

IMPORTANCE OF AYURVEDA IN OCCUPATIONAL HEALTH

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ABSTRACT

Occupational diseases are health conditions that arise due to prolonged exposure to harmful factors in the workplace, such as chemicals, physical stress, repetitive motions, and environmental hazards. Modern medicine often addresses these issues through symptomatic treatments, but *Ayurveda*, the ancient Indian system of medicine, offers a holistic approach that focuses on prevention, balance, and natural healing. This abstract explores the role of *Ayurveda* in the prevention, management, and treatment of occupational diseases. Additionally, *Ayurvedic* therapies such as *Nasya*, *Gandush*, *Anjan*, *Abhyanga*, *Shirodhara*, *Yoga* and *Pranayama* help in stress reduction, improving mental clarity, and boosting physical endurance. By integrating *Ayurvedic* principles into occupational health, workers can achieve better overall well-being and reduce the incidence of chronic occupational ailments.

KEYWORDS: Ayurveda, occupational diseases.

INTRODUCTION^[1]

The joint ILO/WHO committee on occupational health (1950) gave the following definition. Occupational health should aim at the promotion and maintenance of highest degree of physical, mental and social well-being of workers in all occupation; the prevention among workers of departure from health caused by their working condition; the protection of workers in their employment from risk resulting from factors adverse to health, the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological equipment and to summarize, the adaptation of work to man and of each man to his job in all occupation.

Occupational environment is the sum of external conditions and influences which are present at the place of work and which affects the health of the working population. There are three types of interaction in a working environment. These are man and physical, chemical and biological agents, man and machine; and man and man.

Man and physical, chemical and biological agents

- a. **Physical agent:** Physical factors in the working environment, which have adverse effect on the health are: Heat, Cold, Humidity, Air movement, Radiation, Light, Noise, Ionizing radiation. These factors act in different ways on health and efficiency of workers. Amount of working, breathing space, toilet, washing and breathing facilities are also important factors.
 - b. **Chemical agents:** These include large number of chemicals, toxic dust and gases, which are hazardous to the worker. They cause disabling respiratory illness, injury to skin and deleterious effect on blood and other organs of the body.
 - c. **Biological agents:** Workers may come in contact with to viral, rickettsial, bacterial and parasitic agent. Because of close contact with animals, their products, contaminated water, soil or food.
2. **Man and Machine:** Accidents are major problem in the industry. Causes of accidents in industries are unguarded machines, protruding and moving parts, poor installation of the plant, lack of safety measures. Working for long duration in unphysiological posture cause fatigue, backache, diseases of joints and muscles, impairment of workers health and efficiency.
 3. **Man and Man:** Psychological factors at work place (Human relationship among workers) includes type and rhythm of work, work stability, service conditions, degree of responsibility, job satisfaction, leadership style, security, workers participation, communication, welfare condition, degree of responsibility, incentives, system of payment, trade union activities etc.

Occupational Diseases are usually defined as diseases arising out of or in course of employment. Occupational diseases are classified as following.

I. Diseases due to physical agent

1. Heat: Heat hyperpyrexia, heat exhaustion, heat syncope, heat cramps, burns and local effects such as prickly heat.
2. Cold: Trench foot, frost bite, chilblains
3. Light: Occupational cataract, miner's nystagmus
4. Pressure: Caisson disease, air embolism, blast (explosion)
5. Noise: Occupational deafness
6. Radiation: Cancer, leukaemia, aplastic anaemia, pancytopenia
7. Mechanical factors: Injuries, accidents
8. Electricity: Burns

II. Diseases due to chemical agents

1. Gases: CO₂, CO, HCN, CS₂, NH₃, N₂, H₂S, HCl, SO₂ these cause gas poisoning.
2. Dusts (Pneumoconiosis)
 - a. Inorganic dusts
 - i. Coal dust : Anthracosis
 - ii. Silica : Silicosis
 - iii. Iron : Siderosis

- iv. Asbestos : Asbestosis, lung cancer
- b. Organic dust
 - i. Tobacco : Tobaccosis
 - ii. Cane fibers : Bagassosis
 - iii. Cotton dust : Bysinosis
 - iv. Hay/ grain dust : Farmer's lung
3. Metals and their compounds - Toxic hazards from lead, mercury, cadmium, manganese, beryllium, arsenic, chromium etc.
4. Chemicals - Acids, alkalies, pesticides
5. Solvents - Carbon bisulphide, benzene, trichloroethylene, chloroform, etc.

