THE SKIN - THE LARGEST OF THE BODY'S ORGAN

The skin, enveloping the body, is man's largest organ. Being the part of the body which is in touch both with what goes on in the body, and with the world surrounding it, its condition often reflects changes in both areas.

The doctor's role, concerning himself with the skin - dermatology - takes account of its two main layers in its diagnostic and therapeutic treatments [1]:

- the actual external skin (cutis)
- and the fat tissue lying beneath it (subcutis).

Hair and nails are considered as ancillary structures of the skin: their illnesses come under dermatology.

The Functions of the Skin [2]:

- a protective organ against external influences and against water loss from within. The fatty layer formed by secretions from the sebaceous gland improves this.
- a regulator of body heat by releasing heat and evaporating water.
- through its sweat glands end products of metabolism - urea for example- are released.
- a breathing organ (1 to 2 per cent of total exchange of gases).
- a sense organ.

Diseases of the skin:

For the most part the incidence of skin disease is underestimated. Every seventh diagnosis made by the practising doctor is a skin disease -that means that German doctors for example are consulted about 80 million times because of skin diseases [3]. A health study in Vienna showed that almost one third of the population suffers from skin disease [4].

Only in recent years has there been an attempt to investigate for possible damaging effects to the skin every single chemical substance used in industry and in the environment. However this has mostly not been until the existence of grounds for suspicion, that a substance might evoke skin damage [5].

Direct contact with the poisonous substance mostly leads to illness. 90 per cent of the injury to the skin caused in employment is therefore concerned with the hands [6]. In our everyday lives we are confronted with materials which could provoke skin reactions. Washing and cleaning agents, glues, herbs and spices, cosmetics, toiletries, dyes & colourings, preservatives, film developer, fertiliser etc. - all of these acquisitions could each in their own way be causes of skin damage [7].

Medicines too can cause skin reactions. As with the most wellknown example - penicillin- many medicines have skin reactions as a side effect [8]. Often the products themselves which are offered to treat skin can trigger skin problems. The antibiotic Neomycin which is contained in many skin ointments causes allergic skin reactions, for example, in up to 15 per cent of patients [9].

The following substances cause skin reactions in a relatively high percentage of cases : anti-fungal agents such as dichlorophen and hydrochinoline which are often found in deodorants; Koraya rubber as a component of dressings; lanolin as a basis for ointments; parabens as a preservative in creams and ointments. Specialist advice is that these could be replaced without exception by other products which carry no danger [10].

There are two forms of bodily reactions to contact with poisons:

- the allergic reaction of the body. It occurs mostly after prolonged contact with the substance concerned. Once the reaction has taken place , the skin reacts to each recent

contact with this substance.

- the immediate reaction to poisonous substances:

Whilst in the first case there must be a disposition present, which is different from person to person, with certain substances everybody has an immediate skin reaction to them. Individual susceptibility with allergic appearances on the skin is essentially a result of lifestyle, sensitivity, consumption of medicaments, environmental influences and other everyday factors.

The increased occurrence of allergic illnesses in the last few years is alarming [11]. The physical factors for triggering and for the course of skin diseases are not well researched. The reaction of the environment to "repulsive" or "ugly" skin damage leads in every case to further strains, which could have a negative influence on the course of the illness [12].

Treatment:

Prevention and finding of the sources would probably be the most important treatment. An exact diagnosis is therefore a necessary prerequisite for each treatment [13].

Obviously certain doctors do not keep within these ground rules. Despite the warnings of almost all the experts of the high probability that the ill-considered use of for example, glucocorticoid ointments itself causes skin damage [14], the turnover figures lead us to conclude that all too many patients are simply being dispatched with these "wonder drugs". Investigations have shown that German doctors for example, prescribe a glucocortocoid preparation for almost every second diagnosis of skin inflammation [15]. In many cases these substances are used in illnesses - for example skin infections - where they are even contra-indicated that is they should expressly not be used for this illness.

For the patient however it is not only the active ingredient of a skin product that is important. As already mentioned, other components such as emulsifiers, preservatives, and ointment bases can themselves be triggers for skin reactions [16]. All ingredients should be given then on a good skin preparation.

Inflammatory or allergic skin diseases:

Perhaps the most frequent symptom of all skin illnesses - more than 80 per cent of all eczema patients complain of them [17] - is :

Itching (pruritus) [18 19 20]

Itching is a subjective sensation restricted to the skin, as everyone knows.

