



# Proceedings of the IACT-Dubai Chapter e-Colloquium on Wellness Science



International Association of Counselors  
and Therapists  
IACT- Dubai Chapter



**Copyright © 2023** The Authors of the respective papers: Chia Kok Hwee, Jennifer Erin Camulli, Harjit Singh, Liu Wujing, Tan Meng Kiat

**Contact:** International Association of Counselors and Therapists (IACT)-Dubai Chapter

For all queries, use the following email address: [info@paediatrictx.com](mailto:info@paediatrictx.com)

## Wellness Science

*Wellness Science* is an interdisciplinary field that comprises the study and promotion of holistic well-being, encompassing every aspect of life. Rooted in a combination of scientific principles and practical applications, Wellness Science seeks to understand the intricate interplay between various factors that contribute to an individual's overall health and happiness, typically through the lenses of four major wellness domains: physical, mental, emotional, and social health. This burgeoning field integrates knowledge from psychology, biology, nutrition, exercise physiology, and other disciplines to develop a comprehensive understanding of what it means to live a balanced and fulfilling life. As societies increasingly recognize the importance of proactive health management and preventative measures, Wellness Science emerges as a crucial area of research and practice, guiding individuals and communities toward optimal health outcomes and an enhanced quality of life.

Dr. Camulli, J.E., - 2023

## Table of Contents

<b><i>Exploring the Opportunities and Knowledge in Wellness Science</i></b> .....	<b>6</b>
What is Wellness? .....	6
How are Well-Being and Wellness related? .....	6
What is Wellness Science? .....	6
<b>The Historical Development of Wellness Science</b> .....	<b>7</b>
<i>Phase 1: Early Philosophical Roots (Ancient Times - 19th Century)</i> .....	7
<i>Phase 2: Medicalization and Industrialization (19th - 20th Century)</i> .....	7
<i>Phase 3: Fitness and Preventive Health (20th Century - Mid 20th Century)</i> .....	7
<i>Phase 4: Holistic and Mind-Body Connection (Late 20th Century - Present)</i> .....	7
<i>Phase 5: Technology and Personalized Wellness (21st Century - Present)</i> .....	8
<b>Categorization of Various Domains of Wellness</b> .....	<b>8</b>
<i>Category 1: Major (Dominant) Domains of Wellness</i> .....	8
<i>Category 2: Minor (Simple) Domains of Wellness</i> .....	9
<i>Category 3: Combined (Compound) Domains of Wellness</i> .....	11
<b>Differences between Psychosomatic Wellness and Noosomatic Wellness</b> .....	<b>12</b>
<b>Concluding Summary</b> .....	<b>14</b>
<b>References</b> .....	<b>14</b>
<b><i>Optimizing Well-Being Through Sensory Wellness</i></b> .....	<b>17</b>
Introduction .....	17
What is Sensory Wellness? .....	17
What about Sensory Illness? .....	17
What We need to know about Sensory Wellness .....	17
How to measure Sensory Wellness .....	18
<b>The Sensory Profile</b> .....	<b>19</b>
1. <i>Sensory Processing Section:</i> .....	19
2. <i>Sensory Modulation Section:</i> .....	19
3. <i>Emotional Responses to Sensory Stimuli Section:</i> .....	20
4. <i>Behavioral Outcomes Related to Sensory Processing Section:</i> .....	20
<b>Association of Sensory Wellness with Sensory Nervous System</b> .....	<b>21</b>
<b>Impact of Sensory Wellness on the Sensory Nervous System</b> .....	<b>22</b>
<b>Conclusion</b> .....	<b>22</b>
<b>References</b> .....	<b>23</b>
<b><i>Adaptive Wellness for People with Special Needs</i></b> .....	<b>25</b>
What is Adaptive Wellness? .....	25
The Seven Domains of Adaptive Wellness .....	25
Why is Adaptive Wellness important for People with Special Needs? .....	25

