## Talk on Ergonomics Awareness

by Ir. Shamila Ariaratnam

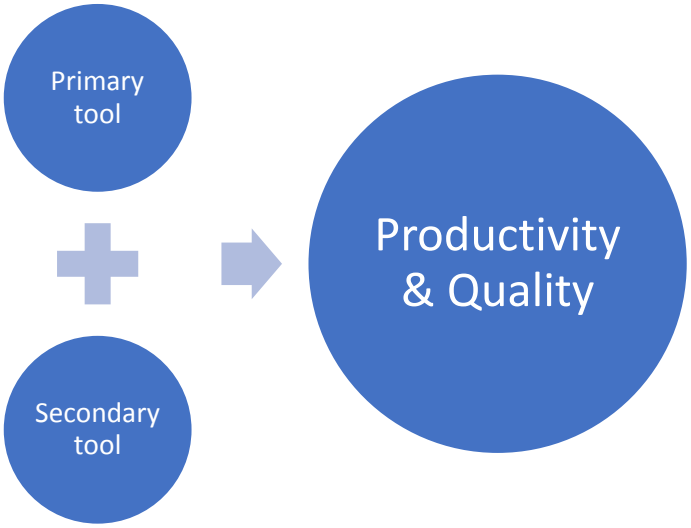
Ir. Shamila Ariaratnam is Consultant, Biomedical Engineering, RSD Hospitals Sdn Bhd – Subang Jaya Medical Centre and the Chairperson of the Healthcare and Biomedical Engineering Working Group.

On 4 August 2018 at 9:00 a.m. approximately 55 members turned up at the Malakoff Auditorium to listen to the talk organized by the Healthcare and Biomedical Engineering Working Group under the Electrical Engineering Technical Division. The session commenced with Ir. Shamila Ariaratnam's overview on the regulatory and technical aspects of Ergonomics and then followed by Physiotherapist, Prince Court Medical Centre, Mr Sri Sasitharan Rathakrishnan's detailed clinical sharing on Ergonomics Awareness.

Ir. Shamila commenced her talk by enlisting interactive feedback from participants to answer three simple questions online using their phones. Almost 67% agreed that they were experiencing some form of pain and/or ache in the last one week. Majority of the pain focused on either the shoulder or lumbar region. Out of which, 31% and 29% of the participants attributed the pain to posture and movement whilst other reasons cited were stress, eating habits and shoes or apparels worn. Ir. Shamila explained that often we all suffer from some kind of discomfort due to Ergonomics hazards which are not addressed or taken casually.

The Ergonomics Society, United Kingdom defines "Ergonomics as an approach which puts human needs and capabilities at the focus of designing technological systems. The aim is to ensure that humans and technology work in complete harmony, with the equipment and tasks aligned to human characteristics." She also highlighted that the two main objectives of Ergonomics are to increase the effectiveness and efficiency of work or in whatever activity that is being carried out as well as to increase the value of positive humanity.

Ir. Shamila then brought the participants' attention to the third objective of the Occupational Safety and Health Act (OSHA) 1994 which emphasizes on improve Ergonomics to aspects of the safety and health work with the statement "to encourage working environment for workers to be matched with their physiological and needs." psychological The use of



manpower is regarded as primary tool and the secondary tool is the use of equipment, tools and instruments to aid humans in completing their task to ensure high levels of productivity and quality are achieved.

Relationship between man and machine to productivity and quality

She then went on to highlight the six main Ergonomics risk factors that influences the ability of an employee to perform at optimum level and by balancing these six factors in a work system the effort can reduce strain and negative effects on health. Ir. Shamila concluded her part by giving a few pictorial examples of good and bad Ergonomics practices and a simple task analysis to follow to ensure the preventive measures to address Ergonomics risk factors are followed through and monitored for effectiveness and improvement. She encouraged participants to use the OSHA objectives as a basis to enlist better buy-in from management to address Ergonomics risk factors at the workplace.

Mr Sri Sasitharan then took over the floor and defined Ergonomics as the study of people's efficiency in their working environment. It is the science of designing the job to fit to the worker, rather than physically forcing the worker's body to fit the job. He also provided the benefits of it. His first topic was on Work-related Musculoskeletal Disorders (WMSDs). WMSDs are occupational disorders that involve soft tissue such as muscles, tendons, ligaments, joints, blood vessels and nerves. This painful and often disabling injuries, generally develop over weeks, months and years. He shared some of the conditions it can lead to and its causes. He also added that sometimes non-work-related factors can also contribute to MSDs.

Examples of Location Musculoskeletal Disorders (Source: Postural Health Training)

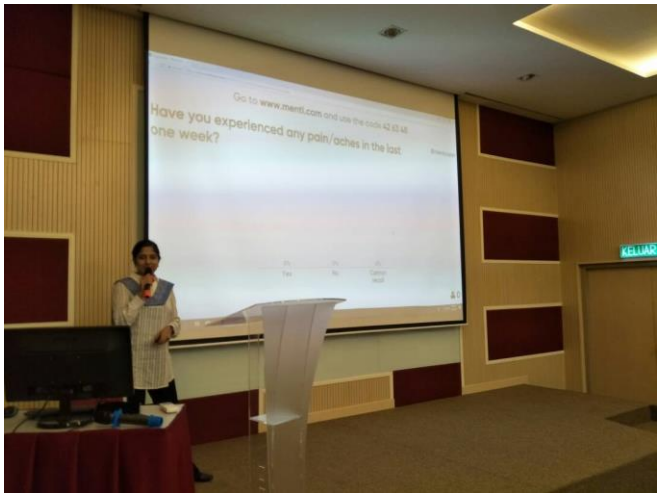
Mr Sasitharan also gave us a mini introduction to human muscular, skeletal and nervous system. He also explained the nature and function of tendons, muscles and ligaments. He explained some common body parts that are affected by MSDs. In addition to that, he listed some of the common methods of diagnosing, treating and preventing MSDs. Under the topic of prevention, Mr Sasitharan introduced participants to Ergo Break. It is a pause or change in activity that allows muscles, joints and tissues that have been working to recover and rest. Following which he literally gave us an Ergo Break and showed us some simple stretching exercises to do since we were almost one hour into the talk.

He then brought our attention to the importance of good posture in preventing MSDs. Many pictures were used to demonstrate good and bad postures. In the context of posture, there are two types of muscle fibers; phasic and static. Poor posture causes muscle fatigue because it calls on the phasic fibers instead of static fibers to maintain the body's position. Over time bad postures can also lead to MSDs. Mr Sasitharan listed some causes and solutions to poor posture. He shared 10 tips for good posture and some desk exercises.

His final topic was on manual handling. Manual handling injuries are not limited to those sustained by lifting or carrying heavy loads. A person can be injured when handling objects in a variety of ways including pulling, pushing or holding. He shared safe lifting techniques and tips for lifting.

Participants found the talk very engaging as Mr Sri Sasitharan made his presentation interesting by using demonstration to explain many clinical concepts as well as the "right techniques". Definitely there is a need for more organizations to invest in reducing Ergonomics risk factors as this would lead to safer jobs with fewer injuries which translates to increased efficiency and productivity indirectly enhancing quality, reducing errors and most certainly intensifying employee morale.

Photos below summarise the talk.




Ir. Shamila defining the term "ergonomic"


Mr. Sasitharan demonstrating an “ergo break”

Participants performing “ergo break” guided by Mr. Sasitharan