Itching is, in most instances, brought about by a basic skin disease (for example psoriasis, neurodermatitis, scabies etc.) or an illness of the inner organs. Even medication can cause itching as an unwanted side effect.

General itching without change to the skin [21, 22]:

is frequently a first indication of an illness of the inner organs (e.g. liver, kidney, diabetes, blood, lymph glands).

If older people complain of itching, and there is no visible change in the skin, then usually it is a question of so-called age puritis (= age itch). Of course there is always a nagging doubt that a systemic illness may be present (= illness which affects the whole body, not only the skin), mostly it is however simply the drying out of the skin which affects this age group, and leads to itching. More curiously thought is rarely given to such a seemingly banal cause - the most frequent cause of itching. Accordingly foolishly medicines are prescribed where a simple skin care treatment would bring relief.

Treatment [23, 24, 25]

Basically with the external treatment of itching preventive care is of the greatest importance. This applies as much to dried out skin in elderly people as to the completely normal

looking skin of the so-called atopic dermatitis (= eczema without proven cause). So-called foundation creams, baths with oil additives, limiting bath time, optimal water temperatures (about 35 degrees Celsius), avoidance of too frequent washing with soap etc. can help to avoid the use of expensive and mostly ineffective medicaments.

Treatment of itching starts preferably with a search for the cause, since frequently the itch disappears through specific treatment (of eczema or scabies or nettle rash). Formerly the following measures were available with this reservation:

1. Internal treatment:

Most preparations taken internally (as tablets, dragees etc.) contain so-called antihistamines [26,27]. That is active agents which are specifically against histamine. Histamine is a carrier agent in the human body, which is important for the functioning of certain body functions (for example for triggering production of gastric juices). Histamine can also have a part to play in allergic skin reactions but is in no way the only cause of them. Therefore the use of antihistamines if often only small.

The time at which they are taken is important: if the aim is to achieve a convincing result then the medication must be taken before the expected itching attack.

All antihistamines have one more or less pronounced side effect: they induce drowsiness. The higher the dose, the drowsier one becomes [28].

Taking glucocorticoids:

As tablets, dragees etc in the treatment of itching they have no business here (exception: severe cases of urtikaria = hives, which are accompanied by shortness of breath and difficulty in swallowing.) Combination preparations containing glucocorticoid are - according to specialist writings "intern-like practice" - or to be avoided [29].

Substances generally used as pain killers both those with so-called central effect (morphine type) and those which are antiphlogistic (aspirin for example etc.) can only make the itching worse.

2. External treatment: [30]

An important principle in external treatment is based simply on a "suppressing mechanism": an unpleasant sensation is replaced by another pleasant or less unpleasant one [31, 32]. Scratching itself brings a certain relief even if a local pain appears at the site of the itching.

It behaves in a similar way here to externally used substances. They bring about a feeling of "cold" (water in lotions, gels, creams) or "heat" (irritants: Phenol, Resorcin, Urea). Local anaesthetics (= active agents for localised deadening, for example, contained in Anaesthesin, Anaestherit, Nupercainal etc.) prevent the main nerves from passing on the itching to the central nervous system. However they must be present in a minimal concentration, in order to be effective (Benzocain for example in at least 10% concentration) [33].

Antihistamines in externally used preparations (for example in Corto Tavegil, Dermodrin, Fenistil, Hustaxin, Pragman, Sandosten calcium, Soventol, Soventol H, Systral, Tavegil, Tuttozem spezial etc.) are of dubious value, since usually treatment only begins with the onset of the symptoms and obviously the necessary concentration of the active agent in the skin is not achieved either. Such preparations are accordingly not to be recommended [34].

Glucocorticoids for wearing on the skin (for example Betnesol V, Betnesol VN, Betnovate, Delphicort, Dermatop, Dermovate, Dermoxin, Diproderm, Diprosone, Emovate, Hydrocortisone Mago KG, Hydrocortisone Linz, Kalbanimat, Neriforte, Nerisona, Sermaka, Synalar, Topisolon, Topsym, Ultracur, Ultralan, Vaspit, Volon A, Volonimat etc.) should only be used in reasonable exceptional cases for itching because of numerous side effects.

Inflammatory skin diseases (Contact dermatitis, eczema) : [35]

Contact dermatitis, also called eczema, is the most frequently observed skin disorder.

