Term	Topic content
Scabies	is a parasitic contagious skin infestation caused by the itch mite *Sarcoptes scabies.* **Etiology.** Human scabies is caused by the itch mite *Sarcoptes scabiei* of *Sarcoptidae* family. The size of the male mite is 0.2 mm in length, 0.14-0.19 mm in width. Female is somewhat larger, it is 0.4-0.45 mm in length and 0.25-0.35 mm in width. Under the microscope itch mite is like turtle. After fertilization the male dies, and female burrows into the epilayer of the epidermis, where makes tunnels in parallel with the surface of the skin, in which it lays eggs. A mite can be removed from the itch tunnel with an injection needle or by means of thin sections of stratum corneum in the places of itch tunnels made by the female. For the period from one and a half to two months of its life, the female lays up to 50 eggs, of which three or four days later the mite larvae hatch. After two weeks, the mites become mature. **Epidemiology.** Annually up to 300 million cases of scabies morbidity are registered in the world. Fluctuation of scabies morbidity is of sinuous character with rise and fall rates periods in 15-30 years. Mainly, morbidity rate increase is caused by the worsening of sanitary conditions, poverty, migrations, economic crisis, natural disasters, population crowding, especially during the wars. It is observed the parallelism of increase of scabies cases and diseases transmitted predominantly through sexual contact. The source of infection is ill person. The main way of disease transmission is family and domestic. The infection occurs through the direct contact with the sick person, through bed sheets, clothing, gloves, socks and other items that he used. The children often become infected through shared toys in the kindergarten. **Clinical picture.** The clinic of scabies is based on the peculiarities of agent parasitizing, skin reaction and topical distribution of itch mites on the host. The incubatory period at the introduction of infection by the female is virtually absent, as it immediately borrows into the epilayer of the epidermis and starts to gnaw through tunnel and lay eggs, that is, there is the main clinical symptom of the disease. At the introduction of infection by larvae one can talk about the incubation period, which corresponds to the period of larva transformation into the mature female (approximately two weeks). The clinical symptoms of the scabies are itching, which increases in the evening time, the presence of borrows, polymorphism of skin (papulovesicles, papules, scratches, bloody crust), characteristic localization of the rash. The first subjective sign of the disease is intense itching in the places of borrows made by the female. The itching becomes worse in the evening and at night, that is due to the biological female

	characteristics, *(period of agent activity, salivation and substances present in the excrements, irritation of the nerve endings at movement of the itch),* tunneling mainly at night, and the development of organism sensitization to parasites and their waste products. Itch can be localized and generalized. Its intensity varies with different people and depends upon the number of rashes and distribution process. On the place of the female penetration into the skin a small papulovesicle (rarely papule) appears, which has infiltrative basis. At the distance of 2-7 mm from this element another papulo-vesicle appears (that is the exit site of the female onto the skin surface), these are so called conjugated freckles. Between the papulo-vesicles one can see itch tunnels, which have the form of thin strips of grey color, either straight or curved in the form of S letter. By means of light palpation one can find the tunnel relief, this is symptom Cezary. In the result of scratching there appear excoriations or small erosions with bloody crusts. *Typical places of scabies localization* are areas of the hands between the fingers, flexor surface of the brachium and elbow joints, the front and rear edges of axillary cavities, lateral surface of the chest and abdomen, nipples areola breast of women, navel area, buttocks and inter-gluteal folds, internal surface of the femora and external genitalia, these are areas with thin stratum corneum. The symptom of Hardy-Gorchakov helps in the diagnostics; this is the presence of pustules (impetigo, rarely ecthyma) and purulent crusts on elbows. The eruptions in view of impetigenous elements, papulovesicles, crusts in the area of inter-gluteal fold skin with the transition to the lumbus, were called the triangle symptom or the rhomb of Michaelis. Scabies, as a rule, is not localized on the skin of the head, neck, back, axillary cavities, palms and plantae (except for children and persons with mental disabilities), that is an important feature for the differential diagnostics with some other dermatoses. Clinical presentations of scabies on hand skin can be absent or slightly observable as to neat people and persons working with mineral oils, fuel oil (drivers, fitters, turners and others), turf and asphalt. The peculiarities of clinical presentation of scabies nowadays are light itching and inconsiderable in number eruptions during continuous course. There can be urticarial elements, the absence of rash on the hands due to frequent contact with detergent agents, pastes, chemicals and others. Scabies is often complicated by the secondary pyococcus infection in the results of the scratching (impetigo, ecthyma, folliculitis, boils), and by microbial eczema, especially in the area of breasts as for women. At eczematization there appears rash, which is typical to eczema; on the

