretch-plaster (10.0 x 10.0 cm)

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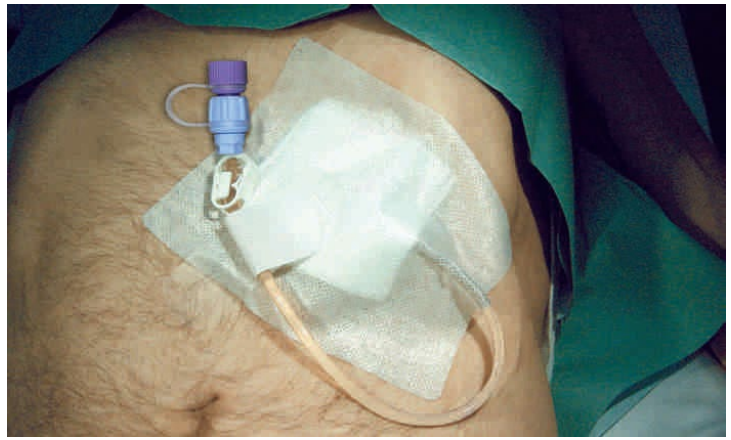
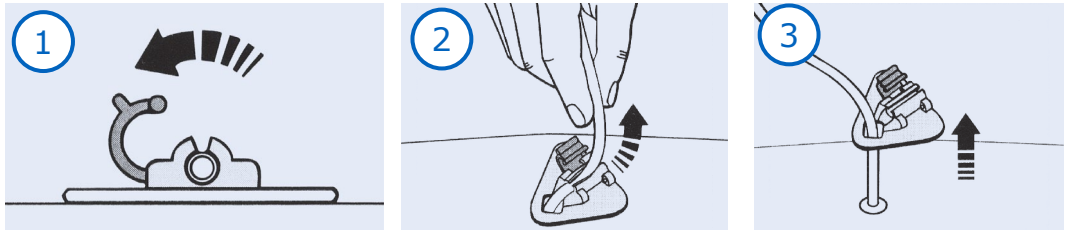
Remove dressing
Step 2 of 8 in stoma care

- Remove dressing and dispose carefully



At the PEG:

- Open fixation plate (1)
- Take out the tube from the outer fixation plate (2)
- Pull back the fixation plate (3)



Stoma inspection
Step 3 of 8 in stoma care

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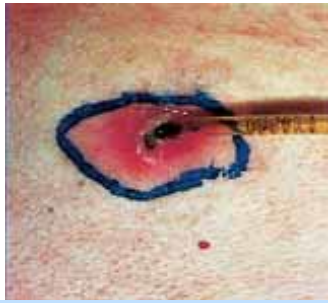
Look for possible complications

Symptom	Comment
Slight pain	2-3 days normal (analgesics if required)
Bleeding	Slight post-OP bleeding is possible on the first day
Reddening	< 5 mm, no stoma infection, observe carefully
Secretion	• Differentiate between enteral feeding, stomach acid, and pus • Change dressing several times a day to keep the stoma as dry as possible
Skin surface bulging or induration	Possible ultrasound scan for further investigation
Allergic skin reactions	Inform physician



Mark the outline of the local reddening for better progress assessment.

Also ask me about my observations as patient.

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Stoma cleaning and disinfection
Step 4 of 8 in stoma care

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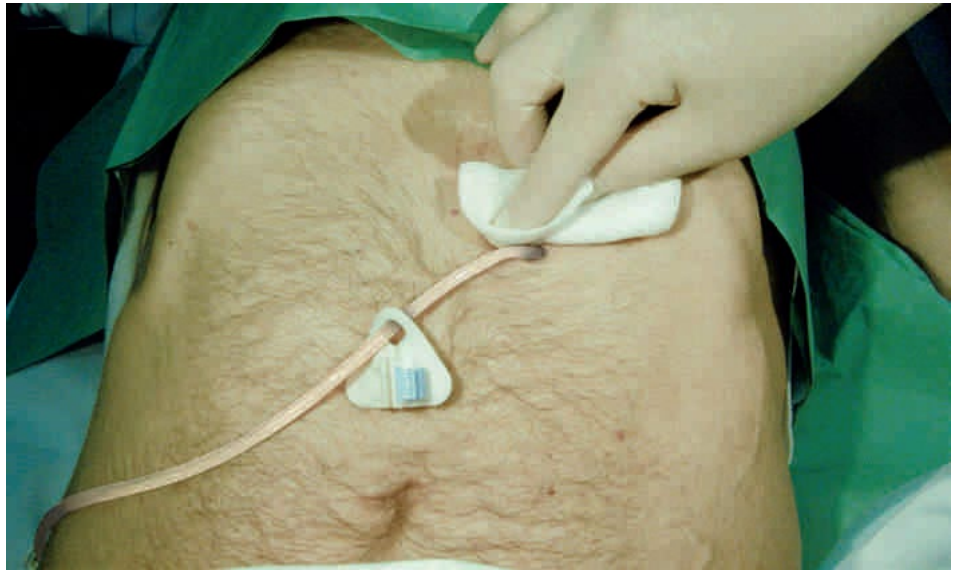
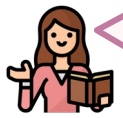
- Use disinfection spray to cover the insertion site, the whole tube, external fixation plate, and the surrounding stoma area
- Clean the stoma from the center outwards, using the no-touch technique
- Look out for reddenings or signs of infection
- Further spraying of the insertion site, the outside area of the tube and the external fixation plate