This has lead to almost every skin abnormality being called eczema for simplicity, so as to fulfil the requirement of the doctor and patient for a "clear" diagnosis.

Generally one understands from this an inflammatory non-infectious reaction of the skin to mostly externally effective (= exogenous) itching. "Experts" distinguish between allergic and non-allergic (toxic) types.

Treatment: [36, 37, 38, 39]

The most important treatment consists of avoiding contact with allergenic or poisonous substances - which is easier said than done today. For example gloves are sensible with eczema on the hands. One should however note that protective gloves are sometimes considerably permeable to substances such as methanol, acetone, chloroform, benzene, anilin, tetramethylene oxide and even water.

A specific therapy can be supported by further general measures. Careful washing and bathing is part of this: soaps should be avoided , for cleansing the skin Syndets(= synthetic washing materials) are preferable (for example Balneum Hermal, Dermomild, Dermowas, Eubos, Satina, Seba med, Sebopona etc.)

Medicaments:

It is wrong to "simply" use in each case a glucocortocoid containing ointment or cream. The eczema "improves" itself after a short time, the side effects won't be long in coming.

In the acute phase on the other hand - that is if the skin is reddened and suppurates- ointments containing glucocorticoid are reasonable for at most two weeks. If no improvement has occurred by then there is some doubt as to whether the diagnosis is correct in general. Not everything which is red and suppurates is eczema. But if it is something else, for example a skin infection with bacteria or fungi, then it must be treated differently.

Moist bandages are also helpful in the acute phase (water, tan substances) or lotio alba aquosa (prepared at the chemist's).

In the second phase marked by a relative return of symptoms low fat preparations or "creams" are appropriate.

If it has proceeded further with increased dryness and formation of flakes, one then transfers to more fatty preparations, ointments for example. In many cases coal tar preparations (polytar for example) are used for the treatment of inflammatory skin illnesses [40].

Endogenous excema (Neurodermatitis, dermitis atopica):

Endogenous means very little is known - at least until now - about the cause. Endogenous eczema frequently begins amongst babies and is essentially a disease of youth, and there is a slim chance that it "is grown out of" after puberty.

Climate (sea or mountain air obviously favourable), clothes (pure wool and pure synthetics not favourable), water and soap (unfavourable fat removal from the skin) influence alone or together the condition of the skin.

Occasionally there is a susceptibility to some foods [41, 42]. This shows itself within a period of to 2 hours after eating, in the form of a severe itching occasionally accompanied too by reddening of the skin and the formation of spots. This itching provokes scratching, which damages the skin again, and intensifies the itching etc. etc. Therefore it is worth keeping a diary of food eaten. With the assistance of such a record when the symptoms appear it is easier to make connections to specific foods. A further possibility is allergy testing by a skin specialist.

One important report is mostly "forgotten" by orthodox medicine, even if patients and members frequently know about it and many doctors have a vague notion of it: patients with endogenous eczema obviously have a quite distinct personality structure with which they are reacting to "strains" [43, 44, 45, 46].

Skin disease is involved in the "processing" by psychological conflicts, the skin interacts

and becomes, more than in other people, "window on the soul". Treatment; [47]

In the forefront of treatment should be the care of the mostly very dry skin. Oil baths and fat enriched ointments are reasonable for this. With severely inflamed skin similar treatment principles apply as with inflammatory skin illnesses.

Psoriasis: [48]

Psoriasis is one of the most common skin illnesses. About 2 per cent of the population are afflicted with it. It is an inflammatory and scaling skin complaint, which familiarly occurs in large numbers. There is a 25 per cent probability that children who have one parent suffering from psoriasis will become ill with the disease. The probability increases to 60 to 70 per cent if both parents were afflicted.

I M P O R T A N T :

PSORIASIS HAS NOTHING - NOTHING AT ALL - TO DO WITH INFECTIOUS ILLNESS !

Therefore since this illness is not catching precautions in this respect in the workplace (for example food outlets, guest houses) or in leisure (swimming baths) are inappropriate. The sometimes self inflicted isolation and withdrawn behaviour also caused through ignorance, is a type of restriction on freedom , which is unworthy of our enlightened society.

