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КАФЕДРА ПРОПЕДВТИКИ ВНУТРЕННИХ БОЛЕЗНЕЙ

**УХОД ЗА КОЖЕЙ  
И СЛИЗИСТЫМИ ОБОЛОЧКАМИ.  
ПРОФИЛАКТИКА ПРОЛЕЖНЕЙ**

**CARE OF THE SKIN AND MUCOUS.  
PREVENTION OF BEDSORES**

Учебно-методическое пособие



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Содержит информацию по уходу за кожей и слизистыми оболочками, профилактике пролежней у пациентов с дефицитом самообслуживания.

Предназначено для студентов 2-го курса медицинского факультета иностранных учащихся, обучающихся по специальности «Лечебное дело» на английском языке в рамках дисциплины «Медицинский уход и манипуляционная техника».

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ПРОФИЛАКТИКА ПРОЛЕЖНЕЙ**

**CARE OF THE SKIN AND MUCOUS. PREVENTION OF BEDSORES**

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На английском языке

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## MOTIVATIONAL CHARACTERISTICS OF THE TOPIC

**Total class time:** 3 academic hours for Medical Faculty of International Students.

The effectiveness of treatment often depends on proper medical care. This is especially important for patients with self-care deficits and movement disorders. Such patients include those in intensive care units, those recovering from reconstructive joint or bone surgery, and those who have suffered a stroke. Maintaining healthy skin, soft tissues, and mucous membranes is crucial for protecting the body's internal structures from the environment and potential pathogens.

Care for the eyes, nose, ears, mouth, face, hair, and nails not only helps prevent infections but also contributes to the patient's psychological well-being. The ability to listen and empathize are also important factors in successful treatment.

This material focuses on the most severe cases and provides an overview of the training of staff caring for bedridden patients..

**The purpose of the class** is to acquaint students with the basic skin, hair, nail, mucous hygienic procedures.

### **Class objectives:**

1. To motivate students to provide adequate skin and mucous membrane care to therapeutic patients.

2. To teach students the appropriate style of communication during patient hygiene care.

3. To familiarize students with the main hygiene procedures.

4. To describe and teach medical students the main principles of hair care.

5. To familiarize students with the main principles of fingernail and toenail care.

6. To study the stages of sanitary and hygienic processing of patients.

7. To familiarize students with the signs of pediculosis and the treatment of patients with pediculosis.

8. To study disinfection solutions.

9. To familiarize students with the transportation of patients with self-care deficits.

10. To define and describe the stages of bedsores.

11. To teach methods of bedsores prevention and treatment.

**Requirements for the initial level of knowledge.** To master the topic, students should review from the following courses:

1. Human anatomy — anatomy of the skin and mucous membranes, general characteristics of the skeletal and articular system.

2. Normal physiology — physiology of metabolism, blood pressure in different parts of the vascular system, the effect of gravity on blood flow.

## HAIR CARE

Nurses brush the hair of bedridden patients twice a day. Each patient should have their own comb. Shampoo or other special hair care products should be used to wash hair as needed, but at least once a week. Dry shampoo can be used for daily care, but it is not a substitute for washing hair. Hair should be cut when necessary.

Motivation:

– To improve the patient's appearance for themselves, caregivers, and other patients.

– To keep hair clean and dry.

– To promote blood circulation to the hair roots on the scalp.

– To prevent the spread of nosocomial infections.

Equipment:

– Jug and basin (or inflatable basin).

– Warm water (37 °C).

– Personal towel.

– Cotton balls.

– Shampoo or other hair care product (Fig. 1).

– Apron, hand sanitizer, non-sterile gloves.

– Hairbrush.

Precautions:

– Keep the patient warm at all times.

– Check the scalp and surrounding skin for pressure sores and underlying skin conditions.

Procedure:

1. Gather all necessary items and place them on the bedside table.

2. Inform the patient about the procedure.

3. Drape a towel around the patient's body.

4. Put on an apron and perform hand hygiene using antiseptic solution. Wear non-sterile gloves.

5. Assist the patient into a comfortable position, either sitting or lying down (Fig. 2).

6. Place the basin (Fig. 3) or inflatable basin (Fig. 4) under the patient's shoulders, keeping their head down.

7. Plug the patient's ears with cotton balls.

8. Moisten the hair with water over the basin using a jug.

9. Apply a small amount of shampoo to the patient's hair and wash with both hands, gently massaging the scalp.

10. Rinse away all shampoo. Repeat shampooing if necessary.

11. Raise the patient's head, wipe the scalp with a towel, and dry the hair. Remove the basin.

12. Gently comb the hair using a hairbrush (short hair — from roots to ends, long hair — strands from ends to roots).

13. Cover the patient's head with a towel until the hair is completely dry.
14. Remove gloves and apron.
15. Wash hands with soap and dry them with a personal towel.
16. Document the procedure, including any abnormal findings.
17. Disinfect all equipment.



*Fig. 1. Shampoo cap*



*Fig. 2. Position of the patient*



*Fig. 3. Basin*



*Fig. 4. Inflatable basin 1*

## EXAMINATION OF A PATIENT FOR PEDICULOSIS AND TREATMENT OF PEDICULOSIS

Upon admission to the hospital, patients should be examined for scabies, microsporia, pediculosis, and questioned about teniasis.

Areas of focus during examination (Fig. 5):

- Head: temporo-occipital region.
- Body: armpits, groin, interdigital spaces, lower abdomen.
- Clothing and linens: seams, folds, collars, belts.