III. Diseases due to biological agents

Brucellosis, leptospirosis, anthrax, actinomycosis, hydatidosis, psittacosis, tetanus, encephalitis, fungal infections, etc.

IV. Occupational cancers: Cancer of skin, lungs, bladder.

V. Occupational dermatosis: Dermatitis, eczema.

VI. Diseases of psychological origin: Industrial neurosis, hypertension, peptic ulcer, etc.

AIM AND OBJECTIVES

1. To study Ayurvedic measures to prevent occupational diseases.
2. To study the concept of occupational diseases.

MATERIAL AND METHODS

References were collected from Ayurveda classics and various journals. These references are analysed logically and results are drawn.

DISCUSSION

The prime principle of *Ayurveda* is maintenance of health of healthy person and to cure diseased person. For maintenance of health, *Aahar* (dietary modification) and *Vihar* (lifestyle modification) are mentioned in *Ayurveda*. These include *Dincharya* (daily regimen), *Ratricharya* (night regimen), *Ritucharya* (seasonal regimen), suppression of *Dharniya Vega*, Non-suppression of *Adharniya Yoga*, *Sadvritta* (codes of conduct), *Rasayana* (rejuvenation therapy) etc.

1. Dincharya

Exposure to organic dusts, chemicals, metals or biologicals at work place can cause all types of allergic responses, which affects workers health. For promotion of health and prevention of diseases, the rules, procedures and methods given in *Dincharya* should be followed in day-to-day life by everyone. Some of these are as follows:

- a. *Anjan* removes burning, itching, dirt and eliminates watering, pain of eyes, provide brilliance, and vision tolerance to wind and sun rays and prevents eye diseases. Therefore, workers should apply *Anjan* regularly.^[2]
- b. *Nasya* done after getting in morning removes dirt of the nasal passage collected in night and provides cheerfulness. *Nasya* should be done before going to work, hence dust or smoke does not harm, because of moistening of the nasal passage. *Nasya* done after physical exercise removes tiredness.^[3]

- c. *Gandush* should be done repeatedly with cold water, it removes *Kapha* and *Mala*.^[4]
- d. *Abhyanga* should be practice daily, it delays aging, removes tiredness and cure Vata disorders, improves vision, nourishes body, increases longevity, etc.^[5]
- e. Daily practice of *Karna Puran* prevents *Vataja Karna Roga*, stiffness of neck and jaws, (*Uchhai Shruti*) hard hearing and deafness.^[6]

2. Ritucharya (seasonal regimen)

According to season, everyone should take wholesome diet (Pathyakar Ahar) and to follow wholesome regimen (Pathyakar Vihara). Along with this everyone should avoid unwholesome diet and unwholesome regimen.

Ritu Haritaki is a part of *Ritucharya*, season wise *Haritaki Churna* should be taken with different adjuvant (*Anupan*).

Ritushodhan is another concept in which Panchakarma is done in season in which doshas are in *Prakop* state. *Panchakarma* is a method of cleansing the body, in which all accumulated toxin in the body are removed.

3. Suppression of Urges (Dharaniya Vega)

The wise person should suppress or control the urges of the mind are *Lobha* (great and improper desire), *Bhaya* (timidity anticipating danger), *Shok* (timidity due to death), *Krodha* (great hatredness by which the person feels as though burning like fire) *Nairlajja*, *Irsha* (desire to prevent the pleasure of others in things common to both, *Atirag* (more attachment, desire), if someone has desire of good health should control to hold these urges. But sometimes it is beyond our control to hold these urges like anger, grief, fear etc. As *Acharya Charak* said that, *Vishado Rogavardhanaanam*. Hence one desire of his well-being has to suppress Dharaniya Vega, otherwise it causes unwanted effects on body and bad deeds mentally, orally and physically.^[7]

4. Non-Suppression of natural urges (Adharniya Vega)

Urges are produced due to action of Vata Dosha, suppression of urges leads to vitiation of Vata and many kinds of diseases. As *Acharya Charak* said that, "*Rogah sarve api jaayante vegodeeran dharane*", means all types of diseases are occurs due to suppression of Adharniya Vegas.