Even when there is very probably an inherited affliction it can be that the illness never breaks out, or perhaps once in a lifetime. It can also manifest itself more frequently, and even become chronic. Inherited problems which lead to amended active behaviour of the organ of the skin, are ultimately unknown in orthodox medicine and cannot therefore be treated causally by this means. Today therefore many specialists are asking whether and if so which agents cause an outbreak of the illness, and if anything can be done to influence these factors. A distinction is made between endogenous(= coming from within) and exogenous (coming from without) provocation factors (=trigger factors, so-called restimulants). Counted amongst the endogenous provocation factors are infectious illnesses, even those seeming as banal as a sore throat (=inflammation of the throat) , flu, bronchitis and others: also internally taken medicines like lithium salts for example for "treating depression", antimalarial products and so-called betablockers, which are widely applied as heart and high blood pressure products.

The nourishment situation can also play a part as psoriasis sufferers are often overweight, in any case psoriasis is less often evident in times of external want (war and post wartime). Apart from alcohol to which a worsening effect is attributed, there is no specific known nourishing factor, making nonsense of a psoriasis diet. If heightened uric acid values are detected in the blood, then this is attributable to the increased turnover of skin cells in acute psoriasis phase. Therefore it should not usually be pointed to as a symptom of gout. Accordingly this laboratory symptom should not be treated with medicine to reduce uric acid values (for example Allopurinol, Bleminol, Epidropal, Gichtex, Narcaricin, Remid, Uricovac, Uripurinol, Urosin, Uritas, Zyloric etc.). Other external factors play an important role as triggers (restimulants) and most probably above all the physical mechanic ones. Since for example the psoriases clusters frequently flair up on elbows and knees, this should be referred back to the increased mechanical strain there. Further provocation factors are conditions which irritate the skin, such as for example injuries, operation scars, burns.

Treatment: [49,50]

With psoriasis this means a chronic skin disease, having "no cure" formerly with orthodox medicine. Treatment can be externally, internally or a combination of both, but preference should be given to external treatment despite the inconvenient expense. The beneficial effect of sunlight on psoriasis has long been acknowledged. Anyone suffering from

this illness should therefore spend his holidays , where possible, in a sunny climate.

Preparations containing salicylic acid:

Products containing salicylic acid are used to remove scales (for example Psoralon, Salicyl-vasogen etc.)

Dithranol: [51]

One substance used for a long time is Dithranol, which is contained in a range of preparations together with salicylic acid (for example Psoradexan, Psoralon MT, Stielasan, Warondo Psoriasis ointment etc.) The disadvantage is the discolouration of clothes and of healthy skin produced by this active agent.

Tar preparations: [52]

have an anti-psoriasis effect: however they are frequently used in combination with Dithranol or with UV light radiation (preferably with both). The treatment with tar preparations is problematic since both the discoloration and the unpleasant smell can have an offputting effect under ambulent conditions on the surroundings.

Light therapy:

Finally one relatively harmless treatment method is light therapy described as "UV-B", which may however not be combined with the medicine Psoralon, because this can lead to severe skin damage. With light therapy, which should be discussed with a skin doctor because of the possible chronic light damage, when it is being carried out at home with one's own lamp, good preventative results can be obtained..

Glucocorticoid preparations:

Amongst these belong for example Betnesol V, Betnesol V N, Betnovate, Delphicort, Dermatop, Dermovate, Dermoxin, Diproderm, Diprosone, Emovate, Hydrocortisone Mago KG, Hydrocortisone linz, Kalbanimat, Neriforte, nerisona, Sermaka, Synalar, Topisolon, Topsym, Ultracur, Ultralan, Vaspit, Volon A, Volonimat etc.). These should be avoided in psoriasis therapy, because after discontinuing the preparation there is usually a relapse, sometimes worse than before. Then glucocorticoid is sometimes used again, and then chronic glucocorticoid damage is unavoidable. The use of such products is only sensible in well-founded exceptional cases (for example head or nail psoriasis).

Internal therapy:

As opposed to external therapy internal therapy is easier, also there are often side effects. Systemic glucocorticoid (= glucocorticoids as tablets or injections) are always and without exception contra-indicated, that is **they should not be used under any circumstances** [53]. They interrupt the psoriasis momentarily , in the long term the psoriasis gets worse.

The so-called oral photochemotherapy ("PUVA" = psoralen & UV light) [54] is based on the combined effect of a preparation which is swallowed, Psoralen, which enriches itself even in the skin with UV-A light. The effectiveness of this therapy is not contested. However the side effects are considerable (eye protection is urgently advised). Because of the increased risk of skin cancer (contested in orthodox medicine), some doctors are very reticent about this therapy. Others do not use it all for psoriasis. This therapy should only be applied in such cases where all other treatment methods have failed, as long as the risk of a long term application is explained.

