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Nursing

PhDr. Simona Saibertová, Ph.D.

This subject has two main parts

- Theoretical lessons – Nursing – 4 hours

  PhDr. Simona Saibertová, Ph.D.

- Practical lessons – practice in the hospital – 2x 4 hours – **The University Hospital Brno**

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Practical lessons
Gastroenterology unit (IGEK - A,B)

Practice takes from
6:30 – 10:00

Time of arrival: 6:10 in the morning
Meeting point: 4th floor, A1

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Practice in the hospital

- white T-shirt (no pictures, writing on)
- white trousers
- shoes

- tag /nameplate (ask for it the Office for students)
- long hair – ponytail
- remove all jewels from your fingers and wrist
- one padlock for 2-3 people
- blue and red pen

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Definition of Nursing

- Nursing is a system of typical nursing activities concerning the individual, families or group which assist these people to able to take of their health and well-being.

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Nursing

- is the protection, promotion, and optimization of health and abilities;
- prevention of illness and injury;
- alleviation of suffering through the diagnosis and treatment of human responses;
- advocacy in health care for individuals, families, communities, and populations.

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A Nurse

carries out a lot of procedures

- Assists the doctors and the professionals
- Assists the patients with daily living activities (bath, dressing..)
- Prepares and serves meals according to the instruction
- Turns and positions patients in the bed
- Gives bedpan and urinal or provides incontinent care

- Takes the patient´s temperature, pulse, respiration and blood pressure
- Takes samples some other biological materials
- Gives injections and medicaments

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Why to use the Nursing Process?

- It is important because it provides a framework for clinical decision-making, which helps to guide care and promote critical thinking.
- It is a systematic and goal oriented framework for problem solving.
- Critical thinking is thought how the nursing process can improve client care

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Benefits of Nursing Process

- Continuity of care
- Prevention of duplication
- Individualized care
- Standards of care
- Increased client participation
- Collaboration of care

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Nursing process

The nursing process consists of five dynamic and interrelated phases

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Assessment

- Purpose: to establish a data base

Assessment = Observation+ Interview+ Physical Examination

- Data are collected, organized, validated, and recorded

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Subjective data

- Are reported but not objectively measurable
- You cannot see them
- Are often referred to as symptoms and represent thinks a client tells you about than you cannot observe or measure (nausea, pain..)
- Most subjective data will be collected during a health history

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Objective data

- Are measurable
- Are often referred to as signs

These signs can be measured , seen, heard, felt or smelled and are often collected during a physical exam.

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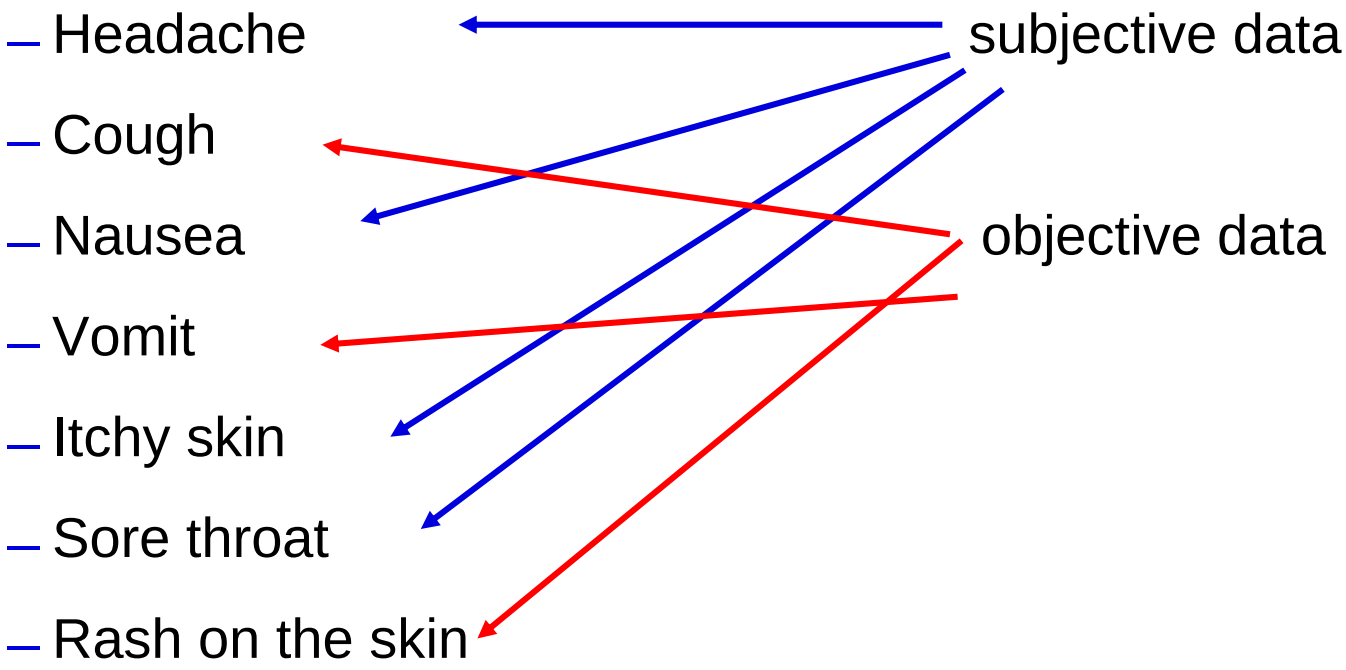
Subjective/objective data



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Diagnosis – second step

- Nursing diagnoses determine the client´s response or problem related to an illness or situation
- Formulating a clear diagnosis helps communication among team members.
- Nurses cannot make a medical diagnosis like Asthma or Myocardial infarction.