*Fig. 5. Pediculosis cases*

### LICE

Lice are obligate parasites, meaning they cannot survive without a host. They complete their entire life cycle on the human body and do not have a free-living stage. Lice are transmitted through direct skin-to-skin contact or through contact with contaminated objects, such as clothing or bedding. Symptoms of lice infestation typically do not appear for 3 to 4 weeks after infestation.

There are three types of lice that parasitize humans (Fig. 6):

- Head lice (*Pediculus humanus capitis*): these lice are found on the scalp and hair.



*Fig. 6. Head lice*

- Pubic lice (*Pthirus pubis*): these lice are found on the pubic area and other coarse body hair.
- Body lice (*Pediculus humanus corporis*): these lice live on clothing and crawl onto the body to feed.

## **DESINSECTION**

Desinsection, derived from the Latin words “des” meaning destruction and “insectum” meaning insect, is the process of eliminating lice at any stage of development, including eggs, larvae, and adult lice. Desinsection is necessary to prevent the spread of lice infestation.

## **PEDICULOSIS TREATMENT**

Historically, head lice have been removed by hand, by shaving affected areas, or by physical removal with a lice comb. Wet combing involves moistening the hair and combing the hair from root to tip with a lice comb.

Pharmacological treatment of lice focuses on two mechanisms: neurotoxicity, which results in the paralysis of the louse, and suffocation of the louse due to topical application. It is important to note that available treatments kill lice but do not reliably destroy eggs. Repeat treatment is often required for complete eradication. A second treatment 7 to 10 days after the initial treatment is typically sufficient to eradicate most nonresistant lice.

Equipment:

- Bags for collecting patient’s clothing (cloth and oilcloth).
- A medical gown, a waterproof apron, gloves, a mask, a medical cup.
- Scissors, a trimmer, disposable razor, a fine-toothed comb.
- Cotton swabs.
- Shampoo, personal towel.
- Vinegar (6 % solution, warmed to 30 °C).
- Disinfestation solutions (5 % permethrin solution)
- Marked container for room disinfestation.
- Magnifying glass.
- White paper.
- Well-ventilated area.

Procedure:

1. Wash hair with shampoo and towel dry before using the disinfestation solution.
2. Cover a couch with oilcloth.
3. Ask the patient to sit on the couch and cover their shoulders with oilcloth.
4. Apply 5 % permethrin solution to the patient’s hair using a cotton swab (about 25 ml for short hair, 50–60 ml for long hair).
5. After 30–45 minutes of application, wash the hair with warm water, then rinse the hair with warm 6 % vinegar solution and dry the hair.

6. Tilt the patient's head over a sheet of white paper and start combing the hair with a fine-toothed comb.
7. Examine the patient's hair again.
8. Disinfect and dispose of cut hair (if necessary) and white paper according to the virucidal regimen.
9. Do not wash hair with shampoo for three days after hair treatment.
10. Place the patient's personal clothing in a cloth bag, then inside an oilcloth bag, which is sprayed from the outside with a pediculicide and sent to chamber disinfection.
11. After treating the patient, the caregiver should perform room disinfection and the patient should be treated again. After exposure, the remains of the pediculicide should be removed from the treated objects and surfaces by wet cleaning. The room should be thoroughly aired after disinfection.
12. Patients with pediculosis should be placed under special observation and subjected to retreatment in the department if necessary when washing and changing linen.
13. Record the procedure and the patient's reaction to it.

### **CARE FOR THE PATIENT'S FACE**

Nurses assist patients on bed rest with their morning toilet.

Equipment:

- Oilcloth.
- Basin.
- Jar.
- Soap.
- Towel.
- Warm water.

Procedure:

1. Place the basin on a chair beside the bed.
2. Turn the patient on their side or sit them on the edge of the bed, if there are no contraindications.
3. Place a piece of oilcloth on the edge of the bed or on the patient's knees (if they are sitting).
4. Give the patient soap.
5. Pour warm water from a jar onto the patient's hands from a basin until they have finished washing. (Instead of a jar, you can use a kettle specially designated for this purpose and marked "To wash patients.")
6. Give the patient a towel.
7. Remove the basin, oilcloth, and towel.
8. Make the patient comfortable in bed.

Some patients cannot wash themselves with the help of others. In this case, the nurse washes the patient herself.



Procedure:

1. Wash hands and put on gloves.
2. Moisten a wipe or sponge in warm water, poured into the basin (you can use the end of the towel).
3. Wash the patient's face, neck, and hands with a sponge or gloves, working from top to bottom.
4. Gently dry the skin with a towel, patting it dry.
5. Remove gloves and wash hands.

### CARE FOR EYES

Equipment:

- Soap, sterile gloves, and a brush.
- Sterile gauze tampons and sterile napkins.
- Antiseptic solution (0.02 % furacilin solution or 2 % sodium bicarbonate solution).
- A sterile tray, sterile forceps, and a tray for used items.

Procedure (Fig. 7):

1. Wash hands with soap and a brush.
2. Put on sterile gloves.
3. Place 8–10 tampons in a sterile tray and wet them with antiseptic solution.
4. Take one tampon and wipe the eyelashes and eyelids from the outer to the inner corner of the eye.
5. Repeat wiping 5 times, using a different tampon each time.
6. Remove any remaining antiseptic solution with dry tampons.
7. Disinfect all used materials.
8. Remove gloves, wash and dry your hands.
9. Document the procedure and the patient's reaction to it.



