

10th International Conference and Exhibition on

Obesity & Weight Management

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What the neuro and rehabilitation sciences can offer the management of obesity and weight management?

Objectives: To apply the knowledge of neuroscience in managing obesity and movement in education and office environments.

Methods: We review data that motor processes contribute to cognitive function. We present findings of how movement contributes to synaptogenesis and neuroplasticity and increased BDNF in rats and brain state changes in children and adults.

Results: Motor and cognitive processes have dynamical bidirectional relationships. Rodent research has revealed that exercise influences the striatum by increasing dopamine signaling and angiogenesis. In children, higher aerobic fitness levels are associated with greater hippocampal volumes, superior performance on tasks of attentional and interference control, and elevated event-related brain potential indices of executive function.

Conclusions: We endeavor to integrate the Neurosciences, Cognitive Psychology and Biomechanics in providing a fundamental understanding of the relation between intention, decision-making, and movement in the context of functional connectivity, awareness, attention, and action. The lack of movement represented in office work and youngsters fettered to video games reduces the ability to formulate effective connectivities. Because children and adults are becoming increasingly overweight, unhealthy and unfit, understanding the neurocognitive benefits of an active lifestyle during childhood has important public health and educational implications. Methods will be discussed to effect weight and health management in educational and workplace environments.

Biography

Gerry Leisman is Director and Professor of the National Institute for Brain and Rehabilitation Sciences in Nazareth, Israel and as Professor of Restorative Neurology at Universidad de Ciencias Médicas Facultad Manuel Fajardo, Havana, Cuba. He has examined self-organizing systems in the nervous system applied to cognitive functions in memory, kinesiology, optimization, consciousness, and autism. He has applied optimization strategies to movement, gait, and cognition. In the 1970's, he was one of the first to identify functional disconnectivities in the brain. His work in Rehabilitation Sciences, has applied the tools of Industrial Engineering to those with developmental disabilities and to health promotion in adults using the tools of neuro and cognitive sciences.

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