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Nursing diagnosis

- Actual diagnosis – is a statement about a health problem that the client has, and could benefit from nursing care (pain, hypothermia)
- A risk diagnosis – is a statement about a health problem that the client hasn´t had yet, but comprise potential or likely risk factors in which a patient is vulnerable to (at risk for infection)

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Comparison of selected nursing and medical diagnoses

Nursing	Medical
Ineffective Breathing Pattern	Chronic Obstructive
Activity intolerance	Pulmonary Disease
Acute pain	Cerebrovascular Accident
Body image disturbance	Appendectomy
Risk of Altered Body	Amputation
Temperature	Strep Throat

Nursing planning – third step

1) Establishing priorities – the nurse examines the client´s nursing diagnoses and ranks them in order of physiological or psychological importance.

2) Setting goals – short term (can be met fairly and quickly), long term (cover a long time period)

3) Developing expected outcomes – expected outcomes define when a patient goal has been met and assist in evaluating the extent to which the Nursing diagnosis has been resolved.

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Planning

Goal: lung will remain clear postoperatively

Expected outcomes:

- The sputum will remain white
- The patient will remain afebrile
- The lungs will be clear to auscultation

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Implementation – fourth step

- To implement the care plan successfully, nurses need cognitive, interpersonal, and technical skills. These skills are distinct from one another.
- The nurse completed the implementing phase by recording the interventions and client responses in the nursing process notes.

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Nursing interventions

Nursing Diagnosis: Acute pain related to myocardial ischemia

Goal: Client will resume normal activities of daily living

Expected outcome: client will verbalize relief of pain

- Asses pain characteristics such as location, quality, severity, duration, onset, relief.
- At first signs of pain, instruct client to relax and discontinue activity.
- Instruct client to take sublingual nitroglycerin.
- Administer oxygen as

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Evaluation - fifth step

When determining whether a goal has been achieved, the nurse can draw one of the three possible conclusion

- The goal was met, that is the client response is the same as the desire outcomes.
- The goal was partially met, that is either a short term goal was not, or the desire outcome was only partially attained.
- The goal was not met.

So the nurse must reassess why the goals are not being achieved.

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First step on practice in the hospital hand hygiene

Hand hygiene - washing and disinfection of hand

- Professional hand hygiene is one of the most important preventive measures for the protection of personnel and patients.
- Correctly performed hand hygiene reduces contamination with pathogens by up to 99.9 %

https://www.youtube.com/watch?v=LvRP3c5n3P8

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Hand disinfection vs. handwashing

- Handwashing is not an alternative to hand disinfection because only disinfection is capable of reducing pathogens rapidly enough so that no more pathogens can be transmitted.

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Hand washing techniques

Wet both hands before application of soap (liquid is preferable). Follow the technique below for 15 – 30 seconds ensuring that each step consists of at least three strokes backwards and forwards.

Step 1
Rub palm to palm

Step 2
Right palm over back of left hand and left palm over back of right hand

Step 3
Palm to palm, with bent and spread out fingers

Step 4
Backs of fingers to opposing palms with fingers interlocked

Step 5
Circular rubbing of left thumb in closed right hand and vice versa

Step 6
Circular rubbing, backwards and forwards with closed right hand fingertips in left palm and vice versa.

Finally, rinse and dry hands thoroughly

Special attention should be paid to fingertips, thumbs and other areas of hands likely to contact a contaminated site. Hands should be rinsed in clean water. Care should be taken to dry the skin with paper towels to avoid skin damage. If frequent washing has been performed hand cream should be applied at the end of duties to prevent skin desiccation and cracking.

https://www.youtube.com/watch?v=rLmDerR1HqE

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My 5 moments for
HAND HYGIENE
1 BEFORE TOUCHING A PATIENT
2 BEFORE CLEAN/ASEPTIC PROCEDURE
3 AFTER BODY FLUID EXPOSURE RISK
4 AFTER TOUCHING A PATIENT
5 AFTER TOUCHING PATIENT SURROUNDINGS

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Assessment techniques

The **techniques** used may include

- Inspection
- Palpation
- Percussion
- Auscultation

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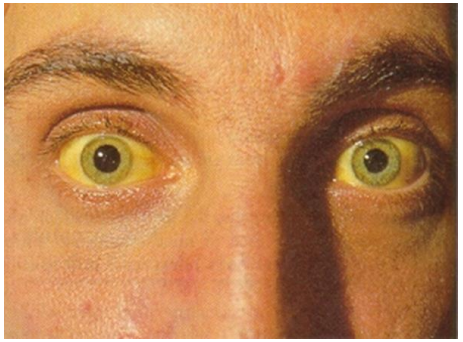
Inspection

- Inspect each body system using vision
- Assess for color, size, location, movement, texture, symmetry.



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Palpation

Assess for:

- Temperature, texture, moisture
- Organ size and location
- Rigidity or Spasticity
- Crepitation, Vibration
- Position, Size
- Tenderness or pain

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Types of Palpation

- **Light palpation** - depress the skin about 1 to 2 cm with your finger pads, using the lightest touch possible.
- Assess for texture, tenderness, temperature, moisture, elasticity, pulsations, and masses.

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Types of Palpation

- **Deep palpation** – depress the skin by for inches about 4 to 5 cm with firm, deep pressure
- Use this technique to feel internal organs and masses for size, shape, tenderness, symmetry, and mobility.

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Percussion

Assess underlying structures for location, size, density of underlying the tissue.

- **direct** - using one or two fingers, tap directly on the body part. Ask the patient to tell you which areas are painful, and watch his face for signs of discomfort.
- **indirect** - this technique elicits sounds that give clues to the makeup of the underlying tissue.
- **blunt percussion -** is used for assessing pain and tenderness in the gallbladder, liver, and kidney.

Auscultation

- Auscultation involves listening for various lung, heart, and bowel sounds with a stethoscope.

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Compression therapy – bandage of legs

- Compression aims to counteract the force of gravity and promote the normal flow of venous blood up the leg.

- Compression acts on the venous and lymphatic systems to improve venous and lymph return and reduce edema.