Intensive wound cleaning with daily disinfection is no longer necessary and can lead to mycosis or eczema in the long-term.

Leave area to dry completely.
Don’t leave stoma moist.

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Mobilization of the tube
Step 5 of 8 in stoma care

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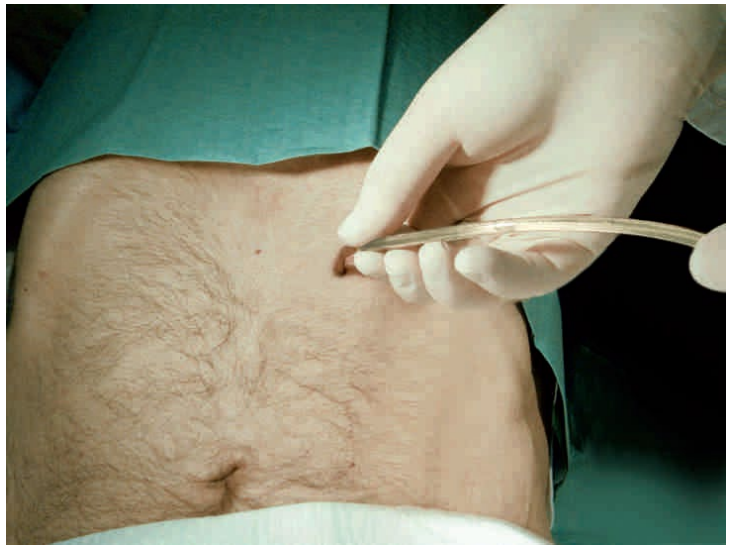
- Push the tube 3-4 cm into the stoma and rotate by 360°
- In case of a JET-PEG: Never rotate by 360°, just push the tube 3-4 cm ventrally

- Carefully pull the tube back up until a slight resistance is felt (internal fixation plate)
- Disinfect the stoma, tube and external fixation plate



Mobilization of the tube is critical to prevent the internal fixation plate from becoming embedded in the internal gastric wall.

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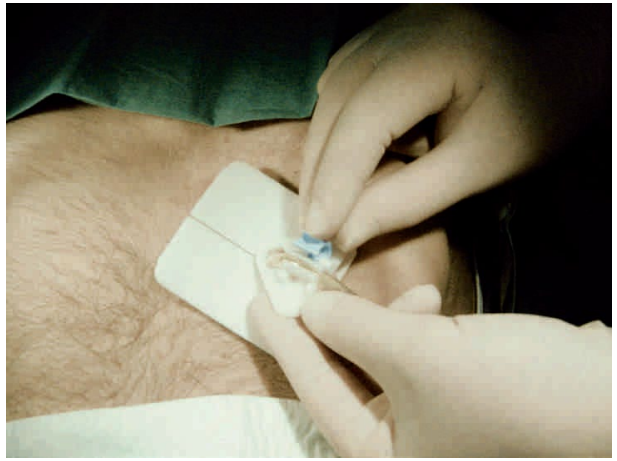
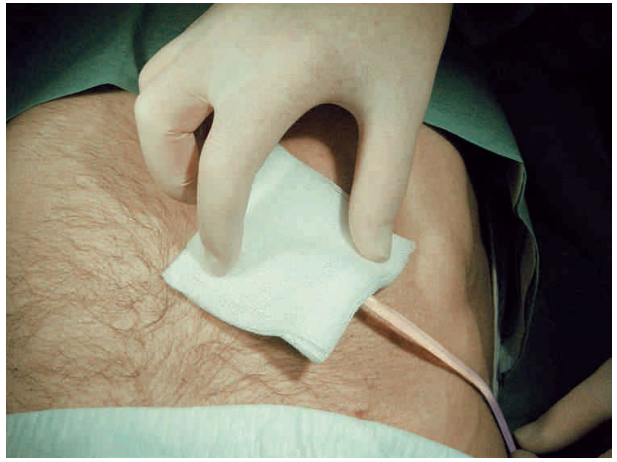
Apply stoma dressing
Step 6 of 8 in initial stoma care