*Fig. 7.*

### CARE FOR THE NASAL CAVITY

Equipment:

- Gloves.
- Gauze rolls, cotton balls.
- Vaseline or glycerin.

Procedure:

1. Wash hands with soap and a brush.
2. Put on sterile gloves.
3. Remove mucus from the nasal cavity using cotton balls.
4. Moisten gauze rolls with vaseline or glycerin.
5. Insert the gauze roll into the patient's nasal passage and leave it for 2–3 minutes.

6. Remove the gauze roll with crusts using rotational movements.
7. Repeat the procedure with the other nasal passage.
8. Disinfect all used materials.
9. Remove gloves, wash and dry your hands.
10. Document the procedure and the patient's reaction to it.

### **CARE FOR THE EARS**

Patients with self-care deficits should clean their outer ear canals once a week.

Contraindications: inflammatory processes in the auricle or external auditory canal.

Remember: do not use hard or sharp instruments to avoid damaging the eardrum.

Equipment:

- Non-sterile gloves, pipette.
- 3 % hydrogen peroxide solution.
- Soap solution.
- Disposable (individual) towel.
- Cotton rolls, gauze wipes.
- 2 trays.

Procedure:

1. Put on gloves to perform hand hygiene.
2. Place a disposable (individual) towel under the patient's head.
3. Moisten gauze wipes with soap solution, wipe the auricle and the skin behind it carefully. Rinse this area with warm water and dry it.
4. Tilt the patient's head to the opposite side, pull the auricle back and up, and drip a few drops of 3 % hydrogen peroxide solution into the patient's ear.
5. Hold the patient in this position for 3–5 minutes.
6. Insert a cotton roll into the ear canal using rotational movements and clean it.
7. Repeat this procedure with the other ear.
8. Disinfect all used materials.
9. Remove gloves, wash and dry your hands.
10. Document the procedure and the patient's reaction to it.

### **CARE FOR THE ORAL CAVITY AND TEETH**

Patients should brush their teeth regularly at least 2 times a day and rinse their mouth after each meal.

Equipment:

- Spatula.
- Cotton ball.
- Tweezers.
- Antiseptic solution (2 % sodium bicarbonate solution).
- Gloves.

- Sterile gauze wipes.
- Container with disinfectant solution.
- Janet syringe.
- Oilcloth.
- Kidney-shaped tray.
- Waste tray.

**Procedure:**

1. Explain the purpose of the procedure to the patient.
2. Wash your hands with soap and water, dry them with an individual towel, and put on gloves.
3. Position the patient in a semi-sitting position with their head tilted slightly forward or turn their head to the side if the patient is lying down.
4. Cover the patient's neck and chest with oilcloth.
5. Ask the patient to open their mouth. If the patient has removable dentures, remove them, thoroughly wash them on all sides, and wipe them dry. Do not keep dentures in a glass of water. Microbes present on the surface of the prosthesis are well preserved in a humid environment.
6. Wrap the end of the tongue with a sterile gauze wipe and pull it out of the mouth with your left hand.
7. With your right hand, use your tweezers to take a cotton ball, moisten it with antiseptic solution, and remove the coating from the surface of the tongue.
8. Release the tongue, change the cotton ball, and rub the teeth from the inside and outside, especially at the neck. When rubbing the upper molars, you need to pull the cheeks with a spatula to avoid infecting the excretory duct of the parotid gland. For the same reason, do not wipe the mucous membrane of the cheeks.
9. Ask the patient to rinse their mouth with warm boiled water. If the patient is unable to rinse their mouth, use a Janet syringe to rinse their mouth.
10. Disinfect all used materials.
11. Remove gloves, wash and dry your hands.
12. Document the procedure and the patient's reaction to it.

## **PATIENT NAIL CARE**

**Equipment:**

- Container with warm water and soap.
- Hand cream.
- Scissors, nail clipper (Fig. 8), nail file, nail brush.
- Trays.
- Towel.
- Gloves.

**Procedure:**

1. Explain the purpose of the procedure to the patient, obtain their consent, and explain the sequence of actions.



*Fig. 8. Nail clipper*

2. Shield the patient with a screen.
3. Wash your hands with soap and water, dry them with an individual towel, and put on gloves.
4. Add a small amount of liquid or regular soap to the container with warm water and immerse the patient's hand in the water for 2–3 minutes.
5. Remove the fingers from the water one at a time, wipe them dry, and gently trim the nails, leaving 1–2 mm of the outer edge of the nail plate. File the nails, clean them with a nail brush, rinse the brush, and wipe the nails dry.
6. Repeat this procedure with the other hand.
7. Immerse the patient's foot in a container with warm water and soap for 3–5 minutes. Treat the toenails in the same way as the fingernails. File the nails, rinse the foot, wipe it dry, and apply a softening cream to the dry skin of the hands and feet.
8. Disinfect all used materials.
9. Remove gloves, wash and dry your hands.
10. Document the procedure and the patient's reaction to it.

## APPLICATION OF VESSEL AND URINALS

### APPLYING A BEDPAN

#### Equipment:

- a set of clean bedclothes (gown, cap, mask), apron, gloves;
- screen;
- oilcloth;
- enamel or rubber vessel (Fig. 9);
- jug with a weak solution of potassium permanganate heated to 37 °C;
- three gauze napkins, forceps, containers with disinfectant solutions.