Factors that can impair/impact Adaptive Wellness .....	26
How can We measure Adaptive Wellness?.....	26
Conclusion .....	27
References.....	27
<b><i>Family Wellness: The Communal Cornerstone .....</i></b>	<b>29</b>
What is Family Wellness? .....	29
The Seven Key Domains of Family Wellness .....	29
Why the Need for Family Wellness Programs Today? .....	29
Factors that Impact Family Wellness Programs .....	30
Key Factors Involved in Family Wellness Measurement.....	30
How to Measure Family Wellness? .....	30
Conclusion .....	31
References.....	31
<b><i>Neurosomatic Wellness in Brain-Body Balance.....</i></b>	<b>33</b>
What is Neurosomatic Wellness? .....	33
What is Neurosomatic Illness? .....	33
How the Brain can be impacted by Neurosomatic Illnesses? .....	34
Why Neurosomatic Wellness is Essential for Holistic Health .....	34
Conclusion .....	35
References.....	35

## Exploring the Opportunities and Knowledge in Wellness Science

**Chia Kok Hwee** Ed. D, BCET, BCSE, FCoT, FCP, LTCL, Hon.FRSAS  
Merlion Pediatric Therapy Clinic, Singapore

Citation: Chia, K. H. (2023, December 18). *Exploring the opportunities and knowledge in wellness science* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>

### What is Wellness?

Wellness involves adopting healthy routines every day to achieve improved physical and mental health, allowing individuals to thrive rather than simply survive. “To understand the significance of wellness, it is important to understand how it is linked to health” (Pfizer Inc., 2023, para. 2). The term *health*, according to the World Health Organization (WHO, 2023), is defined as being “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (para. 2).

Pfizer Incorporated (2023) has identified several key areas of one’s lifestyle that are considered crucial dimensions of overall wellness: i.e., “social connectedness, exercise, nutrition, sleep and mindfulness” (para. 3) with each of them impacting on one’s physical and mental health or well-being. The opposite of the wellness is illness, resulting in serious social withdrawal, idleness, malnutrition (gluttony and/or starvation), sleep deprivation and mindlessness.

### How are Well-Being and Wellness related?

Well-being, on one hand, generally refers to a broader, holistic state encompassing various aspects of one’s life, including physical, mental, and emotional health, satisfaction, and fulfillment. On the other hand, wellness typically focuses more on the active pursuit and maintenance of good health in specific dimensions like physical fitness, mental clarity, and emotional balance. Well-being tends to be more encompassing, while wellness is often more targeted and intentional.

In other words, well-being encompasses various elements like physical health, mental health, social connections, a sense of purpose, financial stability, and a positive outlook on life. Subtly different from well-being, wellness while also encompasses various elements, including physical health, mental well-being, emotional balance, social connections, spiritual fulfillment, intellectual stimulation, and a sense of purpose or meaning in life, it involves balancing these aspects in order to contribute to the overall well-being of an individual.

### What is Wellness Science?

Understanding what health is involves the broad study of wellness. According to Markell and Peterson (2019), the study of wellness (also known as Wellness Science in this paper) incorporates every aspect of life. “Achieving overall wellness means living actively and fully. People in this state of wellness exude confidence, optimism, and self-efficacy; they have the energy reserves to do what needs to be done today and to plan for a better tomorrow” (Markell & Peterson, 2019, p. 2). In other words, Wellness Science encompasses the multi-faceted study of holistic well-being, covering four major wellness domains: physical, mental,

emotional, and social health. In addition, there are also other so-called minor or specific wellness domains, e.g., sensory, adaptive, and cognitive. In addition, there are also those compound domains, i.e., a mix of two or more major and/or minor domains. All these domains include nutrition, exercise, stress management, mental health, sleep, and overall lifestyle choices. Studying Wellness Science can help us to better understand how various factors impact our health and empower us to make informed choices, leading to a better quality of life and overall well-being. To begin, we need to trace the historical development of Wellness Science.

### The Historical Development of Wellness Science

Briefly speaking, the evolution of Wellness Science has unfolded through several distinct phases from the time of antiquity until now. Each phase reflects societal shifts, scientific advancements, and changing perceptions of what constitutes well-being, contributing to the multifaceted nature of Wellness Science today.