The so-called retinoids (= vitamins A acid family) have proved their worth as a new possibility in psoriasis therapy - here particularly Etretinat (for example Tigason etc) [55, 56, 57].

With defined forms of psoriasis (the so-called psoriasis pustulosa = outbreak of "pustule" psoriasis) it is the "product of choice" with other forms the scaling influences it - further healing only occurs hesitantly . Better results can be achieved with combinations of the above-listed conventional types of therapy.

The following **side effects** can occur: inflammatory dry roughening of the lips, hair loss,(which regrows), disruptions of liver function (increase in blood fat levels). The product should be avoided in pregnancy, since the preparation damages the development of the embryo. If it is taken at the same time as the pill the doctor should be consulted as to whether that particular "pill" is processed more quickly in the body because of the Tigason and thus becomes ineffective [58].

Skin products containing glucocorticoid :

In the opinion of the German Medicines Commission and of many independent scientists glucocorticoide should only be used in special and clearly delineated cased [59].

Glucocorticoids are hormones, which are normally produced in the adrenal cortex of man, but long since have been produced artificially. Their proven inflammatory and growth restricting effect is much advertised by the pharmaceutical companies. In so doing it is often "forgotten" that these preparations often have **serious side effects**. They overcome inflammations but do not heal the underlying illness. This can lead with gluco corticosteroids to the early inhibition of skin inflammations which point to severe illnesses like syphilis, tuberculosis or malignant skin tumours for example. If the skin is treated for the first time it is also difficult for experienced skin specialists to recognise the cause of the skin inflammation [60]. A leading German skin specialist Professor Heinrich Ippen from Gottingen, accordingly warns in his numerous journals that gluco corticosteroid may be used only after an unambiguous diagnosis [61]. If the actual cause of the skin illness is sought it is often shown that the use of these strong medicines is not necessary.

THE USE OF COSMETICS CONTAINING GLUCOCORTICOID IS LIKE AN "ATTACK ON FACIAL SKIN" [62]

" The insidiousness of corticoid is ", explains Professor Ippen, " that it frequently can have a symptomatic effect even with clear contraindications (also in areas of application where it may not be used - a A)" [63].

Certainly only in passing. Then the effect changes and the falsely treated illness often gets worse still. Professor Ippen numbers amongst these insidious areas of application scabies, certain suppurating and bacterial skin infections (impetigo = suppurating scaly, infectious frequent skin illness mostly occurring in children with the formation of blisters of spots and formation of secondary crusts. Particularly noticeable in the face and on the hands but also where there is scratching). Ertythrasma = chronic skin disease, which is caused by the coryne bacterium minutissium and remains confined to the skin. Favoured by men on the upper inner thigh , more rarely armpits are affected , anal folds, folds of the belly and various fungal illnesses (yeast fungus and thread fungus) [64].

The journal "The Lancet" also points to the fact that gluco corticoids should be avoided with acne, "Kupferfinnen" (rosacea), nettle rash (urticaria) and infections of the skin (through bacteria, viruses or parasites) [65].

Utmost care is requested in using gluco corticoids on suckling babies , on the face (butterfly eczema) in the genital area, on the under thigh and in changes in the nipple.

The wearing of medicines containing gluco corticoids is especially dangerous around the eyes, since this can bring the arising of green and grey stars (glaucoma and cataract). There are different sorts of strong gluco corticoids. The stronger the particular effect, the larger the risk of unwanted side-effects.

In the medical specialist literature these substances are divided into four groups:

- Dermoxin belongs to the strongest of the preparations
- strong products are for example Betnesol, Nerisona and Lellin.

- average strength for example Sermaka
- weaker glucocorticoids are all hydrocortisone preparations (for example Alfason, Daktacort)[67].

Graeme Avery , author of the comprehensive reference book "Drug Treatment" maintains by contrast that the effective strength is quite dependent on the preparation and doseage of the glucocorticoid preparation in question. So for example a strong , average or weak ointment could be mixed up from Betnesol. Only hydro cortisone preparations cannot be adapted to very strongly effective glucocorticoids, whereas Dermoxin is still one of the strongest glucocorticoids even in thinned form [68].