*Fig. 9. A rubber vessel*

#### Procedure:

1. Explain the purpose of the procedure to the patient, obtain their consent, and explain the sequence of actions.
2. Put on clean patient clothing, an apron, and gloves.
3. Shield the patient with a screen.
4. Rinse the bedpan with warm water and leave a small amount of water in it.
5. Ask the patient to bend their knees.
6. With one hand, help the patient raise their pelvis. With the other hand, place an oilcloth underneath the patient's buttocks and lower their pelvis.
7. Cover the patient and leave them alone for 5–10 minutes.
8. After the patient has defecated or urinated, wash them, carefully clean their perineum and anus, and rinse the bedpan with hot water.
9. Remove the bedpan and oilcloth from under the patient.
10. Position the patient comfortably and cover them with a blanket.
11. Remove the screen.

12. Cover the bedpan with a lid and take it to the toilet. Pour the contents of the bedpan into the toilet, examine the bedpan, and soak it in a container with disinfectant solution.

13. Clean the apron and wipe down the oilcloth with a cloth moistened with disinfectant solution.

14. Disinfect all used materials.

15. Remove the clean patient clothing and gloves, wash your hands thoroughly, and dry them.

16. Document the procedure and the patient's reaction to it.

### APPLICATION OF URINAL

Urine receivers (*urinals*) (Fig. 10, 11) are used when it is necessary to empty the bladder when self-service or bed rest is limited. When giving the urinal, remember that not all patients can freely urinate while lying in bed, so the urinal must be necessarily warm. To do this, the urinal should be rinsed with warm water before serving. After urinating, pour the contents into the toilet, clean the urinal with warm water and disinfect.



Fig. 10. Urinal for men



Fig. 11. Urinal for women

### PRESSURE ULCER PREVENTION

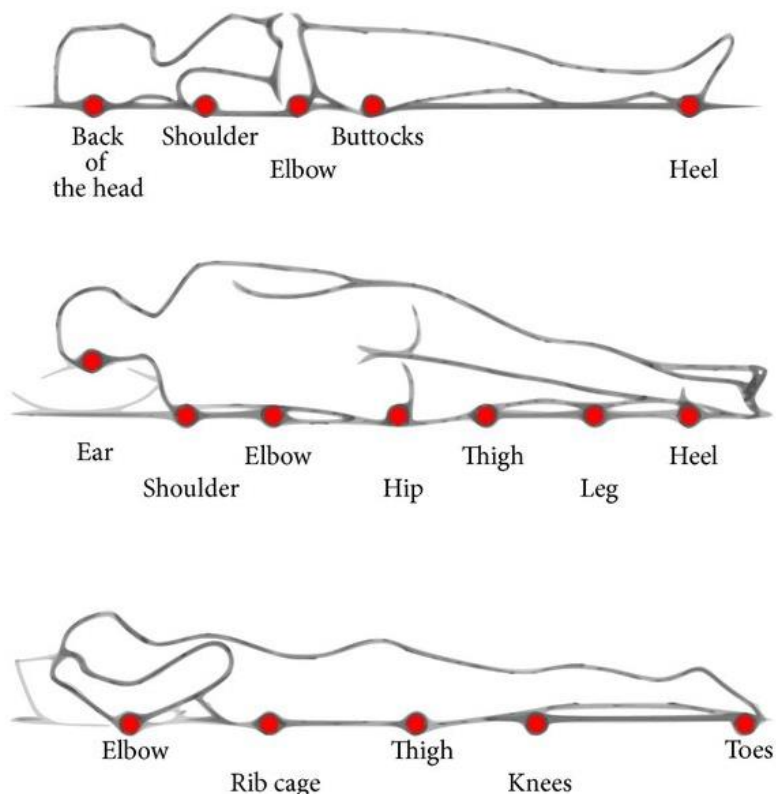
A pressure ulcer, also known as a bedsore or decubitus ulcer, is a localized area of cell damage caused by impaired microcirculation and the resulting hypoxia induced by pressure. Bedsores are lesions caused by a combination of factors, including:

- Unrelieved pressure.
- Friction.
- Humidity.
- Shearing forces.
- Temperature.
- Age.
- Continence and medication.

They can develop on any part of the body, especially over bony areas.

When the pressure intensity on the tissue exceeds the normal blood pressure in the capillaries, blood flow to the area is disrupted. Irreversible changes in cells and tissues can begin to occur after just two hours of impaired microcirculation.

Tissues with minimal muscle padding, such as the sacrum, heel bone, shoulder blades, and occipital area, are particularly vulnerable to damage (Fig. 12).



*Fig. 12.* Localisation of bedsores

### **ANTI-BEDSORE MATTRESSES**

An anti-bedsores mattress (Fig. 13) is designed to provide relief from bedsores and ulcers caused by prolonged bed rest. It is equipped with up to 130 individually heat-sealed air bubbles for even weight distribution and superior support.



*Fig. 13.* Anti-bedsores mattress

The mattress is designed to be placed on top of a regular bed mattress. It has air-filled channels that inflate and deflate alternately, keeping pressure off certain areas and allowing blood flow to reach different parts of the body of immobilized

or weak patients who cannot shift their weight frequently. A variable pressure dial allows for precise airflow control, promoting restful sleep. The alternating pressure mattress helps relieve pain from sore spots, pressure points, and pressure ulcers.

### STAGES OF BEDSORES

All stages of bedsores are on the Fig. 14.

Stage 1:

- Appearance: non-blanchable erythema (redness) of the skin.
- Tissue involvement: epidermal involvement only.
- Reversibility: reversible with pressure relief.
- Healing time: unknown.