- Put the Y-compress between skin and fixation plate
- Ensure that tube and plate are dry
- Then put the external fixation plate back in place with a little space and close it



- Apply compresses on fixation plate



Apply stoma dressing
Step 7-8 of 8 in initial stoma care

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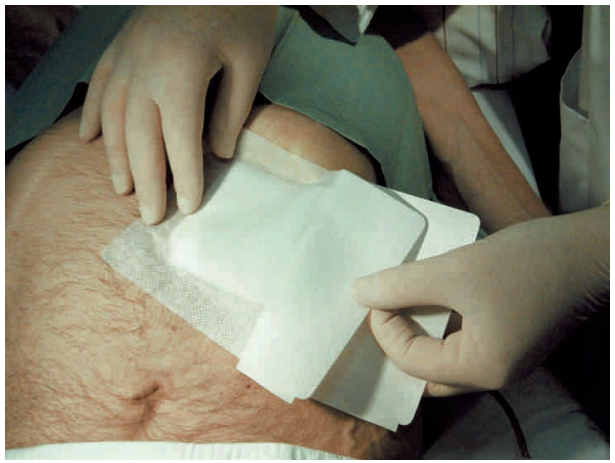
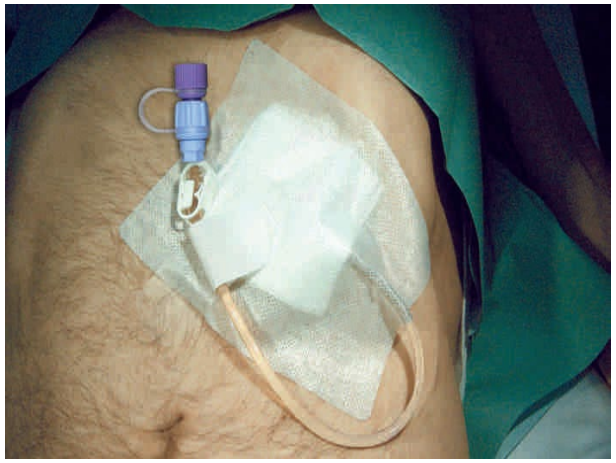
- Fixate the dressing with a stretch-plaster

When good individual hygiene is guaranteed, covering of the outer stoma is not necessary.

- Fix the tube to the dressing with a plaster or Secu-Tape carefully by applying as much tension as necessary to get a tight fixation, but not more

- Keep a record of the change of dressing and observations





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Body hygiene
Long-term care

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Body cleaning

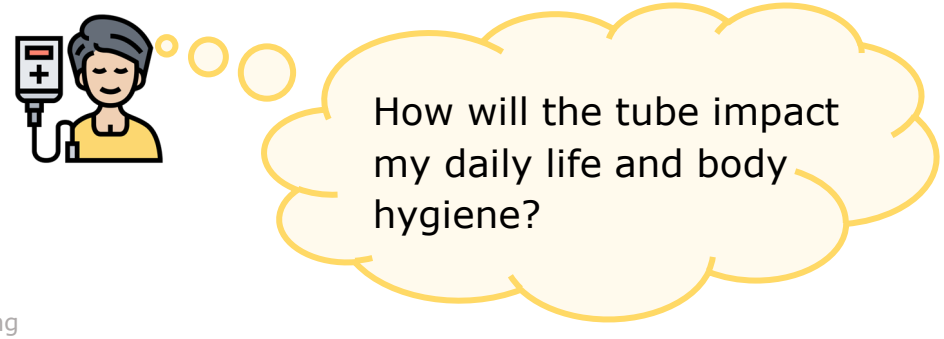
Possible 2 weeks after PEG insertion

- With soap and water or showering
- Always remove dressing for body cleaning, rinse away residual soap
- After the cleaning, leave insertion site to dry well and apply new dressing

Bathing and swimming

Bathing and swimming only possible after complete initial stoma healing

- Apply transparent adhesive dressing around the dressing and tube
- After bathing or swimming, leave insertion site to dry well and apply new dressing



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Long-term stoma care
Wrap-up

Ensure to keep the stoma area dry and to work in a sterile way.

Look out for possible complications.

Pay special attention to the mobilization of the tube and how tight to fixate it.