#### *Phase 1: Early Philosophical Roots (Ancient Times - 19th Century)*

Wellness concepts trace back to ancient civilizations like Greece, India, and China, where holistic health was emphasized, focusing on the balance of mind (*Noos* or *Nous*), body (*Soma*), and spirit, which can be one of the following three: (i) *Pneuma*, which means breath wind, or air (see Francois, 2008, pp. 190, 195 & 205); (ii) *Psyche*, which can also mean soul; and (iii) *Diathesis*, which refers to disposition or mood. Throughout history, various cultures developed practices such as yoga, meditation, and herbal medicine that contributed to the wellness paradigm.

#### *Phase 2: Medicalization and Industrialization (19th - 20th Century)*

With the rise of modern medicine (Le Fanu, 2011; Powles, 1973) and the industrial revolution (Gochfeld, 2005), wellness became more aligned with medical practices (also see Melin, 2016, for other detail). This phase saw the formalization of healthcare systems, pharmaceuticals, and scientific approaches to health, which gradually separated wellness from medicine.

#### *Phase 3: Fitness and Preventive Health (20th Century - Mid 20th Century)*

During the Post-World War II, a shift occurred towards preventive health measures and physical fitness. Initiatives like the US President's Council on Physical Fitness and Sports (Plowman et al., 2006) contributed to a growing focus on exercise, nutrition, and preventive measures as essential components of wellness.

#### *Phase 4: Holistic and Mind-Body Connection (Late 20th Century - Present)*

The late 20th century witnessed a resurgence of interest in holistic wellness, emphasizing the interconnectedness of mind, body, and spirit. For instance, the National Wellness Institute (NWI; see NWI, 2023) came into being officially in 1977, following two wellness symposiums (1975 and 1976) before its formal establishment. Initially operating within the University of Wisconsin-Stevens Point (UWSP) Foundation as the Institute for Lifestyle Improvement, the organization underwent a name change in 1985 to the current National Wellness Institute, signaling a broader global scope. NWI subsequently became an independent entity in 1988, securing its non-profit status on August 3, 1989. Based in

Stevens Point, Wisconsin, the National Wellness Institute is a registered 501(c)(3) organization (see NWI, 2023, for detail).

In addition, complementary and alternative therapies like acupuncture, mindfulness practices, and integrative medicine gained popularity, highlighting a more comprehensive approach to well-being.

#### *Phase 5: Technology and Personalized Wellness (21st Century - Present)*

In 2014, the Stanford Prevention Research Center initiated the WELL program with the primary aim of enhancing the health and wellness of entire populations. Known as the Wellness Living Laboratory (WELL), it focuses on researching overall health as opposed to solely the absence of illness (Dusheck, 2016). It also signals the crucial need to incorporate technology into Wellness Science in recent years (Fabrizio et al., 2023; McCullagh & Augusto, 2011; Montague, E., & Perchonok, 2012).

As a result, “technological advances provide solutions that were unthinkable just a few years ago” (Fabrizio et al., 2023, p. 1) and it has significantly influenced Wellness Science today. Not forgetting that wearable devices, apps, and data-driven approaches have revolutionized how individuals track and manage their health. This phase emphasizes personalized wellness through tailored diet, exercise, and lifestyle recommendations based on individual data and preferences (Oyebode et al., 2023).

#### **Categorization of Various Domains of Wellness**

In the Wellness Science, there are two ways to categorize the various domains of wellness. In the first approach, wellness is classified under either major or minor domains. The major domains often include physical, emotional, mental, social, and spiritual wellness, while the minor domains might focus on occupational, environmental, financial, intellectual, or cultural wellness, among others. Each contributes to an individual’s overall well-being. In the second approach, Wellness Science categorizes wellness into simple and compound domains. Simple domains (same like the minor domains) often include physical, emotional, social, intellectual, occupational, and spiritual wellness. Compound domains might combine different aspects, like psychosomatic wellness (mental and somatic), socio-emotional wellness (social and emotional), or holistic wellness, which encompasses multiple dimensions of well-being. Each domain aims to address different facets of a person’s overall health and vitality. In this paper presentation, I have chosen to classify the domains of wellness under three categories: major, minor and combined.