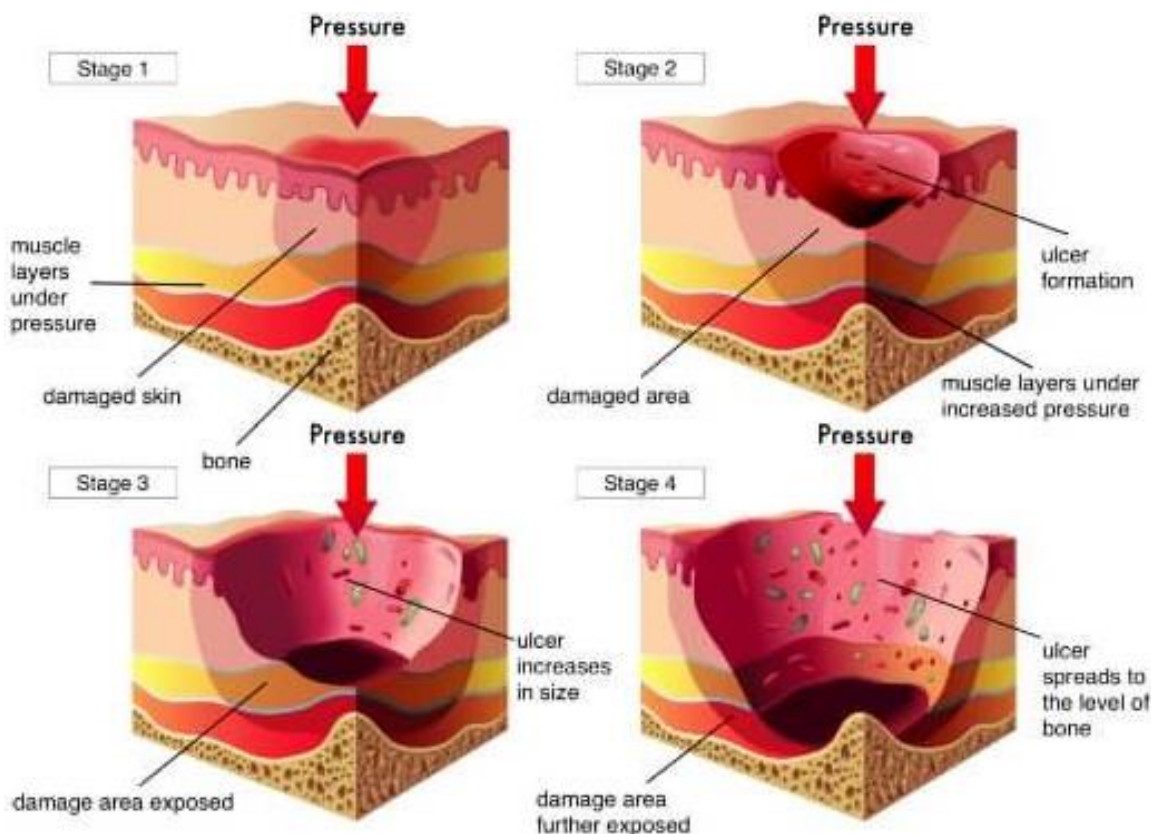


Fig. 14. Stages of bedsores

Stage 2:

- Appearance: shallow open wound with partial thickness loss of skin (epidermis and dermis).
- Pain: swollen and painful.
- Healing time: several weeks to heal with pressure relief.

Stage 3:

- Tissue involvement: full thickness skin loss with involvement of subcutaneous tissue.
- Pain: may or may not be painful.
- Drainage: may have foul-smelling drainage.
- Healing time: several months to heal with pressure relief.

Stage 4:

- Extent of damage: extensive damage to underlying structures, including tendons, muscles, and bones.
- Appearance: wound may appear smaller on the surface but have extensive tunneling underneath.
- Drainage: foul-smelling drainage.
- Healing time: months or years to heal, may require surgical intervention.

### MEASURES FOR BED SORE PREVENTION

Turn the patient every 1.5–2 hours.

Smooth out wrinkles on the bed and sheets.

Cleanse the patient’s skin with a disinfectant solution.

Change wet or soiled linen immediately.



Fig. 15. Rubber circle

Use rubber rings (Fig. 15) placed in a cover or covered by a diaper.

Wash patients promptly.

In case of localized redness, wipe the affected area twice a day with a 10 % camphor solution or a damp towel. Additionally, irradiate the area with a quartz lamp. If bedsores have formed, apply a 5 % potassium permanganate solution to the affected area and dress the wound with Vishnevsky’s ointment or a similar dressing.

### RISK ASSESSMENT OF BEDSORES (WATERLOW SCALE)

<p><b>Weight/size relationship:</b></p> <p>0. Standard 1. Above standards 2. Obese 3. Below standards</p>	<p><b>Skin type and visual aspect of risk areas:</b></p> <p>0. Healthy 1. Frail 1. Dry 2. Edematous 1. Cold and humid 2. Alterations in color 3. Wounded</p>	<p><b>Sex/Age:</b></p> <p>1. Male 2. female 1. 14–49 years 2. 50–64 years 3. 65–74 years 4. 75–80 years 5. Over 81 years</p>	<p><b>Special risks:</b></p> <p><b>Tissue malnutrition:</b> 8. Terminal/cachexia 5. Cardiac insufficiency 6. Peripheral vascular insufficiency 2. Anemia 1. Smoker</p>
<p><b>Continence:</b></p> <p>0. Complete, urine catheter 1. Occasional incontinence 2. Urine catheter/fecal incontinence 3. Double incontinence</p>	<p><b>Mobility:</b></p> <p>0. Complete 1. Restless 2. Apathy 3. Restricted 4. Inert 5. On chair</p>	<p><b>Appetite:</b></p> <p>0. Normal 1. Scarce/feeding tube 2. Liquid intravenous 3. Anorexia/Absolute diet</p>	<p><b>Neurological deficit:</b></p> <p>5. Diabetes, paraplegic, ACV</p> <p><b>Surgery:</b></p> <p>5. Orthopedic surgery below waist 5. Over 2 hours in surgery</p> <p><b>Medication:</b></p> <p>4. Steroids, cytotoxics, anti-inflammatory drugs in elevated dosage</p>