Essentially the following applies:

It is always to use the weakest preparation which is still effective [69].

A number of skin specialists know of the dangers of gluco corticoids and thin the ointments themselves. Once again this does not please many pharmaceutical companies. The independent "Transparenz Telegram" complains: "the manufacturers take great pains in every case to produce very refined vehicles (active agent carrier substances) so that the preparations cannot be thinned without more ado. It would be more sensible if the manufacturers would offer large, cheaper packages with weaker and less dangerous substances" [70].

The strongest preparation should only be used after it has not first been possible to achieve the desired success with all others. In the shortest time possible (within 48 hours) a reversion to weaker medicine should always follow.

Since glucocorticoids are quickly effective there should be a weekly check that their further application is still required. There is a great danger that a "steroid dependancy" of the skin may arise - as soon as the preparation is discarded then it flairs up again. For this reason a more long term treatments should not be ended suddenly. One should allow it to "fade away" [71].

All of these precautionary measures and restrictions on application should be observed at all costs since there have been **numerous side effects** noted even with glucocorticoids worn next to the skin. Frequently it gets to the stage of an uncureable "ageing of the skin" (atrophy) - the face is most susceptible, then the neck and the back of the hand. Even younger people can get such an "old skin". Just as frequent are skin stripes (striae), worsening infections and other permanent skin damage (Teleangiektasiae = stretching and bending of thin walled capillaries and veins, which are accompanied by increased fragility of the vessel wall) [72]. Further side effects can be : so-called steroid acne, dot shaped to extensive bleeding of the skin and skin sores in the spots where the glucocorticoid ointment or cream was applied [73].

Glucocorticoids therefore frequently have this result, wherever they are used : SKIN DISEASES !

If glucocorticoids are applied to large areas of the skin, there can be additional side effects which only occur otherwise, if these strong effect anti-inflammatory substances are taken in tablet , or suppository form or in injections.

Gluco corticoids in combination with antibiotics or fungicidal substances

Among these preparations are for example Aureocort, Baycuten, Betnesol VN, Betnovate C, Cambison, Corti Refobacin, Daktacort, Daktar-hydrocortisone, Decoderm comp, Decterm trivalent, Delmeson, Diprogenta, Extracort, Jellin, Locacorten with neomycin, Moronal V, Myco jellin. Mycostatin,V, Pimafucort, Semaka N, Sulmycin, with Celestan V, Synalar N, Terra-cortril, Terracortril, Travocort, Volon A (with antibiotic) Volonimat (with antibiotic) Volonimat plus etc.

It is doubtful whether the combination of glucocorticoids with other substances (for example antibiotics or fungicides) is advantageous, in the opinion of the English medical council [74].

The medicine commission of German doctors recommends, instead of using combined preparations, a specific treatment for example with antiseptics (= substance with predominantly germ blocking effect which can be used for internal and external body surfaces or in wounds) or fungicides [75].

And the "Transparenz Telegram ", a reference work independent of industry, describes such combinations even as **"irrational and potentially dangerous"** [76].

Antihistamines on the skin:

Amongst these preparations are for example Corto travegil, Dermodrin, Fenistil, Histaxin, Pragman, Sandosten calcium, Soventol, Soventol H, Systral, Tavegli tuttozem special etc.

Antihistamines for wearing on the skin **should not be used, because they can cause over susceptibility reactions** and moreover - even above all - only show a very slight effect (advice of the British doctors and pharmacologists association) [77].

Tar and shale oil preparations:

Since glucocorticoids have been available in medicine, tar preparations are not so frequently used. However with severe eczemas they are preferable to all other substances as before,(medicines commission of German doctors) [78].

Tar and shale oil preparations relieve itching and are used in treating psoriasis with UV rays as a pretreatment of the skin.

Shale oil preparations are appropriate (for example Ichtho bath ichtholan, Ichthyl oil, Leukichtan, Thiosept etc.) as well as more purified (for example Lanaftal) or raw coal tar (pix lithanatracis or liquor carbonis detergens)

Coal tar is contra-indicated because of its slight effectiveness and occasionally occurring allergic skin appearances [79].

Side effects : tars and shale oils have a pronounced odour. In certain cases they cause skin allergies , delay the healing of wounds and they cause skin itching in light (photo sensibility) [80].

A possible risk of cancer with tar preparations is disputed in specialist journals [81, 82].

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