	erythematous ground there appear small vesicles, oozing lesion, excoriations, and crusts. Eczematization, as a rule, develops as a result of irrational therapy or intolerance to some local agents (of brilliant green, benzyl benzoate, furacilin and others), less frequently as a result of sensitization of mite waste products. **Morbid anatomy.** Histologically borrows look like tunnels in the horny layer of epidermis. Cephalic reminds a funnel and slightly opens outwards and the cavity is visualized in the caudal section of the borrow, where the female is situated. Small vasodilatations with a little cellular infiltration around them take place in papillary dermis. Sometimes acanthosis and spongiosis are observed in the epidermis. **Diagnostics.** The diagnosis is based on the characteristic clinical picture of the disease and the identification of scabies mite in the laboratory research. With the traditional method the material for the study is obtained by means of the needle from the papulo-vesicles, located in the end of the borrow, or by means of superficial slice of the epidermis with a razor in the location of borrow. After putting the obtained material on a glass slide in a drop of 10-20% of alkali solution, the specimen is examined at law magnification under a light microscope. **Differential diagnostics.** Most frequently it is necessary to differentiate scabies from skin prurigo, wherein intense itching and papular elements are observed as well. In contrast to scabies, in indicated disease itching worries patient both in the daytime and at night, and more often it takes priority of rash. The popular elements are not conjugated, are located randomly and can appear on face skin, the itch borrows are absent. Indirect evidence in favor of scabies can be itching and similar rash of family members of the patient. Scabies affection of the penis skin, especially in the form of ecthyma, can be crucial for the suspected syphilitic solid chancre or popular rash, specific to the secondary period of syphilis. The presence of specific carnification at the heart of syphilitic solid chancre, the revealing of pale treponemes in serum of chancre or in lymph node aspirates, as well as the absence of scabies signs on other parts of the body and positive serological reactions allow diagnosing syphilis. One type of neglected stage of scabies is so-called Norwegian scabies, which is observed in persons with mental illness and in patients suffering from syringomyelia, multiple sclerosis, leprosy. The skin at this time is covered with thick, as bark, crusts of dark green color, resembling shell. Under the crusts after their removal on erythematous background a lot of white dots can be seen these are scabies mites. **Treatment.** In order to kill off the scabies mites, local antiparasitic agents, disintegrating the comel layer of epidermis and killing parasites, are applied. Appropriate antiparasitic agents as ointments, solutions and sprays are necessary to rub in all skin integuments, except for face and

	scalp, for adults. As infants and young children can have scabies manifestations on the face, scalp plantae and palms, accordingly, the indicated parts of the body subject to treatment with antiparasitic agents as well. For scabies treatment benzyl benzoate is used. This method differs from the others in such a way that along with high efficiency, there is no unpleasant smell that allows the patient to be at work, in public transport etc. Benzyl benzoate (benzyl-benzene carboxylate in form of 20% suspension in soap solution: 20 g of benzyl-benzoate, 2 g of green soap and 78 ml of water) is rubbed in with a cotton swabafter that the patient puts on clean clothes and change linen. Inflictions are repeated during the period of two days more without washing. In three days after end of treatment the patient takes a shower and changes clothing. Nowadays, 25% benzyl-benzoate cream is used more often than suspension. The application of the above methods of therapy of scabies, taking into account the toxicity of antiparasitic medicines, is often accompanied by skin irritation (contact dermatitis). In this case, the patients are recommended desensitizing agents and antihistamines, zinc oxide powders, indifferent water magmas, steroid creams and ointments. In case of bacillosis overlay, antibiotics both oraly and topically are used temporarily, and lesion focuses are salved with aniline dyes and 2% salicyl alcohol, as well. If scabies is accompanied by eczema, then 24 hours before the antiscabious therapy, the affected area must be salved with one of the topic corticosteroids. The patients with constant itching after the treatment for a long time are recommended mitigatory and local anti-itching therapy. ***Prophylaxis and antiepidemic measures*** for scabies patients are carried out accounting the epidemiology of disease. Early diagnostics and active case detections are of great importance here. Control of curability is executed in three days after the ending of therapy, and then in every ten days during a month and a half. The effectiveness of therapy mostly depends on thoroughness of sanitary and preventive measures.
Demodicosis	is a parasitic skin disease caused by the mites-Demodex, these are *Demodex folliculorum* and *Demodex brevis.* Most of researchers consider that mites-Demodex live in the skin of healthy people, and only under certain conditions they reveal their pathogenic features. **Etiopathogenesis.** The *mites-Demodex folliculorum* and *Demodex brevis* of *Demodecidae* family. They are in the follicles and sebaceous glands of the face mainly, as well as of the ear and auditory canals, palpebrae, breasts and genitals. There are two