Fig. 16. Waterlow scale



Scoring of Waterlow scale (Fig. 16):

- over 10 points — at risk;
- over 16 points — high risk;
- over 20 points — very high risk.

## **CHANGING BED LINENS AND UNDERWEAR FOR A PATIENT WITH SELF-CARE DEFICIENCIES AND ACTIVE MOVEMENT LIMITATIONS**

Linen Change Frequency: regularly change bed linens, at least once every seven days. Replace linens contaminated with patient secretions immediately.

### **CHANGING BED LINENS**

Method 1 (Strict Bed Rest) (Fig. 17):

- Put on clean patient clothing.
- Roll a clean sheet lengthwise.
- Lift the patient's upper torso and remove the pillows.
- Using a rolling motion, remove the dirty sheet from the head to the waist.
- Place the clean sheet on the exposed part of the bed, unrolling it from the head of the bed.
- Lower the patient's upper torso.
- Lift the patient's pelvis, then their legs. Remove the dirty sheet.
- Smooth out the clean sheet.
- Lower the patient's pelvis and legs. Tuck the edges of the sheet under the mattress.
- Change the pillowcases. Lift the patient's head, place the pillows, and lower their head onto the pillows.
- Change the duvet cover and cover the patient.
- Place dirty linens in an oilcloth bag.
- Remove the clean patient clothing.
- Wash your hands.



*Fig. 17. Method 1*

Method 2 (Patient Bed Rest) (Fig. 18):

- Put on clean patient clothing.
- Fold the bottom sheet in half lengthwise, creating a crease down the center.
- Remove the pillows from under the patient's head.
- Turn the patient onto their side, supporting them in this position.
- Roll the loose part of the dirty sheet towards the patient.
- Spread a clean sheet over the exposed part of the bed.
- Turn the patient onto their back and then to the other side so that they are now lying on the clean sheet.
- Remove the dirty sheet.
- Spread the second half of the clean sheet over the bed and tuck the edges under the mattress.
- Change the pillowcases. Lift the patient's head, place the pillows, and lower their head onto the pillows.
- Change the duvet cover and cover the patient.
- Place dirty laundry in an oilcloth bag.
- Remove the clean patient clothing.
- Wash your hands.

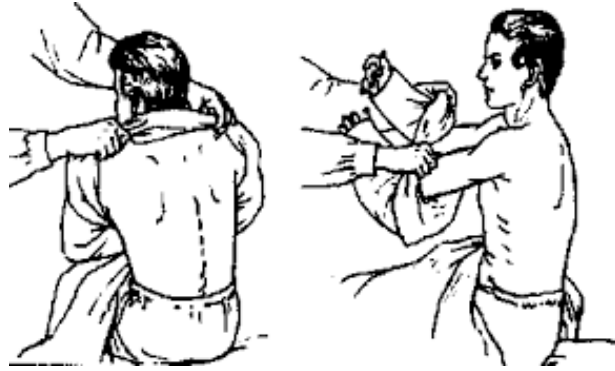


*Fig. 18. Method 2*

### **CHANGE OF UNDERWEAR**

Procedure (Fig. 19):

1. Put on clean patient clothing.
2. Raise the patient's upper torso slightly.
3. Slide your hand under the patient's back. Lift the edge of the shirt from the back, towards the underarms and the occiput, and remove the shirt first from the head and then from the arms.
4. Put the shirt on the patient in the reverse order: first the arms, then the shirt (slide it over the patient's head and spread it out underneath them).
5. Place the dirty shirt in the oilcloth bag.
6. Remove the clean patient clothing and place the gloves in a container with disinfectant.
7. Wash your hands and dry them with an individual towel.



*Fig. 19. Change of underwear*

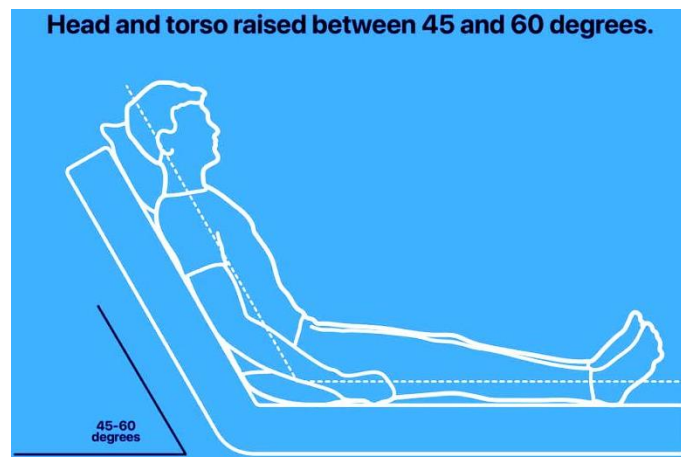
## **POSITIONS OF A PATIENT IN BED**

### **FOWLER'S POSITION**

Fowler's position (Fig. 20) is a common patient resting position, often used in both inpatient and emergency department settings. In this position, the patient lies on their back with the head of the bed elevated between 45 and 60 degrees. Their knees may be either straight or slightly bent.