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Long-term care

PEG Handling & Troubleshooting

B

- Cleaning and flushing ›
- Replacing the ENFit connector ›
- Tube occlusion ›
- Material defects ›

Methods of flushing the tube
How do I correctly flush the tube?

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MENU

Using ENFit syringe for flushing

Method A

Connect the ENFit syringe (20ml or larger) to the medication port of the giving set. Turn the medication port to 90º to administer water.

Method B

Connect the ENFit syringe (20ml or larger) directly to the tube.

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Dos and Don’ts
Tips for long-term PEG handling

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MENU

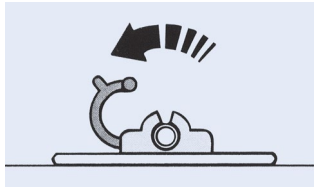
Don’t use tea or juice for flushing, only water!

Flush generously with min 20ml before and after any application (food, medication) or aspiration!

Flush tubes that are not used at least once a day!

Regularly check for material defects.

Clean the connectors regularly, e.g. with a toothbrush and warm water to avoid encrusted feed.



Leave clamp open if tube is not used. This protects the tube from material damage.
Close clamp when connecting or disconnecting to a giving set or a syringe.

Keep up a good routine of flushing and checking the stoma and tube!

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Recommendations for clinical practice
How do I correctly replace the ENFit connector or other parts?

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Replacing the old ENFit connector (1)

In the event of contamination or defects of the connector, all upper parts must be replaced, since the sealing function is no longer given. The repair kit contains the required parts for all variants.

1

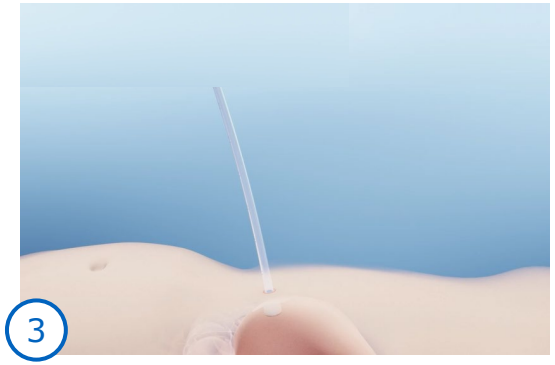
Wash and dry hands.

Have the PEG repair kit ready. It contains a new plate, clamp and connector.

2

Close the clamp. Cut the tube close to the connector. In this way, no reflux of stomach fluids can occur.

Clean the tube end inside and outside with disinfection to make them free of fat and dirt. The tube end must be dry afterwards.



3

Optional: If the clamp and/ or the outer plate are damaged or not cleanable, remove it/ them.

Work at pace and keep the tube end closed if possible to avoid gastric juice leakage.

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Recommendations for clinical practice

How do I correctly replace the ENFit connector or other parts?

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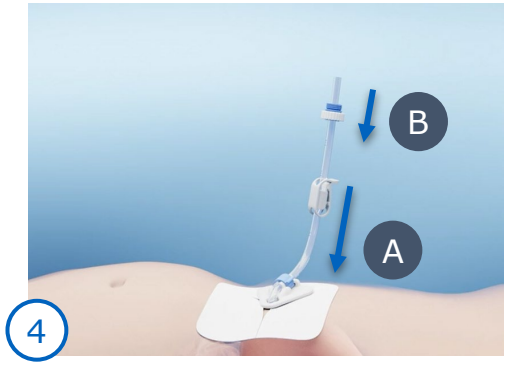
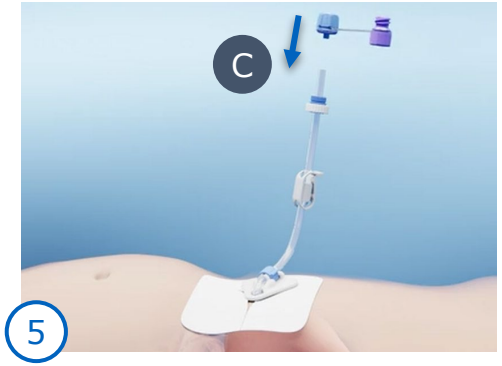
Replacing the old ENFit connector (2)



4

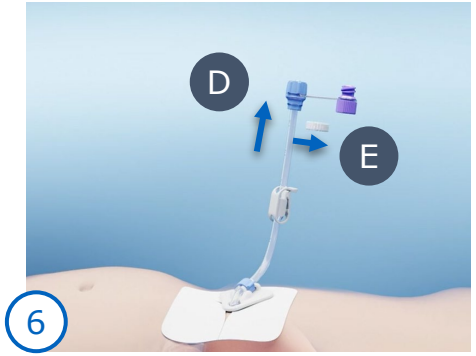
If removed put on the new plate and/ or the clamp **(A)** and close it immediately.

