

# Designs on Ergonomics

Ergonomics is an important aspect of good health that is often overlooked, but can pose serious issues, says **Bindu Gopal Rao**



**W**hen Sonal Kapoor, an employee with an IT major in Bengaluru, noticed a tingling pain in her back and an altered posture, she was concerned. At an ergonomic workshop in her office, she consulted the expert to find that her wrong posture was causing the problem. She soon learnt a few exercises and corrected her posture before it could worsen.

## The Specifics

Ergonomics is traditionally defined as 'the study of people's efficiency in their working environment'. In contemporary terms, it tells us how the working population can fit in their workplace and look after their health while adjusting to the demands of their job. In the US alone, the direct and indirect cost to healthcare by back pain related to workplace comes to around 20 billion annually. Additionally, problems like tennis elbow, carpal tunnel syndrome, tendinitis, calf and hip pain, also contribute to the burden of problems. "If your job requires sitting behind a desk for several hours a day, and if you are experiencing fatigue, aches, and

pains, then you need to relook at your office space ergonomics. The wrong chair height, inadequate equipment spacing, and bad desk posture can wreck your joints and ligaments. Use a height-adjustable chair with arm and lumbar support. Keep the monitor directly in front of you, about an arm's length away. Keep the telephone and stationery within easy reach at arm's length. The mouse must be kept at

the same level as the keyboard. Use keyboard shortcuts to reduce the use of mouse," says Dr A. B. Govindaraj, Clinical Head and Senior Consultant, Department of Orthopedics, MGM Healthcare.

## Activity Mix

Given the ubiquity of tech tools and gadgets, our lifestyle is increasingly sedentary, and we are moving away from an active one. So, ergonomic designs of our furniture and some corrections in our way of leading life are essential. "Forward-thinking organisations are encouraging their employees to practise wellness in various aspects of life, right from their diet to an active lifestyle, training them on correct posture while working. Some of them motivate their employees to volunteer for activities that involve physical movements such as building low-cost housing for the underprivileged, running marathons, planting trees, filling potholes on



roads, teaching kids an outdoor sport and so on," says Aditya Narayan Mishra – Director and CEO of CIEL HR Services. Dr Vaibhav Lokhande, Associate Consultant-Physical Medicine, Rehabilitation and Sports Medicine, Sakra World Hospital, explains, "When it comes to prevention of poor ergonomics issues, equal contribution from an individual and the workplace is vital. Adhering to the various ergonomic programmes is important. It is advisable to develop an evaluation programme to ensure that improvements are constantly made."

### Health Issues

Poor ergonomics can negatively impact one's health, and poor posture can impact the spinal cord and the vertebral column, causing conditions like herniated discs and muscle weakness of the trunk. "Lack of blood circulation due to being seated for long during working hours may cause early fatigue, numbness due to lack of activity, movement or exercise. Poor ergonomics may cause type 2 diabetes due to improper secretion of insulin. This can also lead to being overweight and/or obesity, and even myocardial infarction. It may additionally result in a musculoskeletal disorder like disuse atrophy, especially in the lower limbs, and sprain, strain or carpal tunnel syndrome, cervical and lumbar strain in the upper body. One may also land up getting fibromyalgia trigger points due to psychosomatic issues," says Dr Babu J., Chief and HOD Physiotherapy, BGS Gleneagles Global Hospital.

Back pain is the commonest hazard at workplace, and predominantly related to prolonged sitting and adopting wrong postures. "Always sit with proper lower lumbar support, which can accentuate and support the normal lumbar curve in the spine, and make sure your hip and knees are in a straight line while seated. Always rest your elbow on the work table, instead of the wrist, as it helps prevent dropping of the shoulders and undue stress on the lower back. Take frequent breaks from a sitting position. Ideally, take a walk or do some



stretching for the back at intervals of one to two hours. When lifting objects or bending, make sure to use your knees instead of your back," advises Dr Harish Puranik, Sports Orthopaedic Surgeon at SPORTHO, SPARSH Hospital.

### Muscle Matters

Often, we tend to attribute eye strain to working too many hours; tingling in extremities to conditions like anxiety, muscular pain and accidental injury. While our diagnosis can be right, sometimes, it is important to understand that these symptoms



can also be caused by seemingly harmless factors like poor lighting, an uncomfortable chair or the repetition of detrimental movements. "Poor ergonomics can cause musculoskeletal disorders (MSDs) which are debilitating, painful conditions affecting muscles, tendons, tendon sheaths and nerves. One of the oft-cited MSDs is carpal tunnel syndrome (CTS), a condition in which a nerve within a specific passageway in the wrist is pinched, causing an array of symptoms, ranging

from unpleasant to painful. These include numbness, tingling and sharp pain," says Dr Faraz Ahmed, Consultant Orthopaedic and Spine surgeon and Director, Alleviate Pain and Spine Clinic.

### Take Care

Dr Thirumalesh K. Reddy, Sr Consultant - Joint Replacement and Arthroscopic Surgery, Aster CMI Hospital, says, "Keep your back in a normal, slightly arched position when sitting. Ensure that your lower back is supported by your chair. Keep the head and shoulders in an erect position. Opt for a workspace that is at the right height for your head so that you don't spend long hours leaning forward. Once an hour, if possible, stand and stretch. With your hands on your lower back, gently arch backward." Dr Amrithlal A. Mascarenhas, Consultant Spine Surgery, Vikram Hospital, Bengaluru, adds, "The computer screen has to be at eye level. A lower position compels the person to look downwards, resulting in a stooped position, which can be bad for the neck, eyes, shoulders and lower back. Ensure that bony prominences that come in contact with hard surfaces are well padded with cushion/silicon sheets so as to avoid contact stress. The height of the tables must not be too low so as to avoid excessive bending. Adequate lighting and ventilation are a fundamental requirement at any workplace."