#### *Category 1: Major (Dominant) Domains of Wellness*

The major domains of wellness refer to various dominant dimensions of well-being that contribute to a person’s overall health. They typically include physical, emotional, social, intellectual, occupational, environmental, and spiritual wellness. Each domain represents a different aspect of a person’s life and contributes to a holistic sense of well-being.

Here is the brief description of each of the seven major domains of wellness:

1. **Physical Wellness:** This refers to the state of one’s body in terms of the overall health and fitness. It involves aspects like regular exercise, proper nutrition, adequate



sleep, and avoiding harmful habits. Maintaining physical wellness contributes to a healthy lifestyle and can improve your quality of life.

2. **Emotional Wellness:** It refers to the state of being aware, understanding, and effectively managing one's emotions. It involves having a healthy emotional balance, coping with stress, developing resilience, maintaining positive relationships, and being in tune with one's feelings without being overwhelmed by them. Essentially, it's about nurturing a positive emotional state and managing life's ups and downs in a healthy way.
3. **Intellectual Wellness:** It refers to the ability to think critically, reason effectively, learn new things, and engage in mentally stimulating activities. It involves being open to new ideas, seeking out knowledge, and continuously challenging oneself intellectually to grow and expand one's mind. This dimension of wellness encourages lifelong learning and development.
4. **Social Wellness:** This focuses on the relationships and connections we have with others, fostering a supportive network and healthy interactions with friends, family, community, and society at large.
5. **Occupational Wellness:** It refers to finding fulfillment, satisfaction, and a sense of purpose in one's work life. It involves feeling engaged in one's job, having a healthy work-life balance, pursuing personal growth and development, and feeling a sense of accomplishment and meaning in one's career.
6. **Environmental Wellness:** This refers to maintaining a lifestyle that respects and enhances the natural environment. This domain of wellness is often neglected but it is essential. It involves being aware of the impact we have on our surroundings and taking actions to protect, preserve, and sustain a healthy environment for ourselves and future generations. This wellness dimension encompasses behaviors like recycling, conserving resources, reducing pollution, and connecting with nature.
7. **Spiritual Wellness:** This often involves finding meaning, purpose, and a sense of connection to something greater than oneself. It can encompass personal beliefs, values, and practices that provide a sense of inner peace and harmony.

At this juncture, I see the need to emphasize that Spiritual Wellness and Social Wellness are related but distinct aspects of overall well-being. While Spiritual Wellness can contribute to one's overall sense of well-being and might influence social interactions by shaping values and perspectives, it is not synonymous with Social Wellness. They complement each other, but they encompass different aspects of a person's life.

### *Category 2: Minor (Simple) Domains of Wellness*

Minor (also known as simple) domains of wellness refer to specific areas or aspects of overall well-being that contribute to a person's holistic health. These areas can include things like social wellness (relationships, connections), intellectual wellness (mental stimulation, creativity), environmental wellness (interaction with surroundings), occupational wellness (satisfaction with work), and spiritual wellness (sense of purpose, meaning in life), among others. These aspects are considered *minor* in comparison to major dimensions like physical and mental health but are equally important for a balanced and healthy life.