Then put on the fixing screw **(B)**.



5

Push the pin of the connector **(C)** into the tube end as far as possible.



6

Screw the connector together with the fixing screw **(D)**.

Remove the screw aid (outer white ring) **(E)**.

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Tube occlusion
Better prevent it

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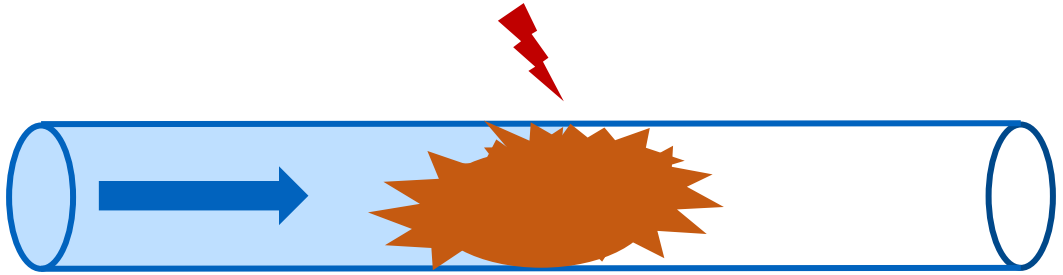

- Common complication
- Main cause: Application of medication

Prevention

- Flush with water
- Minimize repeated gastric residual aspiration: pH < 4 can promote protein coagulation
- Flush before and after medication or bulking agents
- Don’t apply alcoholic drinks over your tube
- Massage the tube to break up a clog

Tube occlusion is best to be prevented by thorough care and flushing – flush, flush, flush.

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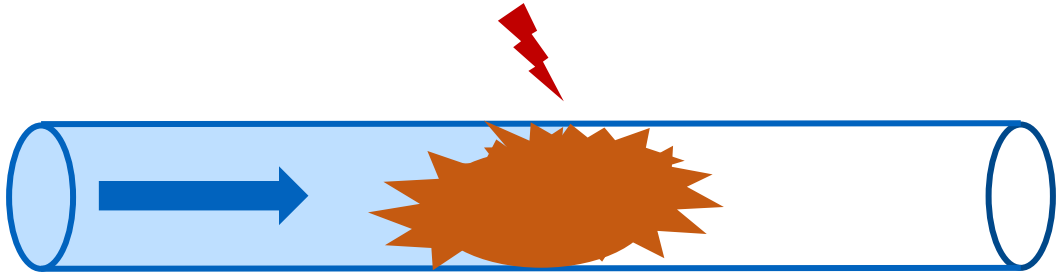
Tube occlusion
What you can do about it

- Double check that the tube is not kinked and all clamps are open
- Flush tube with a 60 ml syringe and only slight pressure
- Administer sparkling water and close the clamp and let it soak for 15 min
- If the tube occlusion remains, contact the physician for the next steps



Do not use sharp devices or a guide wire to unclog the tube. This can injure the patient or damage the material.

Do not apply additional pressure.

Do not use small volume syringes.

If the tube occlusion remains, contact the physician. The PEG might need to get replaced.

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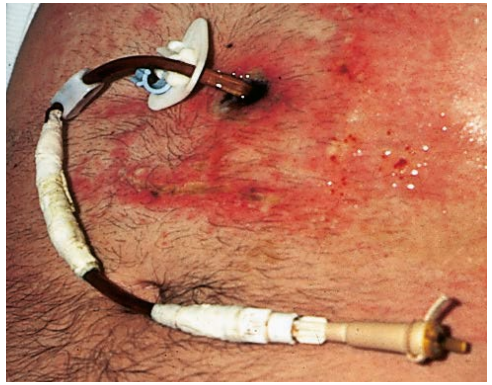
Material defects
How shall I deal with them?

Inspection	Possible cause	Treatment
Tube swollen, lumen enlarged	Regular application of high-proof alcohol	Flush thoroughly with 20 ml water after applying alcohol via ENFit syringe Apply less high-proof alcohol, if possible (beer, wine) PEG-replacement or switch to button or GastroTube
Tube swollen, lumen enlarged or brittle	Use of ointment, especially with polyvidone-iodine complex	Ointments should be used only if strictly indicated and only for limited periods of time. The application of ointments in the wound area causes the probe material to swell and become brittle Products which contain polyvidone/ iodine complex should be avoided where possible. If the use polyvidone-iodine is indicated, only use tincture and for a limited time PEG-replacement or switch to button or GastroTube

Damaged tube in situ

Material defects
How shall I deal with them?