This position is beneficial for respiratory changes as it promotes increased oxygenation by maximizing chest expansion, minimizing abdominal muscle tension, and reducing the effects of gravity on the chest wall. Therefore, Fowler's position is a valuable intervention for patients experiencing mild to moderate respiratory distress.

In addition, a high Fowler's position, with the head of the bed elevated between 60 and 90 degrees, is particularly useful during the placement of orogastric and nasogastric tubes, as it helps to minimize the risk of aspiration.



*Fig. 20. Fowler's position*

### **SEMI-FOWLER'S POSITION**

In the Semi-Fowler's position (Fig. 21), a patient, typically in a hospital or nursing home setting, lies on their back with their head and torso elevated between 15 and 45 degrees. The most commonly used bed angle for this position is 30 degrees.

Unlike the Fowler's position, which has a steeper elevation angle, the Semi-Fowler's position may also involve raising the foot of the bed at the knees to bend the patient's legs.

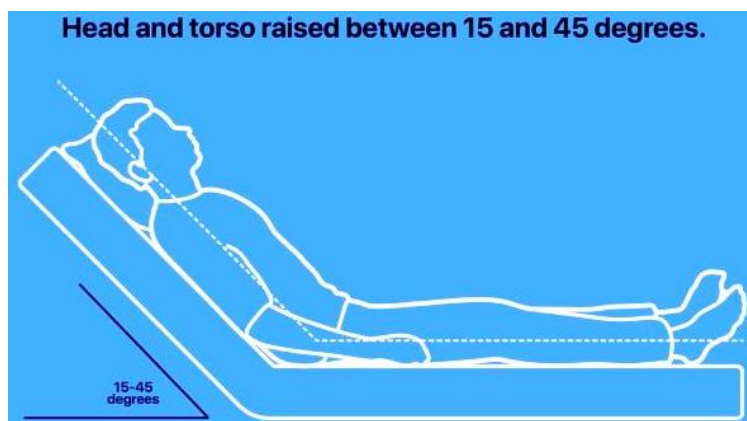


Fig. 21. Semi-Fowler's position

The Semi-Fowler's position serves similar purposes to the standard Fowler's position, including:

- Facilitating feeding.
- Promoting lung expansion.
- Supporting patients with cardiac or respiratory conditions.
- Providing a comfortable position for patients with nasogastric tubes.

Additionally, the Semi-Fowler's position is particularly preferred during childbirth as it enhances the comfort of the mother.

### SUPINE POSITION VARIATIONS

**Lawnchair position** (Fig. 22). This is a variation of supine in which the hips and knees are slightly bent and above the level of the heart. It removes pressure on the back, hips, and knees, helps veins drain from the lower limbs, and relaxes the muscles in the abdomen.



Fig. 22. Lawnchair position

**Frog-Leg Position.** A variation of the supine position, the frog-leg position involves flexing the hips and knees while externally rotating the hips. It facilitates access to the perineum, groin, rectum, and inner thigh. However, to prevent stress and dislocation of the hips, the knees must be supported.

**Trendelenburg Position** (Fig. 23). A variation of the supine position, the Trendelenburg position involves tilting the head of the bed down so that the pubic symphysis becomes the highest point of the trunk. It facilitates venous return and improves exposure during abdominal and laparoscopic surgeries.

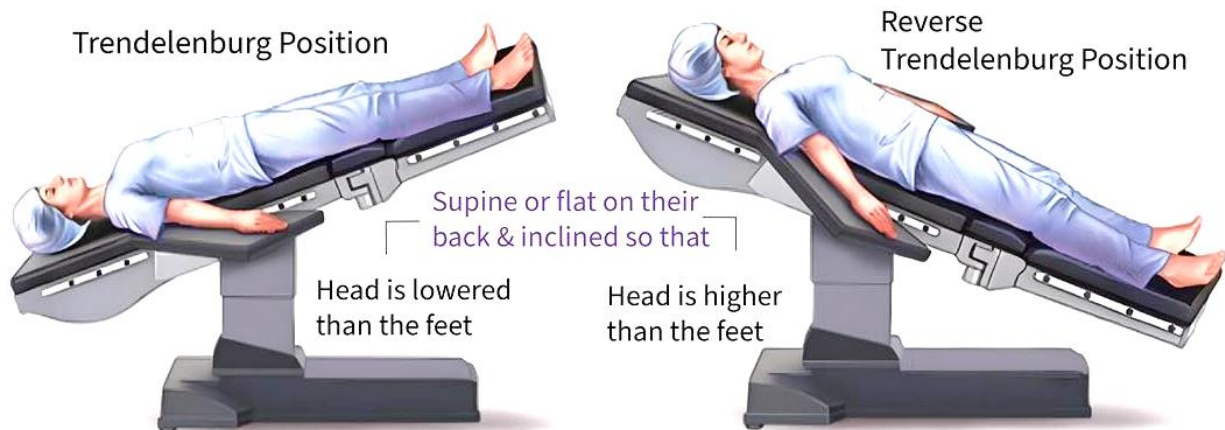


Fig. 23. Trendelenburg Position

Hemodynamic Changes: increased venous return and cardiac output (temporary).

Respiratory Changes:

- Upward displacement of abdominal contents into the diaphragm.
- Decreased functional residual capacity.
- Decreased respiratory compliance.
- Increased airway pressures needed to maintain ventilation.