Below are several selected minor domains of wellness that I believe are of interest to everyone:

1. Adaptive wellness refers to the approach of tailoring health and wellness practices to suit an individual's specific needs, considering their unique physical, mental, emotional, and environmental factors. It involves adapting lifestyle choices, therapies, and practices to optimize well-being based on an individual's changing circumstances or requirements (x-ref & see Singh, 2023, for further elaboration).
2. Family wellness refers to the overall health and well-being of a family unit as a whole. It encompasses physical, mental, emotional, and social aspects, focusing on promoting a harmonious and healthy lifestyle for all family members (x-ref & see Liu, 2023, for further elaboration). This involves fostering strong relationships, open communication, healthy habits, mutual support, and a nurturing environment to ensure the well-being of each family member. However, adverse childhood experience (Campbell et al., 2023; Warner et al., 2023), adolescent delinquency (Jackson et al., 2023) and dysfunctional family (Hsieh et al., 2021) are three examples of serious issues of concern that can disrupt Family Wellness.
3. Gastrointestinal wellness refers to the overall health and function of the digestive system, which starts from the integrated medicine model (Cong, Chen, & Wei, 2023). It is also associated with the Integrated Wellness, which refers to "the multidimensional regulation and intervention of disease prevention, treatment and rehabilitation through the adoption of interdisciplinary and integrated theories and techniques to enable healthy individuals to be systematically maintained and diseased individuals to be systematically treated and optimally rehabilitated" (Cong, Chen, & Wei, 2023, p. 1). It involves maintaining a balance in the digestive tract, which includes the stomach, intestines, and associated organs (see Ford et al., 2020). This wellness encompasses proper digestion, absorption of nutrients, and elimination of waste. It is closely related to the microbiota - the community of bacteria, fungi, and other microorganisms living in the gut. The microbiota plays a vital role in overall wellness by aiding digestion, supporting the immune system, synthesizing essential nutrients, and even influencing mood and mental health (Dahiya & Nigam, 2022). A balanced microbiota contributes to better health outcomes. Hence, a healthy balance of gut microbiota is essential for good gastrointestinal wellness, as these microorganisms play crucial roles in digestion, immune function, and overall health (Singhvi et al., 2020). Achieving and maintaining a balanced microbiota is often a key aspect of promoting gastrointestinal as well as neurosomatic wellness (Murciano-Brea, Garcia-Montes, Geuna, & Herrera-Rincon, 2021).
4. Neurological wellness: It refers to the state of well-being concerning the nervous system. It involves maintaining optimal brain health, cognitive function, emotional balance, and overall neurological fitness. This encompasses practices that promote mental health, good sleep, stress management, exercise, and a balanced diet to support a healthy nervous system. When associates with the body (soma), we need to understand the deep connection between the brain and the body. This is Neurosomatic (brain-body) Wellness (x-ref & see Deng, 2023, for further elaboration). The brain and body constantly communicate through intricate pathways, impacting our overall health and wellness (Guidolin et al., 2019).

Emotional states, stress, physical health – all influence each other through this intricate network (Immordino-Yang, Darling-Hammond, & Krone, 2019). Therapeutic techniques like mindfulness, exercise, and bodyfulness focus on improving this connection for overall well-being.

5. Sensory wellness refers to the state of optimal sensory health, where an individual's senses, such as sight, hearing, taste, touch, and smell, are balanced, engaged, and nurtured to support overall well-being (x-ref & see Camulli, 2023, for further elaboration). It involves activities or practices that promote a harmonious relationship with one's senses, contributing to a healthier and more fulfilling life (Mahler, McLaughlin, & Anson, 2020).

### *Category 3: Combined (Compound) Domains of Wellness*

The combined domains of wellness often include various dimensions like physical, emotional, social, intellectual, occupational, environmental, and spiritual wellness. These dimensions can intersect and combine in different ways, forming a variety of holistic wellness combinations tailored to individuals' needs and preferences (Beauchemin et al., 2019; Wickramaratne, Phuoc, & Albattat, 2020).

Two prominent combined domains in the Wellness Science are Psychosomatic Wellness and Noosomatic Wellness. The Psychosomatic Wellness focuses on the mind-body connection, emphasizing how emotional well-being impacts physical health, while the Noosomatic Wellness delves into the interplay between the mind and spirit, emphasizing consciousness and its effect on overall health. In addition, the Psychodynamic Wellness explores how past experiences shape our current behavior and mental health. Together, these three dimensions of wellness with other minor or major wellness domains contribute to a comprehensive understanding of Wellness Science by highlighting the intricate relationships between mental, emotional, spiritual, and physical health, ultimately promoting holistic well-being.