Many times, we are busy in some important work, meeting, lectures or due to lack of arrangement or shy nature, we suppress natural urges. If we do if very often, we are likely to fall ill and frequent illness will shorten the life span. There are thirteen natural urges mentioned by *Acharya Charaka* which should not be suppressed. These are urges *Mootra* (micturation), *Mala* (defecation), *Shukra* (seminal ejaculation), *Apan Vayu* (flatus), *Chhardi* (vomiting), *Kahvathu* (sneezing), *Jrumbha* (yawning), *Kshudha* (hunger), *Trushna* (thirst), *Ashru* (tears), *Nidra* (sleep), *Shram shwas* (breathing after exertion). One should always heed them because suppression of these urges is one of the important causes of disease and is detrimental to long life. At the same time, these urges should not be forced without call or desire.^[8]

5. Viruddhahar (Incompatible diet)

There are different types of incompatible diet such as *Samashana*, *Vishmashan*, *Adhyashana*. *Virruddhahar*: *Smashan* means when the wholesome and unwholesome type of food are taken together. *Vishmashana* (irregular food) means food taken too early or too late. If the food is taken again and again even before the previous meal is digested is called *Adhyashan* (overeating). Now maximum people are taking *Virruddhahar*, which do not help in nourishment of Dhatu

and it vitiate Dhatus and produce many diseases. It is unwholesome to the body, as acute or chronic poison, produces many types of diseases or may produce death. All the above-mentioned diet causes death or give rise to serious diseases. In today's era, due to modernization dietary habits of people are changed, most of people prefer fast food, junk food or processed food, high caloric food along with above mentioned all types of dietary habits, which is harmful for the body.

Overeating or eating heavy food, oily food, non-fresh food (packed food), eating incompatible food (*Viruddhahar*), excessive eating of sweet, salty, fermented, oily, spicy food, stress, anxiety, worries are the causes which are responsible for *Dosh Prakop*. Overeating is also one of the main risks for cancers.

6. Not following (dietary rules)

Majority of people also not follows rules of taking food (*Aharvidhividhan*) and water and which is also important for prevention of all types of diseases.

7. Rasayan

The word *Rasayana* refers to nourishment and is helpful in the formation of best qualities of Dhatus, like cells and tissue of the body, which leads to an improvement in physiological state, better immunity, strength, mental competence and longevity. Thus, *Rasayana* therapy has a comprehensive scope for positive nutrition, immune enhancement, longevity and sustaining of mental and sensorial competence. Besides the promotion of mental and physical health and rejuvenation potential, it offers a preventive role against all ranges of diseases through improved immunity and bio-strength.

Rasayana Tantra is the modality of Ayurveda, which describes the methods of withholding ageing, increasing lifespan, intelligence, strength, and capacity to get rid of diseases. The therapy which sustains ageing and prevents the disease is known as Rasyana.

Rasayana acts as antioxidant (*Amalaki*), Immune-modulatory (*Guduchi*), Haemopoietic (*Amalaki*, *Loha Bhasma*), anti-aging (*Ashwagandha*, *Bala*), Neuroprotective (*Suvarna Bhasma*).

8. Purification of air

Research displays that some house plants can take in toxins from the air and purify the air. It includes bamboo, Erica palm, peace lily and money plants. Other methods may include use of beeswax candles, salt lamps or essential oils containing rosemary, thyme, oregano, tea tree, lemongrass and cinnamon.