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Compression therapy - bandage

- The most commonly used compression therapy systems come in two forms:
- Bandage components or layers wrapped around the leg (either full leg or below knee)

- or compression stockings

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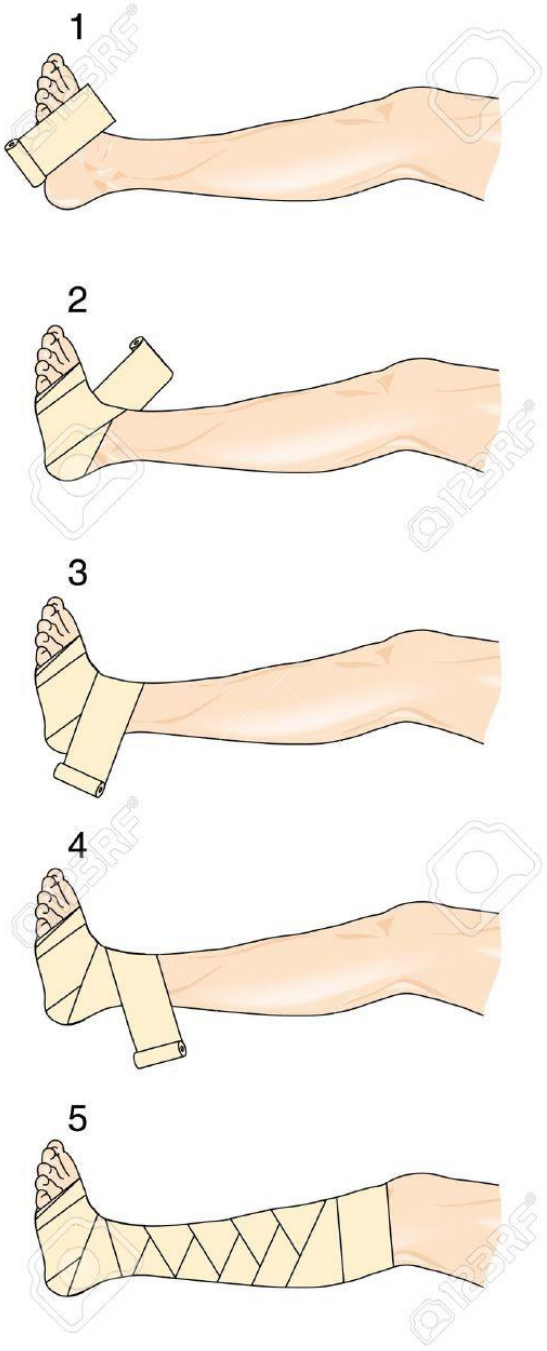
Making a Bandages

Figure of Eight Bandage

https://www.youtube.com/watch?v=HuK0X_I78



Incorrectly applied bandage

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Necrosis caused by incorrectly applied bandage

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Physical Examination

- blood pressure,
- pulse,
- temperature,
- respirations,
- pulse oximetry,
- ECG

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Blood pressure

- Is the force of blood against the walls of arteries.
- Is recorded as two numbers – the systolic pressure and the diastolic pressure.
- The systolic pressure is the maximum pressure in an artery at the moment when the heart is beating and pumping blood through the body.
- The diastolic pressure is the lowest pressure in an artery in the moments between beats when the heart is resting.

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Blood pressure

- Use an instrument called a sphygmomanometer and stethoscope

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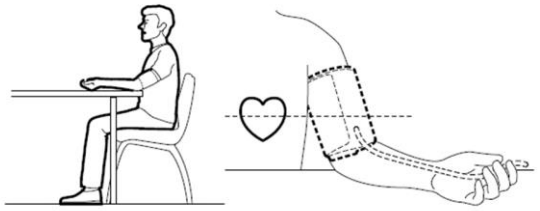
Measuring blood pressure

1. Wash hands and identify patient
(ask and check identity bracelet)
2. Explain procedure (změřím vám tlak)
3. Position patient comfortably, either seated or lying,
sit or lie down for at least 5-10 min before measuring.
Avoid taking a meal, smoking, exercising, bathing, drinking Alcohol, caffeine, or tea for at least 30 minutes before taking any measurement.
4. Position patient´s arm by supporting it on the bed or on the table with the palm turned upward, push sleeve up to shoulder
5. Place cuff 2-3 centimeters above bend in elbow, wrap it around the arm smoothly and secure it
6. Put earpiece in your ears, place diaphragm of the stethoscope over brachial artery and hold in place with one hand



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Measuring blood pressure

7. Close air valve and pump to inflate the cuff. Continue pumping the scale reads 180 (you can not listen sound)
8. Open slowly air valve and listen for first sound – its systolic pressure and read the scale.

9. Continue to release air, as soon as no sound take a second reading – its diastolic pressure
10. Deflate cuff completly
11. Record → **TK – 120/80** (sto dvacet na osmdesát)
    120 over 80
12. Clean earpiece and diaphragm of the stethoscope

Vocabulary

I will take your blood pressure.

Změřím vám (krevní) tlak.

Can I take your blood pressure?

Můžu vám změřit (krevní) tlak?

Your blood pressure is normal - 120 over 80.

Váš (krevní) tlak je normální- 120 (stodvacet) na 80 (osmdesát).