Issue	Cause	Treatment
Tube defective, torn, broken	Clamp is closed always at same position Clamp is kept close even after disconnecting the ENFit connection	Adjust position of clamp regularly Position clamp close to connector so that tube can be shortened if needed and otherwise the defect part cannot be cut off Remove external attachments (clamps etc.), shorten tube, clean tube, apply new clamps from repair kit
Tube torn off, burst (frayed tube endings)	Tube occlusion due to incorrect care and attempt to unblock tube by using a small syringe	Flush tube before and after applying feed or medication with ≥ 20 ml water Shorten tube PEG-replacement or switch to button or GastroTube



Material defects

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PEG Handling & Troubleshooting
Wrap-up

Pay attention to frequently flushing the tube to prevent tube occlusion.

Carefully handle an occluded tube and apply only slight pressure.

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Long-term care

Medical complications

B

- Frequent complications ›
- Troubleshooting ›
- Stoma infection ›
- Hypergranulation ›
- Buried-bumper-syndrome ›
- PEG dislocation ›

A good care makes the difference
Identify medical complications early

With a good after care in place, no bigger complications should be expected for your patient. Complications vary a lot between patients and also depend on the patient's general condition.

The PEG is designed to serve its purpose stably and reliably.
The medical complications described in this chapter can occur with any kind of PEG and it is important to identify them early on.

Stoma care
Overview frequent complications

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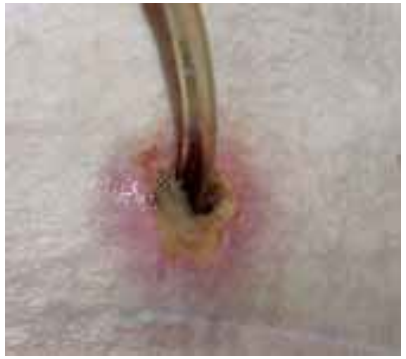
What to do when you encounter the following complications

Complication	Possible action
Encrusted dressing	Remove with 0.9 % saline solution
Residual tape	▪ Remove with disinfection spray ▪ In special cases with surgical spirit but only on intact skin
Signs of inflammation	▪ 2x daily change of dressing with regular stoma inspections ▪ Possible swab if prescribed by doctor ▪ Severe cases: Systemic antibiotic treatment
Severe discharge	▪ Keep stoma dry ▪ Change dressing several times daily ▪ Never apply ointment on a PEG stoma! ▪ Never apply ointment on an inflammation PEG stoma!
Overgranulation tissue	Remove to avoid complications by surgery or cautery: Silver nitrate



Infection of the stoma

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Troubleshooting
Stoma complications cheat sheet 1/3

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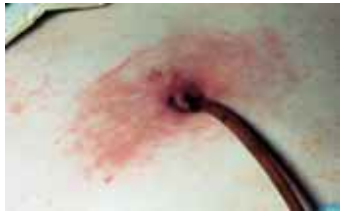
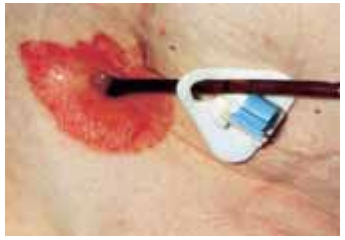
Picture	Symptoms	Cause	Treatment
	**Stoma painful and red**	Moist chamber, dressing change not often enough, usage of ointments at punctuation site, incorrect fixation	Stoma swab Documentation: Mark infection or take photo Sterile, dry dressing as per standard Frequent check-up of stoma and fixation
	**Stoma red, itchy, scaly skin, clearly distinguishable stoma area**	Fungal infection	Stoma swab Antimycotics

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Troubleshooting
Stoma complications cheat sheet 2/3

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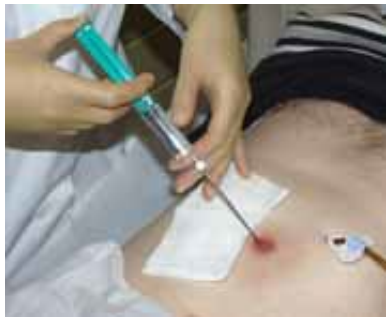
Symptoms	Cause	Treatment
Stoma secretion, clear	Punctuation too big Too much room between internal and external plate	Change dressing 3-4 times per day Keep stoma dry Tamponade stoma tract if needed Keep PEG fixation moderately tight (until the resistance of internal fixation plate) Fixate tube in external plate and place Y-compresses Protect not infected skin
Stoma secretion, purulent	See above and progressing infection	See above and Flush stoma and necrotic cavities with saline solution or lukewarm water  Frequent check-up of stoma and fixation, at least 1/day Apply intestinale tube to relieve stomach