Ayurveda has given details about various plants and measures in combating environmental impurities and sanitizing the environment. The ubiquitous and sacred Tulsi (*Ocimum tenuiflorum* L.) plays a vital role in absorbing pollutants. *Nimba* (*Azadirachta indica* A.Juss.) leaves boiled in water have detoxification properties beneficial for skin and hair. Turmeric having an anti-inflammatory property protects lungs from the toxic effects of pollutants.

Haritaki (*Terminalia chebula* Retz.) and ginger (*Zingiber officinale* Roscoe) too are beneficial for respiratory ailments. *Triphala*, with honey, reinforces immunity, restoring balance to the system. The herb *Pippali* (*Piper longum* L.) with honey purifies lungs and assists easy breathing.^[10]

The smoke (*Dhoopan*) emitted from burning like *Laksha* (*Laccifer lacca*), *Haridra* (*Curcuma longa* L.), *Ativisha* (*Aconitum heterophyllum* Wall), *Haritaki* (*Terminalia chebula*), *Musta* (*Cyperous rotundus*), *Twak* (*Elletaria cardamomum*), *Tamalpatra* (*Cinnamomum tamala*), *Kushtha* (*Sassuria lappa*) and *Priyangu* are used to purify air. *Shobhanjan Mooladi Agad* may be used for treating those affected by such pollution. Incidentally, in the past, many of these *Ayurvedic* drugs were part of grandmother's vast repertoire of home remedies that fortified households against various ailments. According to *Ayurveda*, three doshas govern the functions of the body. Things such as our diet, our lifestyle as well as our environment impact the balance between the *doshas* in our body. The types of *Doshas* in our body are *Vata*, *Pitta*, and *Kapha*. The belief is that every individual is born with a unique combination of doshas that influence a person's physical and mental traits. As cited before, our environment can have an impact on the balance between our doshas. Air pollution leads to an imbalance between the *Vata* and the *Kapha dosha*. Due to imbalance in both the *Doshas* leads to an increased formation of mucus that can clog the nasal passage and aggravate pre-existing issues.^[10]

9. Purification of land

Industrial processes can release unwanted material that contaminate the soil and ground water with toxic chemicals. Concept of *Bhumi Shodhan* is given in *Ayurveda*, which includes cleaning (sweeping), burning, grazing of cows, sprinkling of water (disinfectant), scraping and covering the land (*Lepan*). These methods purifies land.^[11]

10. Yoga

Yogic practices have exhibited significant immunomodulatory effects such as increase in production of immunoglobulins, activation of phagocytic functions, enhancement in humoral and cell-mediated immunity. It has also been found to reduce inflammatory cytokines such as IL-6, IL-1b, TNF-a, along with that it also shows to improvement in the levels of anti-inflammatory cytokines (IL-10 and IL-12) and anti-oxidant status of individuals.^[12]

Yoga induces neuro-hormonal modulation via HPA axis resulting in reduction of cortisol levels and balance in sympathetic and parasympathetic nervous system. Further, the practice of *Yoga* increases GABA levels stimulating the vagus nerve resulting in parasympathetic predominance and optimization of proper immune responses. Psychological stress, anxiety and deterioration of sleep quality have increased during the pandemic. These symptoms may be downregulated by the promotive effects of *Yoga* on melatonin secretion. Melatonin is a known anti-oxidant that plays an important role in improving sleep quality and ameliorating stress and anxiety. *Yogic* breathing techniques have also been found useful in improving lung functions in conditions with respiratory distress.^[12]

CONCLUSION

Ayurveda offers a holistic and individualized approach to managing and preventing occupational diseases, focusing on balancing the body's energies (doshas), detoxifying, and strengthening the immune system. By understanding the root causes of these diseases, *Ayurveda* emphasizes preventive measures such as diet, lifestyle modifications, and natural treatments to mitigate the adverse effects of environmental or work-related stressors.

Additionally, *Ayurvedic* practices such as *Panchakarma* (detoxification therapies), herbal remedies, and stress-reduction techniques (like *Yoga* and meditation) can provide relief and long-term management for various occupational ailments.

Ultimately, Ayurveda provides a sustainable and preventive framework for managing occupational diseases, enhancing overall quality of life and supporting long term well-being in the workforce.

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