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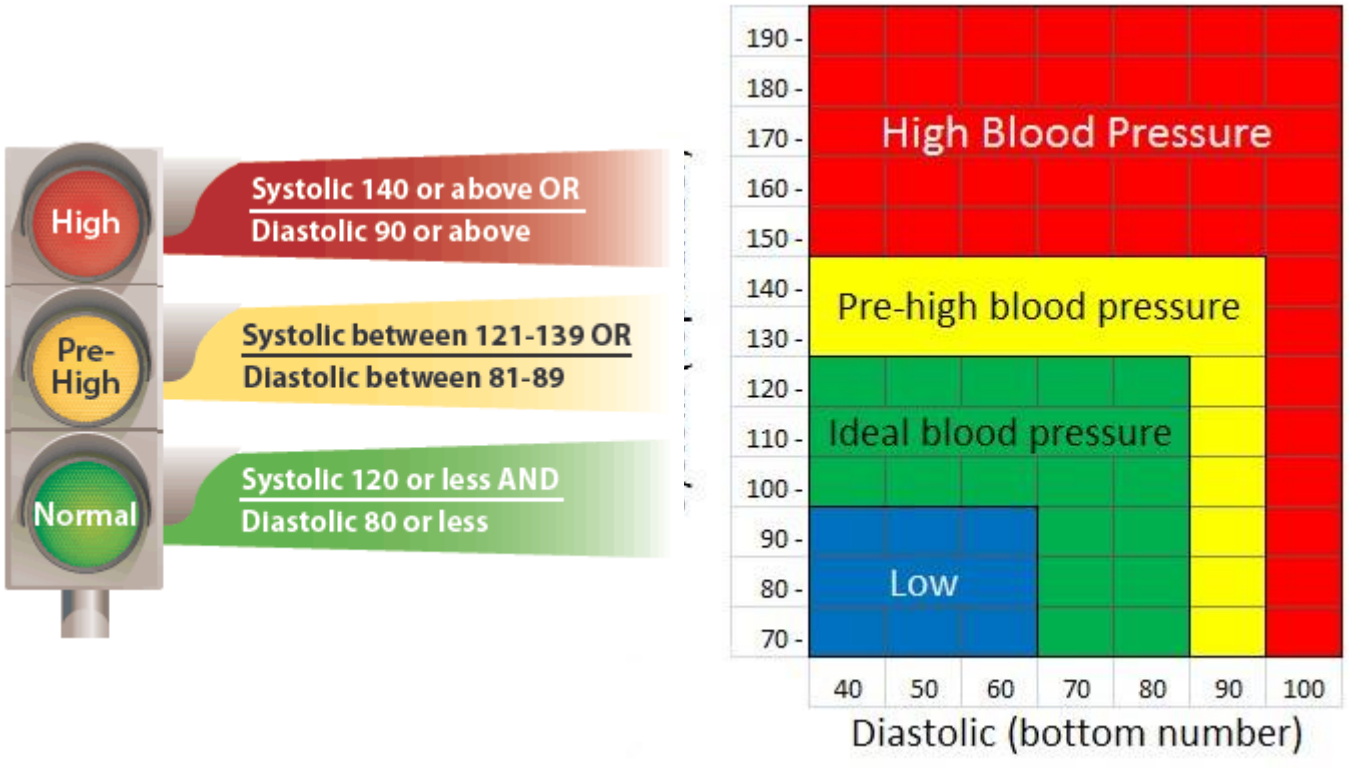
Categories for Blood Pressure - adults



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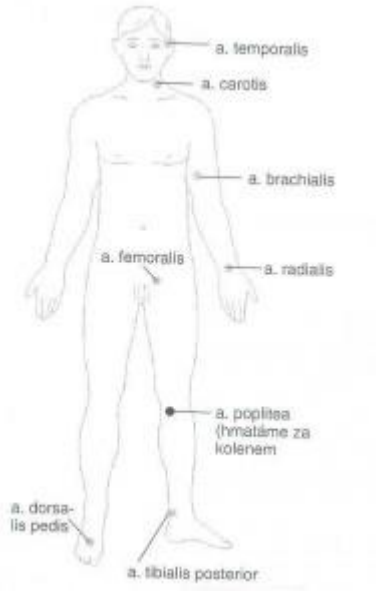
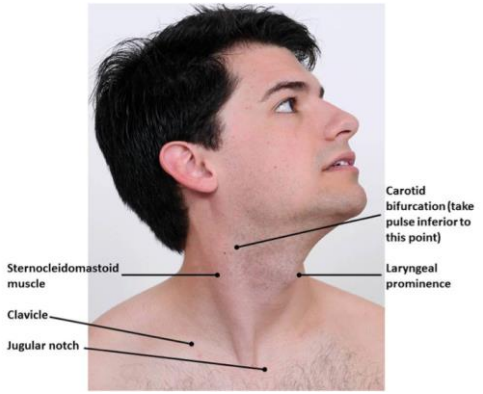
Assessing the Pulse

- A. temporalis
- A.radialis
- A.carotis
- A. poplitea
- A. femoralis
- A. dorsalis pedis
- Posterior tibial pulse





Assessing the Pulse




1. Wash hands and identify patient
2. Explain procedure (změřím vám puls)
3. The radial pulse is easy to find and is the most frequently checked peripheral pulse.
4. Assist patient to a seated or lying position to ensure relaxation and comfort.
4. To check the radial pulse with the patient supine, position the patient's arm along the side of the body or across the upper abdomen with the patient's wrist relaxed.
5. Apply light pressure with the pads of the fingers in the groove along the radial or thumb side of the patient's inner wrist.
Be careful not to apply too much pressure, as this can impair blood flow.
6. If the pulse is regular, count for 30 seconds, then multiply that number by 2.
If the pulse is irregular, count for 1 full minute
7. Record → **P – 89 ^{reg} (89´) or 89 ^{irreg}**

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Assessing the Pulse

- Newborns 0 - 1 month old: 70 - 190 beats per minute
- Infants 1 - 11 months old: 80 - 160 beats per minute
- Children 1 - 2 years old: 80 - 130 beats per minute
- Children 3 - 4 years old: 80 - 120 beats per minute
- Children 5 - 6 years old: 75 - 115 beats per minute
- Children 7 - 9 years old: 70 - 110 beats per minute
- Children 10 years and older, and adults: 60 - 100 beats per minute
- Well-trained athletes: 40 - 60 beats per minute

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Vocabulary

I will take your pulse.

Změřím vám puls.

Can I take your pulse?

Můžu vám změřit puls?

Your pulse is 70 per minute.

Váš puls je 70 (sedmdesát) za minutu.