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Troubleshooting
Stoma complications cheat sheet 3/3

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Symptoms	Cause	Treatment
Leakage of feed or gastric acid 	Punctuation too big Too much room between internal and external plate Skin damage	Clean and disinfect stoma, tamponade it if needed Dry sterile dressing; change as needed Keep PEG fixation moderately tight (until the resistance of internal fixation plate) Use Y-compresses generously Apply intestinale tube to relieve stomach Protect not infected skin Medication to facilitate gastric emptying
Extensive and painful stoma, painful abdominal wall, overheating, elevated temperature or fever 	Abscess, phlegmon, generalized infection	Immediately consult physician, endoscopy

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Troubleshooting
What shall I do when my patient gets worse?

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Symptoms	Cause	Treatment
Diffuse, general abdominal pain; pain when administering feed 	Dislocation and peritonitis	Immediately stop feeding Check tube positioning Examination by physician as soon as possible
Deterioration of patient responsiveness, clouding of consciousness 	Too little fluid intake Underlying diseases, e.g. diabetes perforation, tube dislocation	Check fluid requirement Check blood glucose level Examination by physician as soon as possible

Caution: In case of acute pain or raised temperature immediately inform the treating physician, stop nutrition and liquid supply.

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Local stoma infection
How do I notice stoma infection?

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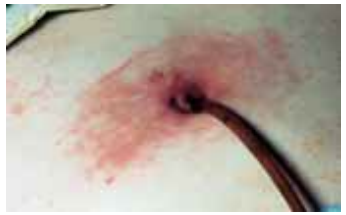
Infection symptoms

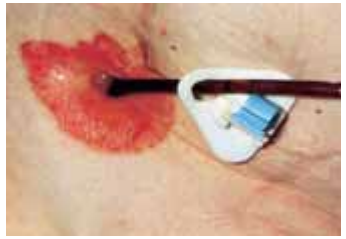
- Redness
- Swelling (oedema)
- Overheating
- Pain
- Secretion: first watery, then purulent
- Widening of the stoma tract



Infection with blurred redness

Fungal infections

- Itching
- Scaly skin
- Pain and swelling rarely
- Infection more clearly limited



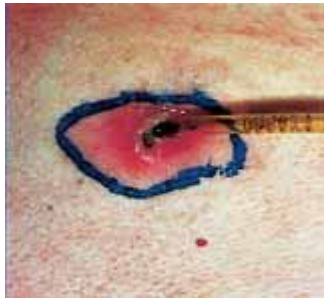
Typical fungal infection

Diagnosis

- Visual assessment and palpation by finger to identify the subcutaneous swelling
- Perform a stoma swab to identify bacterial or fungal infection

Documentation

- Document thoroughly
- Include a size comparison in photos (coin or centimetre measure)
- To capture changes quickly, highlight the dimensions of the affected area with a permanent marker (surgical pen)



Outlined infection

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Local stoma infection
How do I treat it?

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Treatment

- Daily change of dressing according to standards
- Keep stoma sterile and dry
- Extensive infections: Gently rinse stoma with warm water. Let dry completely
- Apply disinfectant and swab stoma with povidone-iodine (PVP-I) solution, but Protect tube from contact with PVP-I
- Do not use ointments
- Overheating, tension, pain:
  - Locally cooling with ice or cooling pad
  - Omit direct skin contact
  - Limit therapy to 10-15 min
- Confirmed fungal infection: Antimycotics

PVP-I, alcoholic solutions containing Phenoxyethanole or Isopropanol (such as Octenisept) and ointments can damage the tube material and should be avoided!

Change dressing daily and check for extensive or fungal infections.