	species of Demodex, which parasitize on human body; these are *Demodex folliculorum* and *Demodex brevis* Both species of the mites are very small in size (0.2-0.3 mm), with fusiform body, short legs and piercing-sucking mouthparts. The mites-Demodex causes illness under the common name demodecosis. More frequently these are people of young or middle age who suffer from a disease, especially in the presence of oily seborrhea. Factors contributing to the development of the disease are gastrointestinal and hormonal disorders, autonomic nervous disorders, menopause, dysmenorrhoea, and work in conditions of sharp change in temperature. **Clinical picture.** It predominantly involves the facial region (cheeks, forehead, and chin). There appear erythematous spots, telangiectasia, focal or fuse infiltration, peeling, as well as follicular papules of pink or red color, papulovesicles, papulopustules or separate macropustules. All these morphological manifestations of the demodecosis are accompanied by a number of subjective sensations, such as itching from minor to insufferable; sensation of skin heat and tightening; reduction of its elasticity and softness; sense of "screwing" something into the skin and "pins and needles" on its surface. Nowadays there are several classifications of clinical forms of demodecosis. In particular, one defines erythematous-squamous, papular, pustular, rosacea-like, combined and oligosymptomatic forms. With erythematous-squamous form of demodecosis peeling secondary to skin redness is observed in the affected areas. Disease, as a rule, occurs in spring and summer time. Its clinical symptoms exist up to two months, and then they gradually disappear or manifest less intensively. The relapse of disease occurs again in spring of the next year. Papular form is the most prevalent form of demodecosis. Except the face, the other areas of the skin can also be affected, such as ears, neck, back and abdomen. The main features of this clinical form are popular or papulo-vesicular rash, always follicular. The sizes of the papules range from 0.5 to 2 mm in diameter. The color of the papules can be of different intensity from pink to intense red. Silver squamosa or microvesicles appear on the surface of some papules, which can transform into micropustules. With the pustular form of demodecosis, the clinical picture resembles follicle, acne, rosacea-like or combined form of lesion, but with pustular rash dominating. Clinical manifestations of rosacea-like form of demodecosis

	look like manifestations of true rosacea. The peculiarities of this form are stable erythema on face, mainly in the area of nose, as well as the presence of telangiectasia with periodic presentation of flare. An important differential diagnostic criterion of rosacea-like form of demodecosis, as distinct from true rosacea, is the discovery of a large number of the *mites-Demodex* in the lesion areas during the laboratory research. With this clinical form of demodecosis the postulation can be due to parasitizing and activity of the *mites-Demodex*, or the result of action of associated impetiginous bacterial population. With combined form of demodecosis the rash elements appear which are characteristic for all other clinical forms. The combined form appears in the setting of any other clinical form of demodecosis, but it can develop also as independent form from the beginning of the sickness. Oligosymptomatic form of demodecosis is characterized by the presence of erythematous spots, small follicular peeling, isolated small papulovesicles and vesicle-pustules. Depending on the extension of inflammatory process the following forms of demodecosis are recommended to define: limited form with localization of the rash, mainly in the folds of the face skin and near the angles of the eyes; diffusive form which affects the entire skin of the face; extensive form in which the inflammatory process extends beyond the face. At the present stage it is also recommended to define the primary and secondary forms of demodecosis. The criterion of such dividing is that the primary demodecosis appears on the unchanged skin in appearance; and the secondary demodecosis is the complication of the principal disease, such as rosacea, perioral dermatitis and some other ones. **Diagnostics.** The diagnostics of the demodecosis is in microscopic study of pathological material taken from the lesions with aim of detection of the mites-*Demodex*. A variety of clinical forms of demodecosis defines specific material sampling for study for the presence of the *mites-Demodex*. With erythematous form of inflammatory process the material is taken from different areas of skin lesion by superficial scraping of squamosa. With papular, pustular and combined forms of demodecosis a puncture is made by means of scalpel and the content of pustules or sebaceous glands is received by extracting. It is also recommended to use comedone extractor or cyclodialysis spoon for extracting of follicle content. The obtained material is transferred onto the glass plate, treated with 20% solution of potassium hydroxide (kerosene, glycerol), covered with a cover slide, and examined under the microscope at