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Assessing respirations

- Count the number of breaths per minute, depth and rhythm of breathing and monitoring for signs of respiratory distress

1. With your fingers still in the vicinity of the radial artery start observing respirations. You do not want the patient to know that you are assessing respirations because the patient may change their breathing patterns or rate
2. Observe the rise and fall of the patient's chest
3. After a complete cycle of inspiration and expiration has been observed, count respirations for 30 seconds and multiply by 2 if respiratory rate is regular. If irregular count for a full 60 seconds
4. Wash hands
5. Document respiratory rate, depth and rhythm on appropriate documentation form

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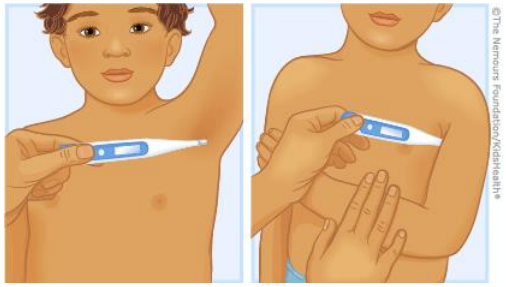
Assessing the Temperature

You can measure the temperature on three body location:

- **Mouth** - place the probe under the tongue and close the mouth. Breathe through the nose, and use the lips to hold the thermometer tightly in place. Leave the thermometer in the mouth for 3 minutes or until the device beeps.

- **Rectum** - this method is for infants and small children who are not able to hold a thermometer safely in their mouth. Place petroleum jelly on the bulb of a rectal thermometer. Place the small child face down on a flat surface or lap. Spread the buttocks and insert the bulb end about 1/2 to 1 inch into the anal canal. Be careful not to insert it too far. Struggling can push the thermometer in further. Remove after 3 minutes or when the device beeps.



- **Armpit** - place the thermometer in the armpit, with the arm pressed against the body. Wait for 5 minutes before reading.

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Assessing the Temperature

Non-contact forehead infrared thermometer - this thermometer is intended for scanning individuals or monitoring an individual for potential elevated temperatures. It is not a substitute for a clinical thermometer. Simply press the trigger and read temperature on the large backlit LCD display in just half a second.

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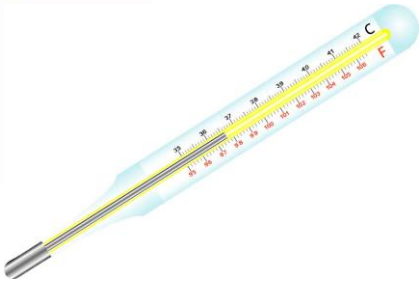
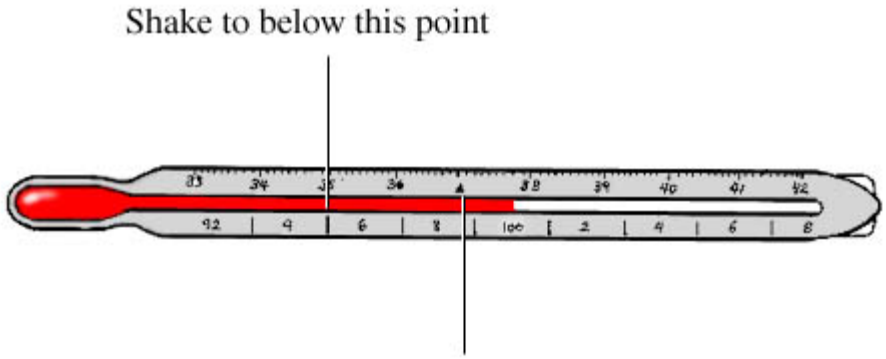
Assessing the Temperature

Normal temperature range



Rectum – 36,6° - 38°C

Mouth – 35,5° - 37,5°C



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Assessing the Temperature

- 1. Wash hands and identify patient
- 2. Explain procedure (změřím vám teplotu)
- 3. Assist patient to a seated or lying position to ensure relaxation and comfort.
- 4. Apply thermometer
- 5. Record → **TT – 36,5°C**

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Vocabulary

I´ll take your tempereture.

Změřím vám teplotu.

Can I take your temperature?

Můžu vám změřit teplotu?

Your temperature is 36,5^{o}C.

Vaše teplota je 36,5^{o}C. (třicet šest celých pět)

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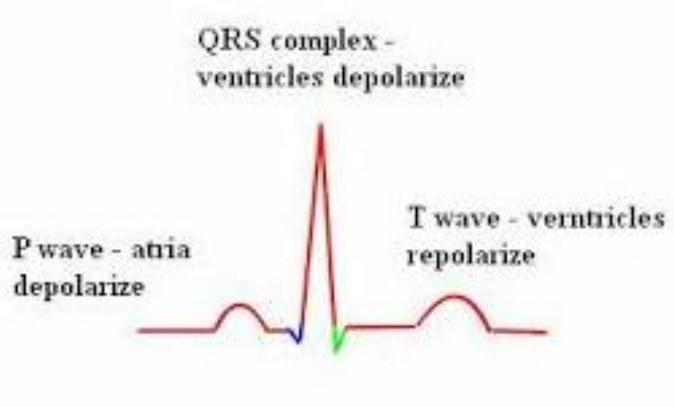
Assessing ECG (EKG)

- An electrocardiogram is the process of recording the electrical activity of the heart over a period of time using electrodes placed on a patient's body.
- These electrodes detect the tiny electrical changes on the skin that arise from the heart muscle depolarizing during each heartbeat.



