

ERGONOMICS IN AYURVEDA- A CRITICAL REVIEW

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ABSTRACT

Ayurveda is referred to as a "complete health science" because it strongly emphasises maintaining good health and preventing illness in addition to treating current conditions. The preservation of health, or *Swastasya swastya Rakshana*, is the primary goal of Ayurveda. Ergonomics is the safe and practical design of objects for human use in a way that minimizes hazards. Although ergonomics is a relatively new field in the modern world, Ayurveda has discussed it in *Vishamasana* and emphasises the characteristics of furniture used, and various health conditions brought on by incorrect posture and seated patterns. Thus, this study is an initial attempt to clarify the risks associated with postural ergonomics, their impact on health, and how Ayurveda might help control them.

Keywords: Ergonomics, Postural defect, Occupational disorders, *Vishamasana*

INTRODUCTION

The applied science of ergonomics studies how to make objects that people use more efficiently and safely by strategically placing and designing them. Although the word "ergon" refers to "work," this sci-

ence is not just used in workspaces; it has also been used to construct ergonomic beds, chairs, and other furniture that will make daily tasks like sitting and sleeping easier. Inadequate understanding of ergo-

nomics results in ergonomic risks, leading to various health problems. To maintain proper posture and overall health, this knowledge is crucial about the many types of furniture used daily. *Vishamasana*, or incorrect posture, is considered necessary in the genesis of many ailments by Ayurveda. Additionally, an example of the most excellent furniture for preserving the best body is shown.

DISCUSSION

According to Ayurveda, using complex, nonergonomic furniture or *Vishamasana*, is thought to be an etiological factor in several ailments. Below is a discussion of a few of them.

Bhagandara

Highchairs with firm seats are considered a contributing element in *Bhagandara*.^[1] *Bhagandara* is correlated with the Fistula in Ano. After an Anorectal abscess, Fistula-in-ano frequently develops. An obstruction of the anal gland can lead to infection and the creation of an abscess, which is known as an Anorectal abscess.^[2] A fistula in the ano after an Anorectal abscess develops due to the continuous pressure that sitting on a hard, high seat puts on the pelvic and gluteal regions.

Arshas

Extended rides on hard seats and elevated seating are identified as contributing factors to the development of *Arshas* or Hemorrhoids^[3]. Extended sitting causes the tiny veins surrounding the anus and rectum to get stretched and lose their flexibility, as well as the gluteal muscles to spread out. The brittle veins then swell with blood, which causes Hemorrhoids.^[4]

Vatavyadhi

Incorrect sleeping and sitting positions are thought to be the root cause of *Vatavyadhi*.^[5] A variety of degenerative musculoskeletal conditions, such as peripheral neuropathy, radiculopathy, and joint pain, are covered by *Vatavyadhi*. Numerous excruciating musculoskeletal conditions, including sciatica and cervical spondylosis, are mainly brought on by poor posture. A person with good posture aligns their body to maximize physiological and biomechanical efficiency, minimizing the stress and overload that gravity's

impacts place on the support system. An upright posture shields the body's structural components against damage or abnormalities. A shift in posture can strain the spine's bone structures, muscles, ligaments, and joints and cause degenerative disorders of the spine.^[6] These illnesses severely impair agility and mobility, which lowers well-being.

Vataja Gulma

Incorrect sitting, sleeping, and walking postures are thought to be contributing contributors to the pathophysiology of *Gulma*.^[7] *Vatadushti* in *Koshta* is the cause of *Gulma*. *Gulma* causes pain, discomfort, and uneasiness in various chest and abdomen areas. Between *Hridaya* and *Basti Gulma* is a *Granthi* or mass that may or may not move and whose size may or may not change.^[8] It encompasses a range of conditions affecting five abdominal regions. *Apana* and *Samana vata* are the two primary *Vata* types in concern. Owing to incorrect sitting and sleeping positions, the *Vata* movement becomes imbalanced, experiences *Vimargagamana*, and results in *Vataja Gulma* in *Koshta*.

Garbhopaghatakara bhava (Contraindications during pregnancy)

It is not advisable to use high chairs or chairs with harsh seats and uneven surfaces when pregnant.^[9] Pregnancy causes changes to the spinal curvature, namely kyphosis (outward curvature) and lordosis (inward curvature). Research has indicated a notable difference in lordotic angles between pregnant and non-pregnant women's postures. Lower back pain (LBP) is thought to affect 56% of expectant mothers at some stage during their pregnancy.^[10] Pregnant women who use furniture with firm seats, uneven surfaces, or high chairs are more likely to experience spinal tension, which can lead to back pain and other issues. According to Acharya Sushruta, pregnant women should use the optimum bed for the health of both themselves and their unborn child. *Garbhini* should utilise chairs and beds that are relatively lower in height and soft and pleasant.^[11] This is said to lessen spinal pressure in expectant mothers and to prevent any mishaps caused by shifting sitting configurations.

Best ergonomic seating arrangement as per Ayurveda

The most ergonomic seat, according to Ayurveda, is one whose height shouldn't be too high or too low, as this causes discomfort for the user.^[12]

To sustain the individual's weight, it should be constructed using sturdy materials.

The following chart compiles the causative factors for ergonomic hazards in various health disorders as per Ayurveda.

	<i>Utkatasa-na</i> (High chairs)	<i>Kat-inasana</i> (Hard seated)	<i>Vi-shamasana</i> (Uneven surface)	<i>Dukhashayyasa-na</i> (Uncomfortable seats/bed)	<i>Prushayaa-na</i> (Sitting for long hours)
<i>Garbhopaghatakara bhava</i>	✓	✓	✓		
<i>Vataja Gulma</i>			✓		
<i>Vatavyadhi</i>				✓	
<i>Arshas</i>	✓				✓
<i>Bhagandara</i>	✓	✓			

Table.1 Different ergonomic factors in different diseases and conditions

Benefits of using a comforting seat/bed

A comfortable chair or bed relaxes the muscles and other tissues, reducing *Vata*, which excessive physical exertion increases. Strength and attention are improved, virility and libido are increased, and sound sleep is facilitated.^[13]

Ergonomic bed in treatment of *Nidranasha*

To treat *Nidranasha*, or insomnia, comfortable beds and seating furnishings are recommended since an ergonomic bed helps the body relax and promotes sound sleep.^[14]

CONCLUSION

In the modern world, ergonomics is a relatively recent field of study created as a response to the growing problems individuals were experiencing due to using items that put more physical strain on their bodies. Back then, Ayurveda acknowledged this issue and specifically referenced ergonomics about prevention, etiopathology, and therapy in its distinctive approach. Ayurvedic management will undoubtedly advance if ergonomic risks are considered in the etiopathology of many diseases and if such activities are further discouraged.

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