	low and high magnification in 10-20 minutes. The laboratory diagnostics of demodecosis of the eyes is also based on the detection of the *mites-Demodex* in the content of hair follicles of the eye lashes or scrapings from the eyelid margins. Epilated 4-6 eyelashes from each eyelid are placed onto the glass plate, applied with 1-2 drops of clear liquid (water, plant or mineral oils, glycerin) onto them, and then covered with cover slide. It should be noted that up to the present moment there is no generally accepted methodology of collection of samples to determine the number of the *mites-Demodex* in a limited area of affected skin. Besides, the point of significance of identified number of the *mites-Demodex* for setting nosological diagnosis "demodecosis" remains to be debating. Individual researchers recommend defining the number of the mites-*Demodex* in the affected skin area of 1 cm^2 In this case the detection of the *mites-Demodex* in an amount of more than 5 mites per 1 sm^2 is considered a diagnostic criterion for setting diagnosis "demodecosis" A lower concentration of these parasites is regarded as carriage, which does not require antiparasitic therapy for the patient to be conducted. At the same time, the other researchers to determine the diagnosis "demadecosis" offer to take into account the number of the *mites-Demodex (D. folliculorum, D. brevis)* in the structure of one hair follicle in the area of affected face skin, that methodologically is performed by means of histological examination. The detection of the *mites-Demodex* in an amount of 10 mites and more in the structure of one hair follicle is offered to regard as diagnostically significant for setting diagnosis "demodecosis" Herewith, during the quantitation both mature species of the parasites (imago) and the presence of the eggs, larvae and nymphs must be accounted. Demodecosis should be differentiated from rosacea, acne vulgaris, seborrheic dermatitis, perioral dermatitis, bacterial folliculitis. **Treatment** Taking into account the proven significance of a number of endogenous factors in the pathogenesis of demodecosis, it is recommended to hold a comprehensive examination of these patients with aim of defining foci of chronic infection, pathology of gastrointestinal tract, liver, pancreas, as well as endocrine and immune disorders. Treatment of demodecosis requires a complex therapy with accounting of the stage of inflammatory process and presence of associated pathology. In case of acute facial oedema and oozing lesion antihistamines

	and dehydration agents, as well as topical anti-inflammatory therapy are prescribed. The presence of pustular elements of rash requires prescription of one of the tetracycline antibiotics, in particular, doxycycline or macrolides (azithromycin) and others. After the elimination of oozing lesion and fresh pustular rash the patients are prescribed with topical antiparasitic therapy. For the treatment metronidazole (oral) is used as well. Antiparasitic topical therapy can be conducted with use of 20% suspension of benzyl benzoate, 33% sulfur ointment. The medicines of pyrethroid group, which are synthetic analogues of natural pyrethrins, known for their insecticidal and acricide action, are also used. Concerning appropriate medicines with synthetic pyrethroid-permethrin, it should be noted that the permethrin concentration of the preparation "Spregal" (spray) is higher in comparison with analogues. Besides, the preparation formula of "Spregal" consists of piperonyl butoxide, which contributes to prolongation and strengthening of permethrin action. During the treatment the diet and avoiding of hot and spicy food is important. To normalize the metabolic processes the treatment of the revealed pathology of other organs and systems is recommended. **Prophylaxis.** In order to prevent exacerbation of demodecosis prolonged sun exposure and excessive use of cosmetics should be avoided.
Pediculosis *(pediculus)*	is an infestation of the skin and hair, caused by the parasites of three kinds, these are head lice *(Pediculus capitis)*, body lice *(Pediculus corporis)* and pubic or crab lice *(Pediculus pubis)*. **Head lice** *(Pediculus capitis)* are spread through direct head-to-head contact or due to sharing hair combs, hats and others. The size of the male is 2-3 mm, the female is 2.4-4 mm, and both are of grey color with black dots on the belly edges. Inhabiting the scalp, the female lays eggs (nits) of grayish-white color with 0.75-0.8 mm in length, which are attached to the hair with help of chitinous membranes. In neglected cases the lice can infest the eyebrows, mustache and beard. The nits are attached to the hair and can be seen as white spot formations. **Clinical picture.** Due to bites of the lice, there occurs intense pruritus (itching), which causes the appearance of excoriations, covered with hemorrhagic crusts. Often due to pyococcus infection in lesions there appear sycoses, follicles, and impetigo vulgaris. Abscesses and eczematous foci may develop. In complication of the pediculosis with pyoderma, the hair in the affected areas is glued in form of thick bundles, so called mats, at the same time, the regional lymph nodes can increase and become painful. In the back of the head, especially of the girls and women with long hair, there appears grainy pyodermia *(impetigo granulata)*. **Diagnostics.** To diagnose infestation, the scalp should be

examined for the presence of the living parasites and nits.

