



## Hazards of some skin disease due to environment: A brief review

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### Abstract

The Importance of the study was to obtain hematological parameters in relation to age, sex and behavioral values in wild-living pigeons. We found the significant differences in the erythrocyte count, hematocrit, hemoglobin concentration and erythrocyte sedimentation rate in relation to age of pigeons. There were no differences in hematological values between males and females. The leukogram and H/L ratio did not vary by age and sex in pigeons. As far as we know, this is the first study in which the morphometric parameters of blood cells in pigeons were presented. We found extremely low concentration of lead in blood (at subthreshold level). No blood parasites were found in blood smears. The analysis of body mass and biometric parameters revealed a significant difference dependent on age and sex. No differences in the scaled mass index were found. Our results represent a normal hematologic and blood chemistry values and age-sex related changes, as reference values for the pigeons. The investigation on "General and reproductive behavior of Indian domestic pigeon in relation to hematology" has been specially aimed to focus on over all behavioral pattern related to reproduction, growth and development of the pigeon with physiological adaptations and variations in corpuscular haematological parameters. Present research has been designed to find out variation corpuscular haematological parameters related to reproduction, growth, development and behavior of the domestic or feral pigeon.

**Key words:** Skin, Kustha, Environment, Air, Pollution, Ayurveda,

### Introduction

Working populations constitutes the major portion of the community. They determine the progress and development of the country, in the other words their health status is considered as a sensitive indicator for the development of the country. Just like home, the work place is also an important environment for an earning person. Such a person spends nearly 6 to 8 hours a day in the working place till the retirement for about 3 decades. There are 100 million occupational injuries causing 0.1 million deaths in the world according to WHO. In India it is estimated that 17 million occupational injuries and 45000 fatal injuries occurs every year (Community medicine with recent advances). The prevalence of skin disease in India is 10 to 12 % of the total population with eczema and psoriasis being the major contributor. Skin disorders are one of the burning problems of modern scientific era. The skin and skin disorders are beautifully described in Ayurvedic classics like Charaka Samhita, Sushrut

Samhita, Astang Sangrah, Astang Hriday etc. Skin is one of the five 'Gyanendriya- adhithana' ( ch. su. 8/10) as described in Ayurvedic texts, which is responsible for 'Sparshagyanam' or touch sensation; therefore it plays a great role in physical and mental wellbeing of any individual. As the interface with the surroundings, it plays the most important role in protection against pathogens. Its other main functions are insulation and temperature regulation, sensation and vitamin D and B synthesis. Patients suffering from skin disease always experience physical, emotional & socio-economic embarrassment in the society. A popular adage that skin patients are never cured & never creates an emergency. Generally 10- 15% of the medical Practitioners deal with skin disorders patients and it is the second commonest cause of loss of work (Charaka Samhita, Sutra sthana, Indriyopkramriya 8/10; 2008).

**Environmental factor related to skin disease** (Community medicine with recent advances)

The agent factors are grouped under the following groups-

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- Physical agents- such as heat, radiation, moisture, humidity etc
- Chemical agents- acid like lemon juice, alkali like detergents, dyes, solvents like bleach cream, grease, tar, pitch and minerals like arsenic, chromium.
- Biological agents- such as viruses, bacteria, fungi, and certain parasites.
- Plant products- such as leaves, fruits, flowers etc.
- Sensitizing agents- these act as allergens such as photo developing materials, formalin, synthetic resins, insecticides, fungicides, etc.

### Occupational dermatosis

There are the diseases of the skin arising out of the occupation or during the course of employment. The occupational dermatoses account for 40 to 70 percent of all occupational disease, depending upon the nature of the occupation. The incidence has been increasing every year due to industrial areas. Some most common environmental diseases are listed below:-

1. Contact Dermatitis (Vicharchika) – A common dermatological problem, most frequent in the industrialized world. Etiology- Type IV, DTH response, simple chemical, more frequent ones include nickel, cobalt, chromium etc. Plants such as *Parthenium hysterophorus* in India. Cosmetics, Fragrances, hair dyes, frequent changing of skin products such as soaps, moisturizers etc (Bhutani's color atlas of Dermatology).
2. Photo contact allergic dermatitis- Needs contactant and ultraviolet rays (UVA) for dermatitis to develop. Probably related to neo antigen formation. Several plants with parthenium dermatitis exhibit photo aggravation of a purely allergic dermatitis. Or develop the dermatitis only on exposure to light (Bhutani's color atlas of Dermatology).
3. Tanning (Twak vaivarnya)- It is most often result a result of exposure to UV rays from sunlight or from other sources. Sun exposure is one of most damaging things we can do to our skin. Some people use chemical products which can produce a tanning effect without exposure to ultraviolet radiation, known as sunless