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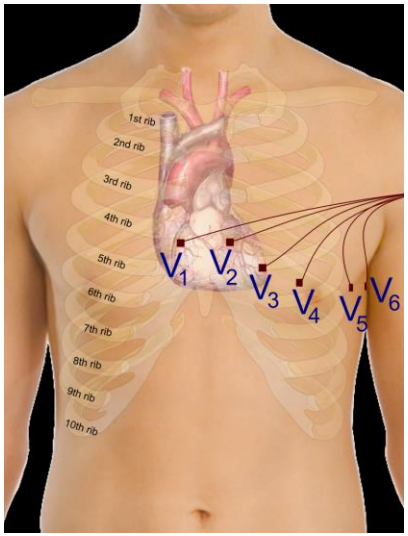
Assessing ECG (EKG)

Electrode name	Electrode placement
RA	On the right arm, avoiding thick muscle.
LA	In the same location where RA was placed, but on the left arm.
RL	On the right leg, lateral calf muscle.
LL	In the same location where RL was placed, but on the left leg.
V_1	In the fourth intercostal space (between ribs 4 and 5) just to the right of the sternum (breastbone).
V_2	In the fourth intercostal space (between ribs 4 and 5) just to the left of the sternum.
V_3	Between leads V_2 and V_4.
V_4	In the fifth intercostal space (between ribs 5 and 6) in the mid-clavicular line.
V_5	Horizontally even with V_4, in the left anterior axillary line.
V_6	Horizontally even with V_4 and V_5 in the midaxillary line.



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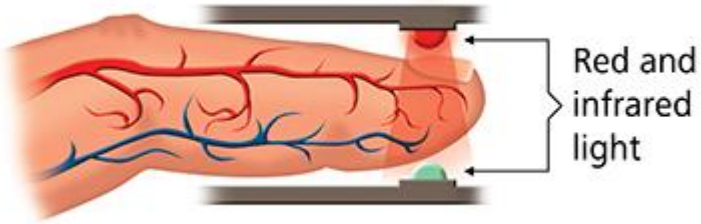
Pulse oximetry

– is a non-invasive method for monitoring a person's O2 saturation.

A finger pulse oximeter functions by shining light through your finger. The sensors detect how much oxygen is in your blood based on the way the light passes through your finger. Pulse oximetry is the technology calculating the results to display a number on the oximeter's screen that tells you the percent of oxygen in your blood. A finger pulse oximeter also measures your pulse rate.
Record **SPO_2 – 98 %**



Pain management

- An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- Acute pain – pain that occurs immediately after illness or injury and resolves healing
- Chronic pain – pain that persists beyond the time of normal healing and can last from a few months to many years (Headache, Low back pain, Cancer pain, Arthritis pain, Neurogenic pain, Psychogenic pain

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Pain management

Table 2: ABCDE for Pain Assessment and Management	
*A*sk	Ask about pain regularly. Assess pain systematically.
*B*elieve	Believe the patient and family in their reports of pain and what relieves it.
*C*hoose	Choose pain control options appropriate for the patient, family, and setting.
*D*eliver	Deliver interventions in a timely, logical, and coordinated fashion.
*E*mpower	Empower patients and their families. Enable them to control their course to the greatest extent possible.

Source: Reference 7.

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Pain history

- temporal features - onset, duration, course, pattern
- intensity - average, least, worst and current pain
- location - focal, multifocal, generalized, referred, superficial, deep
- quality - aching, throbbing, stabbing, burning
- exacerbating/alleviating factors - position, activity, weight bearing, cutaneous stimulation

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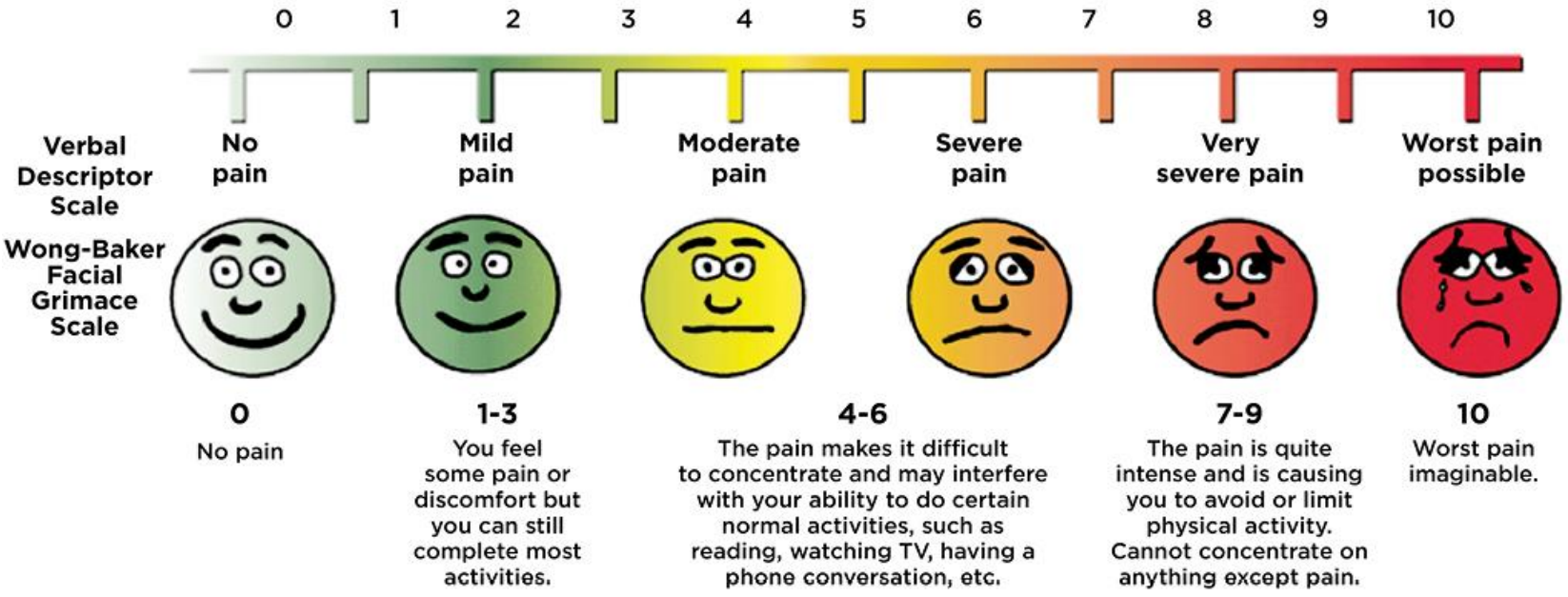
Pain measurements

- Visual scales
- Numerical scales
- Verbal scales



Vocabulary

- Do you have any pain?
- Máte nějaké bolesti?

