

## **The Role of Functional Medicine in Occupational Health**

Faculty:

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- 1. The Role of the gut microbiome in Musculoskeletal Disorders** Deepak Sharan
- 2. Functional medicine approaches to improve sleep** Mythri Shankar
- 3. The applications of heart rate variability in occupational health** Ravikumar Modali

### **The Role of the gut microbiome in Musculoskeletal Disorders**

Recent research has highlighted the important role that the gut microbiome plays in the development and progression of Musculoskeletal disorders (MSDs). The gut microbiome is a complex ecosystem of microorganisms that reside in the gastrointestinal tract, and it has been found to influence a wide range of physiological processes, including inflammation and immune function. Studies have shown that disturbances in the gut microbiome can contribute to the development of MSDs such as rheumatoid arthritis and osteoporosis. Understanding the role of the gut microbiome in MSDs may lead to the development of new treatments and preventative measures for these debilitating conditions.

### **Functional Medicine Approaches to Improve Sleep**

Introduction:

Sleep is essential to every process in the body, affecting our physical and mental functioning the next day, our ability to fight disease and develop immunity, and our metabolism and chronic disease risk. Sleep is truly interdisciplinary because it touches every aspect of health. This talk will cover key concepts in understanding the functional mechanisms of sleep.

Topics Covered:

- Circadian Physiology - SCN: Central Clock & (RGC) Retinal Ganglion Cells
- The functional influencers of the Circadian System Components include light temperature phase shifts, etc.
- Melatonin,
- Sleep Cycle,
- Entrainment
- Lifestyle-based activity and the dietary and environmental coping behaviours that can improve sleep health.

Learning Objectives:

The symposium presents focusses on the functional medicine aspects of sleep, helping one understand:

1. Importance of sleep for physical and mental health
2. Sleep disorders and their impact on health
3. Sleep hygiene and recommendations for improving sleep
4. Special considerations for sleep disorders and insomnia.

## **Applications of Heart rate variability in occupational health**

### Introduction

Heart rate variability (HRV), a health parameter, is now available for clinical use, thanks to the works in the space of digital health technology. The interesting phenomena of interbeat variability are detectable by digital electrocardiogram signals. Subjecting such signals to statistical analysis helps interpret several autonomic neural phenomena influencing the heart rate. Most physiologic and pathological phenomena can be assessed using HRV studies and somatic feedback studies. HRV devices are available as pocket-size instruments or portable carts that can be used in healthcare settings, workplaces, or even homes.

### Learning objectives

1. Why does HR vary from beat to beat?
2. Heart rhythm patterns – coherence and incoherence
3. Allostatic load and homeostasis set-points
4. Clinical use of HRV
5. Conducting the HRV test
6. Normal & abnormal readings
7. Value of tracking HRV periodically

### **Key Takeaways**

Gain skills and competencies in using HRV as a digital health tool.

### **About Our Speakers:**

1. Dr. Ravikumar Modali

Dr. Ravikumar Modali is the Vice President, Clinical Services & Corporate Health Programs at Recoup Health Inc. Prior to this, he held office as Exec Committee & Board Advisory Member @ Indian Society of Lifestyle Medicine; Lead trainer @ Telemedicine Society of India and also

as Director – Clinical Strategy, Knowwurture Health Solutions and several health and wellness companies.

He is alumnus of the prestigious KEM hospital @ Mumbai, BITS, Pilani, Board certified in lifestyle medicine from IBLM, USA & certified physician coach from CCA, USA.

Apart from his hands-on expertise in the field of lifestyle medicine, he comes with a rich experience in medical analytics, medical treatment programs, disease remission plans, emergency response services, corporate/residential health benefit programs & health insurance benefit plan design. He was invited to review the Indian government's NPCDCS program for chronic disease management & has written 2 chapters in India's first academic book in health insurance. His prior experience involved Medical protocols for EMRI's 108 emergency response services, Medical networking for Health Insurance at TTK, Wellness benefits for Vidal healthcare and several digital health start-ups like CallHealth, Connect-n-Heal among several others. His thought leadership is well recognised in the national think tank body of FICCI, QCI, TSI and ISLM.

His current interest areas include Health benefit programs, Lifestyle & Behavioural medicine, Digital therapeutics & Tele-Medicine. Dr. Ravi also mentors physicians & healthcare teams on adopting these new-age approaches in their medical practice.

## 2. Deepak Sharan

Dr. Deepak Sharan is a highly accomplished consultant specializing in orthopedic surgery, rehabilitation, ergonomics, occupational health, and functional and lifestyle medicine. Based in Bengaluru, India, he is associated with RECOUP Health and holds prominent positions in various prestigious organizations. Dr. Sharan serves as the Chairperson of the Scientific Committee on Musculoskeletal Disorders at the International Commission on Occupational Health and as the President of the International Myopain Society. He is also the Founder Director of the EPM International Ergonomics School in Italy and the Founder President of both the Indian Ergonomics School and the Indian Myopain Society. With an impressive portfolio of over 600 international scientific publications and conference presentations, Dr. Sharan has conducted extensive research on office and industrial ergonomics, healthcare ergonomics, cognitive ergonomics, and work-related musculoskeletal disorders (WRMSD). Notably, he co-developed the Time-based Assessment Computerized Strategy (TACOs) for assessing the risk of WRMSD among physiotherapists. Dr. Sharan has received numerous awards and research grants, including the National Disability Award from the Government of India and prestigious international research awards in the field of orthopedics and pediatric orthopedics. As an internationally recognized expert in WRMSD, he has developed his own validated assessment and treatment approach known as the SHARAN's Protocol, which has successfully treated over a million patients from 45 different countries. Dr. Sharan also works as an ergonomics and occupational

health consultant for several Fortune 500 companies and is an authorized trainer for various methodologies and tools related to ergonomics and occupational health, including the Revised NIOSH Lifting Equation, ERGOcheck Risk Mapping, TACOs Tool, OCRA methods, and Push-Pull-Carry techniques.