



True Science of Movement

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Defining the science of Kinesiology can be multifactorial and leaves you with a clear outline as to why the professionals working as Kinesiologists are so holistic in the nature of their approach in the application of their knowledge. Even a quick look at the scope of work and the roles Kinesiologists can play within the workforce leaves you reaching out to a large multidisciplinary group; physical education, providing consulting services, conduct research and develop policies related to rehabilitation, health promotion, clinical rehabilitation, disability management, human motor performance, ergonomics, and occupational health and safety just to name a few.

However when revelling in the science that defines this true core of the profession we can simply report that we are specialist's in movement. But how do we become specialists in movement? What backs this all up?

In a nutshell Kinesiology is a true multidisciplinary science, which relies on the fusing of but not limited to, mechanisms of movement in physiology, biomechanics, ergonomics, anatomy and psychomotor behaviours, while also ensuring consideration toward social and cultural factors. You have to look no further back than your undergraduate degree to see the diversity of sciences. Breaking down these sciences allows for a clear understanding as to our role as movements specialists.

The knowledge and understanding in Physiology allows for the understanding and analysis of function. Understanding systems of the human body especially; circulation, breathing, digestion, energy production and movement allows for consideration as to how the body's physiological function may change according to external conditions and demands, a person's morbidities and the level/type of preparation and recovery required in a performance domain. An understanding into the physiological adaptation through exercise is a key principle of kinesiology that relates to improved fitness in athletes as well as health and wellness in clinical populations.

Through ergonomics, Kinesiologists are able to identify, review and address many workplace and sporting demands. Analysis of demands through a holistic review of the effect of the physical and environmental stresses and how their effect on the body physiologically and structurally. Incorporating mathematical and statistical sciences to account workload demands and utilizing physics, mechanics and environmental sciences to further understand workplace demands and provide an understanding as to how that affects the body.

Through the understanding of biomechanics we are able to take into account the mechanics of body build, forces acting upon the body, both internal (active from muscle fibres, passive from tendons and other soft tissues) and external (gravitation, friction, air and water resistance, thrust, spring reaction, partner and opponent) in a manner of load that should be overcome. Through analysis and understanding of biomechanical demands we are able to improve movement efficiency and performance and address any poor movement patterns or compensatory behaviors.

Understanding the science of Psychomotor behaviour and development is not just a simple stimulation of motor units through the peripheral motor nerves but rather complex cognitive processes that determine and control whole sequences of actions involved in motor planning, selection, and preparation of motor action and action monitoring. As a Kinesiologist we play an important role in being

able to examine complex skills to our ability to break these down to component parts to analyse through quantitative and qualitative means to determine the cognitive processes associated with physical movement

Anatomy is the basic science for all these disciplines, which take into account human actions. As a Kinesiologist upholding a significant understanding of its build is essential. This concerns the development of musculoskeletal system, insertion of muscle tendons into the bone in accordance to the axis of rotation, the structural make up and role of the lungs and heart, and other characteristics of body's morphology. A genuine backbone to all sciences we utilize daily in our work.

Kinesiology is a true science of movement. All in all it describes and investigates all aspects of human movement beginning from a cell and its tiny organs up to the movement of the whole body and groups of bodies. It is a profession that is dedicated to using the science of movement to improve performance, improve health and improve overall quality of life.

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