- Where does it hurt you?
- Kde vás to bolí?

- How much it hurts?
- Jak moc vás to bolí?

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Bedsores

Are also called decubitus ulcer, pressure ulcer or pressure sores.

= are injuries to skin and underlying tissue resulting from prolonged pressure on the skin.

- Bedsores most often develop on skin that covers bony areas of the body, such as the heels, ankles, hips and tailbone.

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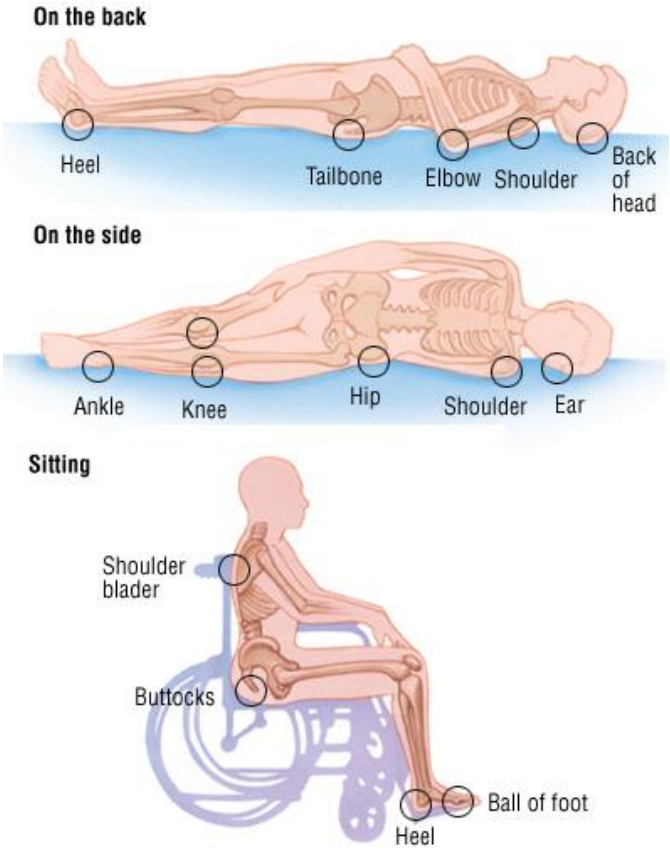
Common sites pressure ulcers



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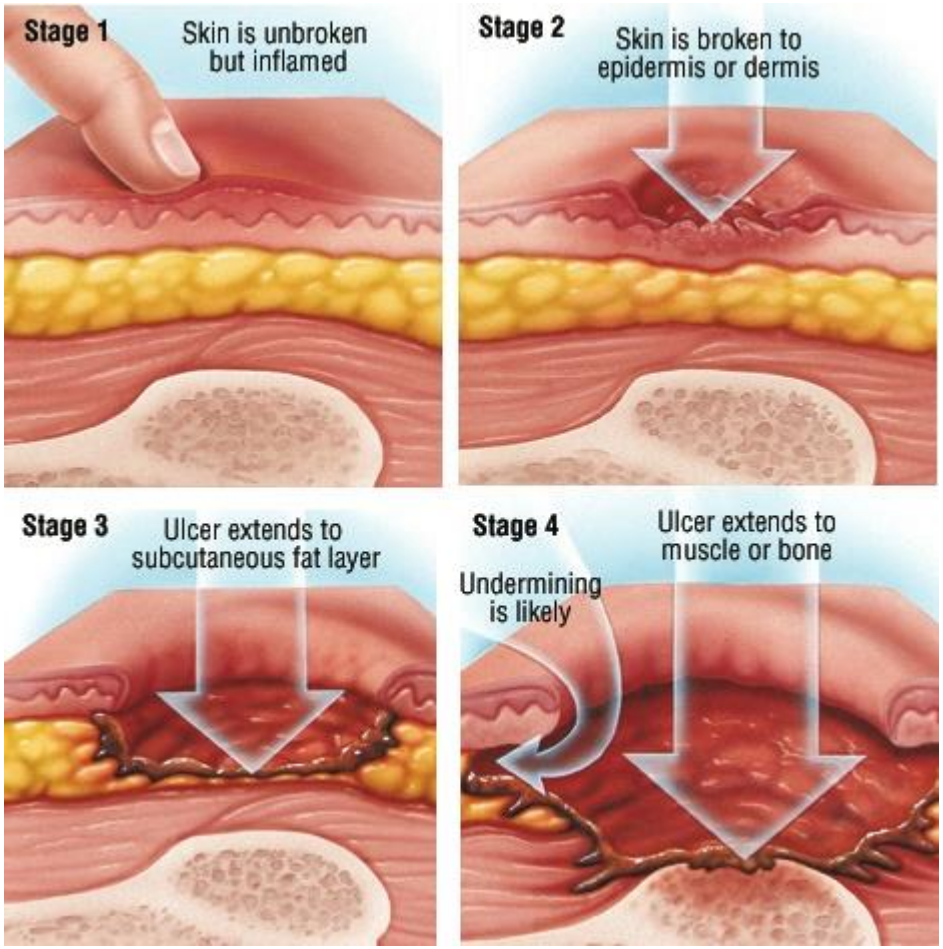
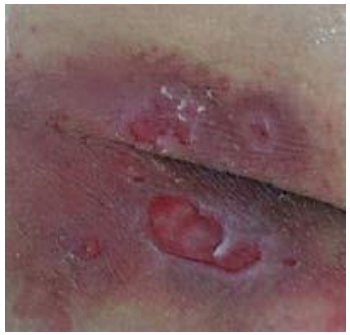
Bedsores





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Bedsores - Prevention of pressure ulcers

Bedsores are easier to prevent than to treat, but that doesn't mean the process is easy or uncomplicated.