Gravitational Changes:

- Increased intracranial pressure.
- Increased intraocular pressure.
- Swelling of the face, larynx, and tongue.
- Increased risk of postoperative airway obstruction.

Positioning Considerations:

– Shoulder braces are often used to prevent sliding and shifting of patients in the Trendelenburg position.

– Caution must be exercised to avoid undue pressure, which could potentially result in compression or stretch injury to the brachial plexus.

**Reverse Trendelenburg Position:** a variation of the supine position, the reverse Trendelenburg position involves tilting the head of the bed up so that the head becomes the highest point of the trunk. It facilitates upper abdominal surgery.

Hemodynamic Changes: decreased venous return, potentially leading to hypotension.

Gravitational and Hemodynamic Changes: decreased cerebral perfusion.

### Positioning Considerations:

- Invasive arterial monitoring should be considered due to the potential for decreased cerebral perfusion.
- Sliding and shifting a patient in the reverse Trendelenburg position can increase pressure over the posterior calcaneus.

## PRONE POSITION

Commonly used during surgeries requiring access to specific body regions, the prone position (Fig. 24) involves the patient lying face down with their head, neck, and spine maintained in a neutral position. This position is often used for procedures involving the posterior fossa of the skull, posterior spine, buttocks, perirectal area, or lower extremities.

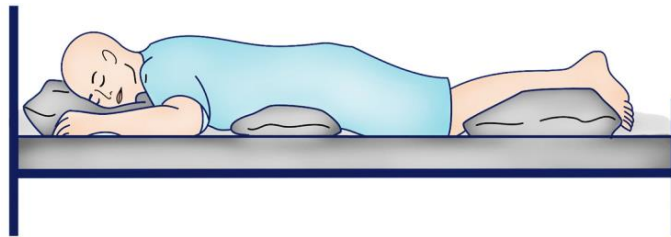


Fig. 24. Prone position

**Minimizing Dislodgement of Monitors and Tubes.** To minimize the risk of dislodging monitors and tubes during the turning process, disconnect as many devices as possible before repositioning the patient. Temporarily detach the ventilator from the endotracheal tube to prevent dislodgement.

**Headrest and Pillow Considerations.** Various commercially available headrests and pillows are designed to support the forehead and malar regions, featuring openings for the eyes, nose, and chin to prevent external pressure on these delicate structures. Special caution is crucial to avoid undue pressure on the eyes, as perioperative vision loss is a preventable complication of the prone position.

**Respiratory Benefits.** The prone position can lead to alveolar recruitment and increased oxygenation without affecting cardiac output. This makes it a valuable maneuver for severely hypoxemic patients in the early stages of acute respiratory distress syndrome (ARDS).

*Side (Lateral) Position* (Fig. 25). In the side (lateral) position, the patient lies on their side with their head supported so that it is in line with their spine. Both lower limbs are bent at the knees. The lower leg is slightly flexed, while the upper leg is flexed more at the knee and hip. The arms can be rested alongside the body or in the direction of the head. The upper arm can be supported by an aid, such as a pillow.

This position is commonly used for patients with pleurisy (inflammation of the pleura, the lining of the lungs). By lying on the affected side, the patient can reduce their breathing movements and, consequently, alleviate pain. The side position is also used during rest, sleep, or when needed to relieve pressure on prominent areas while in the supine position.

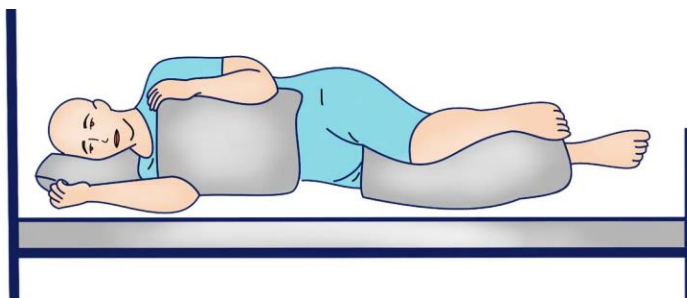


Fig. 25. Side (Lateral) Position

*Stabilized (Sims', Large Lateral Position) Side Position* (Fig. 26). The stabilized side position, also known as the Sims' position or large lateral position, is specifically used for unconscious patients and those with complete inability for voluntary movement (plegia). In this position, the patient lies on one side with their lower arm placed behind their back and their upper arm flexed at the shoulder and elbow. Both legs are flexed, with the upper leg bent slightly forward. The use of positioning aids, similar to those used in the lateral position, is essential to provide support and maintain the patient's alignment.

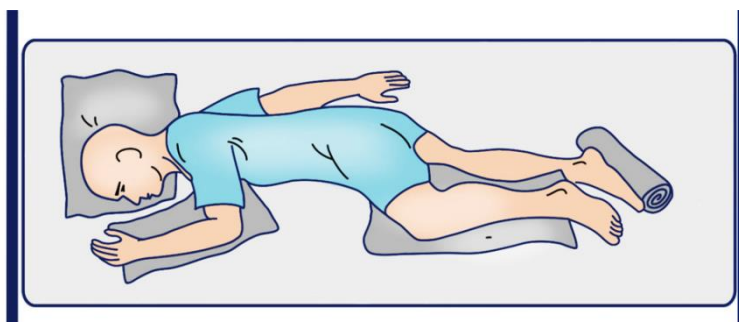


Fig. 26. Large Lateral Position

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