Treatment. For the treatment of scalp pediculosis, 10% water-soap emulsions of benzyl benzoate and such shampoos as Pedilin, Nittiform are used, for treating the skin and hair of the head for 10-15 minutes, thereafter they are washed with hot water and soap. The use of Para-Plus spray is effective. The preparation is sprayed onto the scalp skin and the entire length of the hair; herewith the tip of the spray should be at a distance of 3 cm from the hair. After spraying the preparation it is necessary to wait for 10 minutes. During the exposure one should not cover a head with a towel or scarf. After use of preparation "Para-Plus" it is necessary to thoroughly wash a head with a shampoo. The dead nits, remained on the hair, should be combed out. All textile products, which the patient contacted with, such as towels, pillows, hats and others, must be treated with the preparation "Para-Plus" to prevent the secondary infestation. In case of dermatitis or eczematization inflammations are eliminated with neutral lotions, which contain corticosteroids.

Body lice *(Pediculus corporis, seu vestimenti)* are rare nowadays on the territory of Ukraine; mainly people without a permanent residence have them. They are somewhat larger than head ones, with size 3-5 mm in length, of white color, without black spots on the abdomen. Lifetime of the parasites is 30-45 days; they well tolerate cold and can starve for several days, die immediately in boiling. Body lice carry saprotyphus and relapsing fever. Lice live and lay eggs in the folds of the clothes, especially in areas adjacent to the neck, shoulders and lower back.

Clinical picture. The lice bites cause intense itching; sometimes the eruption in form of urticarial elements can appear. In result of itching in the areas of lice parasitizing the scratches covered with bloody crusts appear, which are often complicated by the secondary pyococcus infections (impetigo, follicles, boils,abscesses), eczema. During long-term parasitic process the skin thickens and become dry (lichenification).

Diagnostics. To diagnose pediculosis, the dressing should be examined for the presence of the lice and the clinical picture should be appropriate.

Treatment. Treatment involves clothing disinfection (such as ironing, boiling, use of the spray "A-PAR", "Para-Plus" etc.) and the following shower of the patient.

Pubic or crab lice *(Pediculus pubis)*, differ from the head and body lice by a smaller size (male is 1 mm, female is 1.5 mm) and round form (look like crabs). The places of parasitizing are mainly area of pubis, perineum, scrotum and anus. In case of people with excessive pilosis, the pubic lice can migrate to the chest, in the axillary cavities, on the

	beard and eyebrows. There, they are attached to the skin by means of craw-like formations. With their curved legs the parasites cling to the lower parts of the neighboring hairs. The pubic lice do not affect scalp. Small nits are found on the hair. Pubic lice are visible to the naked eye as greyish-brown spots with size of a pin's head near the base of the hair. Pubic lice infestation occurs, mainly, through sexual contacts, but as an exception, it can occur during visiting public bathes or through the bedding. From time to time in pubic lice, the phenomena of eczematization appear on the skin (especially on the thighs) in the result of scratching and use of irritating solutions and ointments. **Clinical picture.** Pubic lice cause intense itching with their bites, which is the reason of excoriation and bloody crusts appearance. Blue spots *(maculae cocruleae)* with a diameter up to 1 cm of round or oval form appear in view of the line in the places of lice bites on skin of the abdomen, inner thighs and sides of the chest. The appearance of the spots is the result of the mixing of the patient's blood and lice saliva when biting. The blue spots do not disappear during diascopy, which is a significant sign in differential diagnostics from roseolous syphilides and saprotyphus. **Diagnostics.** Pediculosis is determined on the basis of the presence of the parasites and nits, as well as blue spots, in the places of the bites on the skin of the abdomen, inner thighs and sides of the chest. **Treatment.** Treatment of pubic pediculosis is in the removing of the hair from the affected areas and rubbing of the 33% sulfuric ointment, or 25% emulsion (cream) of benzyl benzoate during the following 3-4 days, after that the patient should take a shower with a soap and change clothes. Last time the sprays containing permethrin are successfully used for the treatment of the pubic pediculosis.