- tanning (Charaka Samhita, Chikitsa sthana 7; 2008).
4. Urticaria (Sheetpitta) - it is a skin reaction that causes itchy welts, which can range from small spots to large blotches several inches in diameters. It can be triggered by exposure to certain food like shellfish, fish peanuts, tree nuts, eggs and milk are frequent offenders. Other allergens like pollen, animal dander. Latex and insect stings, heat, cold, sunlight, emotional stress and exercise (<https://en.m.wikipedia.org>).
5. Folliculitis (Pidika)- It means inflammation of the hair follicle. It is caused by infection, physical injury or chemical irritation. Environmental folliculitis can be subdivided into Mechanical, Occlusion, Chemical folliculitis. Mechanical folliculitis occurs due to frequently in men and women who shave their faces or legs with a razor, particularly if they do so against the direction of the hair. Occlusion folliculitis results from blockage caused by exposure to topical products such as adhesives, oil, moisturizers etc. Chemical folliculitis is due to exposure to certain topical products such as coal tars (<https://www.mayoclinic.org/syc-20354908>).
6. Acne (Mukhdushika)- There are numbers of environmental factors that can cause acne, including pollution and exposure to oil and grease, which may clog pores and lead to pimples. Weather, heat and humidity, which increase oil production, are renowned acne triggers. The sun is another environmental factor that can cause acne, prolonged sun exposure increases the shedding of dead cells on your skin's surface. This causes plugged pores, which eventually become blackheads, whiteheads and pimples (<https://www.dermcoll.edu.au>).

### General pathogenesis of skin disease (kshudra roga) according to ayurveda-

#### According to Acharya Charaka-

Sudden change from cold to hot or vice versa without judiciously following the rules of gradual change: This causes Dushti in Swedavaha Srotas. Sudden diving in cold water after fear, exhaustion or sunlight causes the same effect (<https://www.proactive.com>) (ch.chi.7/5-6)



**According to Acharya Sushruta-**

Kushtha spreads from one man to another due to Prasanga, Gatrasamsparsa, Nihishwasat, Sahabhajanat etc Vagbhata have described the contagious nature (Aupasargika Roga) of Kushtha. Sushrut describes that (Agnivesha, Charaka Dridhabala, Charaka Samhita, Chikitsa sthana 7/5-6; 2008).(su.ni.5/32)

**Samprapti** (Sushruta Nagarjuna, Sushruta Samhita Nidana Sthana, Kushtha Nidana 5/32, 2005.): Acharya Sushruta has described the Samprapti of Kushtha is phenomenon of Avarana process First of all due to Doshaja and Karmaja Nidana Sevana, vitiation of Pitta or Kapha Doshas take place. This provoked Pitta and Kapha cause Avarana of Vata. Then provoked Vata moves Doshas through Tiryaga Siras and reach to Bahyamarga and vitiate TVAK, Rakta, Mansa and Ambu Dhatus. This Doshas and Dushyas produced symptoms of Kushtha, like Mandala and Vaivarnya of skin. (su.ni.5/3)

**Treatment (chikitsa)**

While explaining line of treatment for different varieties of Kushtha, Charaka has mentioned that all the Kushthas are caused by Tridosha, so the treatment is to be carried out according to the predominance of Dosha. The predominately vitiated Dosha should be treated first and the treatment of the other subordinate Dosha should be undertaken afterwards (Sushrut Samhita of Maharshi Sushrut, Nidana sthana, 5/3; 2010.). (Ch. Chi. 7/31-32)

- (1) **Sanshodhana chikitsa**:-According to Charaka & Vagbhata Shodhana should be carried out according to predominance of vitiated Dosha. For instances in Vata dominance Ghritapana, in Kapha dominance Vamana and in Pitta dominance Virechana and Raktamokshana are to be carried out. (Charaka Samhita, Chikitsa sthana 7/31-32; 2008.) (Ch. Chi. 7/39)
- (2) **Shamana chikitsa**:- Acharya Charaka has advised Shamana therapy with Tikta and Kashaya Dravyas after administration of proper Shodhana (Charaka Samhita, Chikitsa sthana 7/39; 2008).(Ch. Chi. 7/58)

- (3) **Some single drugs of kushtha**- Khadir, Chakramarda, Tuvrak, Nimb, Karanj, Haridra, Bakuchi, Kutaj etc.

**Discussion**

“Kushnati Vapuhu iti Kustham’ (ch.chi.7) is the derivation of the word Kustha (Charaka Samhita, Chikitsa sthana 7/58; 2008.) illustrative of the disfiguring nature of the disease towards the human being. Kshudra Kustha though involves only epidermis, its tendency of recurrences continues to pose problems to the physician. The environment we live in is a crucial factor in maintaining the health of our skin. I believe that a large portion of skin problems are due to irritants in the air such as automobile exhaust and smoke from chemical factories. When you consider added problems, such as dry and cracked skin, caused by harsher winter weather, you realised that your skin is assaulted by the environment all year round.

**Conclusion**

The recent ages have evidenced significant increase in skin related disorders. The most common causes include undue exposure cosmetics and skin care products, environmental pollutants besides infections. Common environmental skin diseases are skin tan, pigmentation disorders, dermatitis and acne. Ayurveda explains extensive remedial measures and emphasizes the preventive therapy in the form of Nidan Parivarjan and Pathya- Apathya, Yoga and Meditation in terms of Ahara (dietetics) and Vihara (behavioral and lifestyle modifications) and Manasa Bhavas (emotional factors).

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