Preventive measures included

- Repositioning on a bed
- Skin care
- Nutrition
- Other strategies

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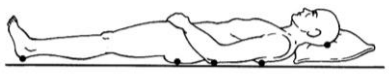
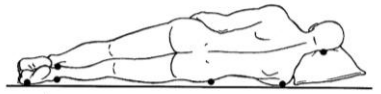
Bedsores – Repositioning in a bed

- **Reposition patient frequently**. Change patient´s body position every two hours.
- **Try a specialized mattress**. Use special cushions, a foam mattress pad, an air-filled mattress or a water-filled mattress to help with positioning, relieving pressure and protecting vulnerable areas.
- **Adjust the elevation of patient´s bed**. If patient´s hospital bed can be elevated at the head, raise it no more than 30 degrees. This helps prevent shearing.
- **Use cushions to protect bony areas**. Protect bony areas with proper positioning and cushioning.





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Bedsores - Skin care

Protecting and monitoring the condition of patient´s skin is important for preventing pressure sores

- **Clean the affected skin.** Clean the skin with mild soap and warm water or a no-rinse cleanser. Gently pat dry.
- **Protect the skin.** Use talcum powder to protect skin vulnerable to excess moisture. Apply lotion to dry skin. Change bedding and clothing frequently. Watch for buttons on the clothing and wrinkles in the bedding that irritate the skin.
- **Inspect the skin daily.** Inspect the skin daily to identify vulnerable areas or early signs of pressure sores.
- **Manage incontinence to keep the skin dry.**

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Bedsores - Nutrition

A doctor, a dietitian or other members of the care team can recommend nutritional changes to help improve the health of patiens skin

- Choose a healthy diet. Patients may need to increase the amount of calories, protein, vitamins and minerals in your diet. They may be advised to take dietary supplements, such as vitamin C and zinc.
- Drink enough to keep the skin hydrated. Good hydration is important for maintaining healthy skin.

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Bedsores - Other strategies

Other important strategies that can help decrease the risk of bedsores include the following:

- Quit smoking.
- Stay active. Limited mobility is a key factor in causing pressure sores.

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Making of bed

- Beds can be made either while **occupied** by the patient, or **unoccupied**.

- Bedmaking provides a clean, comfortable sleeping and resting environment for the patient.

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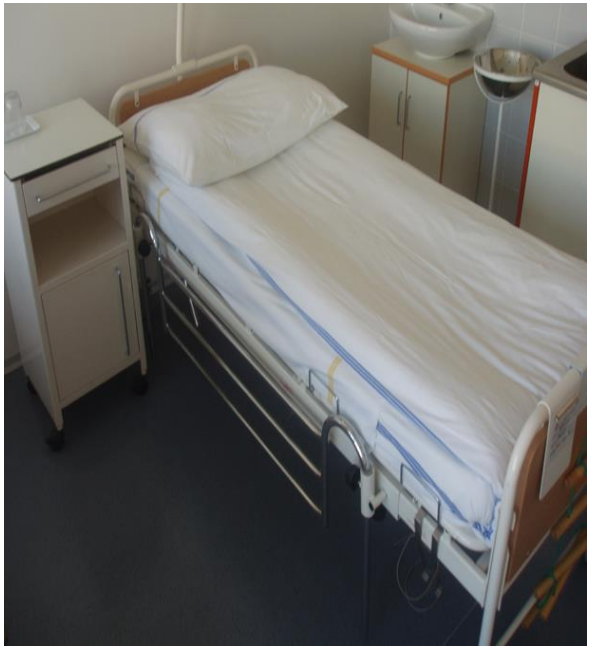
Making of unoccupied bed

- There are two types of unoccupied bed.
- **Close bed** is made after the patient is this changed and its ready for new patient.
- **Open bed** is when the top linen is folded back and patient can get into the bed and get covered up easily.



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Making of bed

You will prepare: sheet, pad, disposable incontinent pad, quilt cover ad pillowcase

- Patient´s comfort depends on the bed and frequency of changes in his position.
- Hospital bed must be safe and comfortable for the patient.
- Properly maintained bed makes patient feel better, it also promotes comfort and helps prevent bedsores.
- The linens must remain taut and free of wrinkles even if the patient is restless and moving about in bed.
- Because many patients stay in the bed,

daily change bed linens is necessary.

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Vocebulary

- Bed linen - ložní prádlo
- Sheet - prostěradlo
- Pad - podložka
- Disposable incontinent pad - jednorázová podložka
- Quilt cover - povlak na deku
- Blanket - přikrývka (deka)
- Pillowcase - povlak na polštář

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Placing the bedpan

One of the necessary activities is placing the bedpan.

- The best way to do so is with the patient lying face up, hands and feet placed on the bed with the legs bent, and instruct or help lift the buttocks from the bed.

- If the patient is not able to cooperate, we will rotate him or her onto their side to be able to slip the bedpan in place, and then carefully move the patient back over it.

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Body hygiene

- Body hygiene should be performed every day; at times, some parts of body hygiene may need to be performed several times a day.
- This procedures help the patient relax, eliminate body odors, help prevent skin breakdown, and can stimulate the circulation.
- Being clean and having good body hygiene is also an issue of dignity and self-respect.
- Body hygiene includes giving/assisting with a bath, providing perineal care, washing the hair, shaving, and caring for the nails.

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Bathing the Patient

- Depending on the patient's situation and medical condition, daily bathing can be in the form of
- a shower,
- a tub bath,
- a partial bed bath,
- complete bed bath

Complete Bed Bath

- Put on gloves, wear disposable protective apron
- Position the bed so that the patient is flat. No all patients can tolerate being completely flat, so assess each situation individually
- Using a washcloth, soap and a no-rinse cleanser (perineal area)
- Start at the face and head and move down
- Change the water as needed.

"The doctor doesn't want you getting too excited, so I'll be giving you your bed bath."

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