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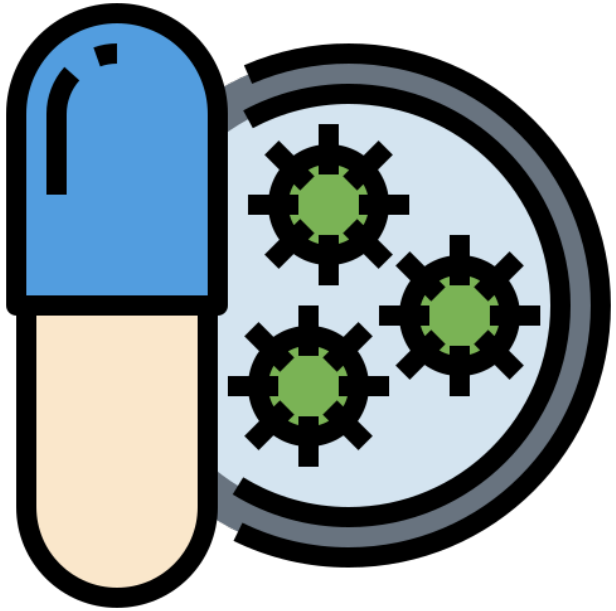
Dos and Don’ts
In case of an infected stoma



Local antibiosis

- No scientific proof of benefit in PEG patients, not indicated
- But may lead to a moist chamber
- May support the development of resistant bacteria

Systemic antibiosis

- Treat local infections locally not systemically
- Exception: Critical patients, highly immunocompromised patients, fever

Abscess

- No antibiosis
- Transfer patient to surgery
- Consider to switch to an exchange system, preferable a Button or GastroTube

Check the application of antibiotics carefully with the medical advisor!

Wound infection - stoma too wide
How do I treat it?

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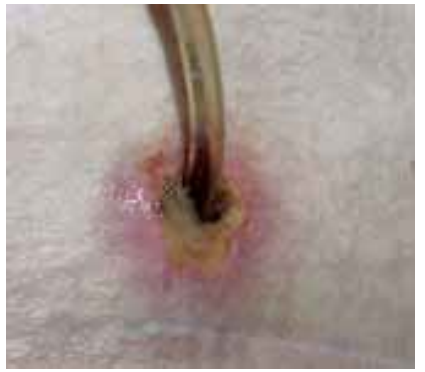
Causes

- Too big puncture when PEG was placed
- Persistent infection in stoma tract
- Fixation of internal and external plates too loose, continuous moving of the tube



Infection due to too wide stoma

Treatment

- Flush stoma tract and necrotic cavities regularly with isotonic saline solution (use a syringe or irrigation cannula)
- To keep stoma dry and facilitate granulation, gauze tamponade can be applied
- With every dressing change, flush stoma and exchange tamponade

Flush stoma and keep the stoma dry, use tamponade if necessary.

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Hypergranulation
How do I treat it?

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Description
Benign, painless formation of new tissue
Complications: Bleeding when touched, skin irregularities can cause tube leakage

Cause
Not clear, a cause could be a too tight fixation

Treatment:
- Treat with silver nitrate pin. Remind and motivate patient to apply regularly
- Do not bring the tube in contact with silver nitrate pin
- Severe cases: Switch to button tube or use argon plasma coagulation

Hypergranulation tissue with PEG

Buried-bumper-syndrome
What is it?

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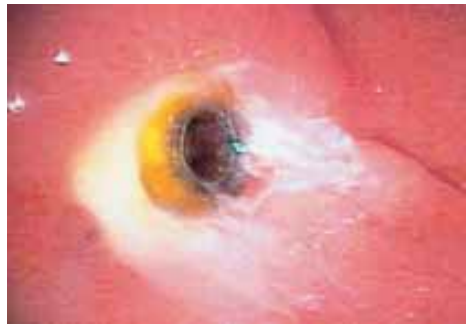
Description
Mucosa is proliferating over the internal plate and blocks the tube

Cause
PEG fixation too tight without frequent relaxation, tube is not mobilized regularly; maintenance failure

Symptoms
- Tube is blocked
- Repeated pressure alarm when using pumps
- You cannot move the tube inwards or rotate it

Prevention!
- Move the PEG in the first week daily
- Move the PEG at least 2–3 times per week, even if not in use

Treatment
- By experienced endoscopic expert
- Surgical removal of PEG: Requires aftercare



Clear overgrowth of the internal plate through the gastric mucosa

PEG dislocation during long-term care
What shall I do?

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If the PEG dislocates during long-term care when the stoma is already healed, quickly consult the physician, as the stoma may close within one day.

Quickly consult the physician!

Stoma may close within one day!

Cause: Pulling of tube

Symptoms

- Impaired or impossible application of nutrition
- Pain
- Pain when applying food
- Tight, pressure sensitive abdominal wall
- Elevated temperature to high fever
- gastro-intestinal impediments

Important: My symptoms can be easily overlooked in case I am an elderly or non-responsive patient!

If you suspect a PEG dislocation inform the physician immediately to confirm.

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Medical complications
Wrap-up

Carefully examine the stoma to identify complications the sooner the better.

Remember to document complications thoroughly.

Also remember the rare complications to detect them if necessary.

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