Psychosomatic Wellness focuses on the mind-body connection, acknowledging how thoughts and emotions influence physical health. However, it does not encompass all aspects of wellness. Other dimensions like social, environmental, occupational, intellectual, and spiritual factors contribute to overall well-being, each playing a unique role in an individual's health. Psychosomatic Wellness is crucial, but a holistic approach that addresses these other dimensions is needed for a comprehensive sense of well-being.

Psychosomatic Wellness is also the main concern of psychosomatic medicine, which “deals with the interaction between physical, emotional, and social aspects of an illness” (Fritzsche, Goli, & Dobos, 2019, p. 3). The psychosocial elements impacting the beginning and progression of an illness encompass both beneficial and adverse bonding encounters, immediate and prolonged stress factors, educational moments and mental perceptions, alongside protective elements like emotional strength, activating resources (promoting well-being) and a sense of coherence (salutogenesis) (Lindström & Eriksson, 2005).

There is also a need to explore another less known domain of Wellness Science: Noosomatic Wellness. What is Noosomatic Wellness? In my professional view, Noosomatic Wellness pertains to the integration of mental, emotional, and spiritual health for overall well-being.

Unfortunately, very little is written about it in the current literature. Besides, I do not have direct access to external databases or citations on it. However, it might be possible to find information on this topic in academic journals focusing on psychology, religiosity, spirituality, or holistic health. PubMed and Google Scholar could be good places to start the search.

Briefly, Noosomatic Wellness focuses on the mind’s connection to overall health, and it is essential alongside Psychosomatic Wellness for the following key reasons:

1. Holistic Approach: It emphasizes the interconnectedness of mind, body, and spirit, acknowledging their impact on health.
2. Mental Well-being: Addresses mental health beyond mere absence of illness, promoting cognitive, emotional, and spiritual balance.
3. Meaning and Purpose: Encourages individuals to find meaning, purpose, and fulfillment, contributing to overall well-being.
4. Stress Management: Provides tools for coping with stress, enhancing resilience, and promoting mental fortitude.
5. Self-awareness and Growth: Facilitates personal development, self-awareness, and continuous learning for a more fulfilling life.
6. Mind-Body Connection: Acknowledges how mental states affect physical health, influencing immune function and overall vitality.
7. Preventative Care: Incorporating noosomatic wellness can prevent mental health issues and support overall preventive health measures.

Integrating both psychosomatic and noosomatic wellness ensures a more comprehensive and balanced approach to health and well-being.

### Differences between Psychosomatic Wellness and Noosomatic Wellness

Psychosomatic wellness refers to the connection between the mind and body, where emotional or mental factors can impact physical health. Noosomatic wellness, on the other hand, focuses on the integration of mind and consciousness for overall well-being.

Table 1. outlines the differences between psychosomatic wellness and noosomatic wellness with brief explanations and examples:

*Table 1: Differences between psychosomatic wellness and noosomatic wellness*

Issue of Difference	Psychosomatic Wellness (with examples)	Noosomatic Wellness (with examples)
1. Focus:	Emphasizes the mind-body connection.  Example: Stress causing headaches or stomach issues	Centers on the integration of mind and consciousness.  Example: Meditation or mindfulness leading to clarity and reduced stress.
2. Root Cause:	Attributes physical symptoms to emotional or mental states.	Considers a deeper awareness or consciousness as the root cause.

