

A Few Simple Steps to Improve Sitting Posture

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Poor sitting posture as well as prolonged sitting have, therefore, considerable effects on individuals' health^[1]. Since, it seems, many people are in sitting position during their life, the ill-effects of poor sitting posture and/ or continues prolong sitting on their musculoskeletal health are highlighted that should be extensively studied, even though this epidemic issue have received special attention in recent years^[2].

In many developed countries, with the recent advances in sensing technologies and Artificial Intelligence (AI), sitting posture monitoring and correction is one of the important items that have been addressed in order to enhance human well-being^[2].

Worldwide, Occupational Musculoskeletal Diseases (OMSD) continues to be the leading cause of work-related disabilities' which in turn lead to various work-related diseases^[3]. Evidences showed that self-report of total sitting time has been associated with many disease and health problems like as Musculoskeletal Disease (MSD)^[4]. In recent years, advances in health information, communication technologies and ubiquitous sensing have highlighted the effectiveness of

collecting health-related data in real-time in order to assess and improve human well-being^[2].

According to the World Health Organization (WHO) and Occupational Safety and Health Administration (OSHA), the great majority of unhealthy workplace postures are preventable through which to decrease OMSDs^[5]. many studies have shown that poor sitting posture leads to a wide range of physical and mental health issues^[6].

Sitting upright has many benefits on human health and also improving mood and confidence that in turn could be resulted in increasing productivity at work^[2]. Therefore a few simple steps to improve sitting posture could be recommended.

To mitigate the problems associated with poor sitting posture, various solutions have been proposed with both passive approaches (ergonomics, materials and fabrics) and active approaches [Internet of Things and sensors].

Passive solutions include ergonomic chairs, cushions, elastic bands and foot rests. Active solutions track sitting posture include smart cushions, wearable point trackers and smartphone applications^[2].

However, passive solutions do

not guarantee that users adopts a good posture, they might still negligent while using them or sit for too long unaware of their poor posture. The active solutions available today come with multiple shortcomings such as limited sensing capabilities and inadequate feedback schemes^[2].

Additionally to these solutions, to mitigate the problems associated with prolonged sitting, occupational health awareness programs often include incentives for workers to stand up, take small and frequent breaks and perform regular stretching. Frequent postural transitions and regular stretching are important aspects of good posture awareness ^[2].

Accurate posture tracking leads to effective feedback for active posture correction. Continuous posture tracking and correction covers many domains including the workplace factors, personal fitness, driver assistance and entertainment.

Experimental setup and data set as an AI-based approach for sitting posture recognition in a sensing device allows for less rigid classification with the potential to capture dynamic changes in user behavior

or environment.

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