	Example: Anxiety leading to gastrointestinal problems.	Example: Achieving mental balance through self-reflection practices like meditation.
3. Treatment Approach:	Involves addressing mental or emotional issues to alleviate physical symptoms.	Focuses on practices that enhance consciousness and awareness.
	Example: Therapy to reduce stress and improve overall health.	Example: Yoga and meditation to expand consciousness and achieve mental clarity.
4. Integration:	Connects psychological states to bodily health.	Integrates higher states of consciousness with well-being.
	Example: Depression impacting immune system function.	Example: Spiritual practices leading to inner peace and harmony.
5. Approach to Healing:	Healing through addressing mental or emotional issues. Example: Therapy sessions to manage stress-related physical symptoms.	Healing through expanding consciousness and awareness. Example: Meditation fostering a sense of calm and tranquility.
6. Understanding of Well-being:	Well-being tied to mental and emotional equilibrium. Example: Managing stress for overall health improvement.	Well-being linked to a higher state of consciousness. Example: Spiritual practices leading to a sense of purpose and fulfillment.
7. Emphasis on Awareness:	Focuses on recognizing and managing emotional and mental states. Example: Recognizing triggers for anxiety and working to reduce their impact.	Focuses on expanding consciousness and self-awareness. Example: Meditation to become more present and aware of thoughts and sensations.
8. Philosophical Basis:	Rooted in psychology and the mind-body connection. Example: Exploring how trauma affects physical health.	Rooted in spirituality and consciousness expansion. Example: Exploring the connection between meditation and expanded awareness.
9. Purpose of Practices:	Practices aim to improve mental and emotional states to impact physical health. Example: Mindfulness practices to reduce stress and improve well-being.	Practices aim to expand consciousness for overall well-being. Example: Meditation to achieve higher states of awareness and inner peace.
10. Holistic Approach:	Views the mind and body as interconnected entities.	Emphasizes the integration of consciousness for holistic health.

Example: Understanding how stress affects both mental health and physical well-being.

Example: Engaging in practices that enhance overall awareness, impacting mental, emotional, and spiritual aspects of life.

---

### Concluding Summary

Wellness Science is a complex field encompassing various facets that contribute to an individual's overall well-being. In its major domain, it focuses on the physical aspect, emphasizing exercise, nutrition, sleep, and preventive healthcare. This sphere recognizes the body's vitality as fundamental to well-being.

Within the minor domain, wellness extends to the emotional, mental, and social aspects. Here, practices like mindfulness, stress management, emotional intelligence, and fostering healthy relationships play pivotal roles. These elements acknowledge the interconnectedness of mental and emotional health with overall wellness.

The compound domain amalgamates these dimensions, highlighting the interdependence of physical, mental, emotional, and social well-being. It promotes holistic approaches that integrate these facets to achieve optimal health. This approach recognizes that these dimensions are intricately linked and should be nurtured collectively for comprehensive wellness.

Ultimately, Wellness Science acknowledges the importance of balance and harmony across these domains. By addressing the major, minor, and compound facets of wellness, individuals can cultivate a balanced, fulfilling life, fostering not only physical health but also mental clarity, emotional resilience, and robust social connections.

### References

- Beauchemin, J. D., Gabana, N., Ketelsen, K., & McGrath, C. (2019). Multidimensional wellness promotion in the health and fitness industry. *International Journal of Health Promotion and Education*, 57(3), 148-160.
- Campbell, A. C., Pearce, L. A., Willoughby, M., Borschmann, R., Young, J., Bruun, A., ... & Kinner, S. A. (2023). Adverse childhood experiences, morbidity, mortality and resilience in socially excluded populations: protocol for a systematic review and meta-analysis. *British Medical Journal*, 13(10). Article ID: e074314.
- Camulli, J. E. (2023, December 18). *Optimizing well-being through sensory wellness* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Cong, B., Chen, J. D., & Wei, W. (2023). Gut microbiota and human wellness: Start from the integrated medicine model. *Gut Microbiota and Integrative Wellness*, 1. Corpus ID: 257128398.
- Dahiya, D., & Nigam, P. S. (2022). The gut microbiota influenced by the intake of probiotics and functional foods with prebiotics can sustain wellness and alleviate certain ailments like gut-inflammation and colon-cancer. *Microorganisms*, 10(3). Article ID: 665.

- Dusheck, J. (2016, Summer). Well now: What humans need to flourish. *Stanford Medicine Magazine*, August 15. Retrieved from: <https://stanmed.stanford.edu/well-now/>.
- Fabbrizio, A., Fucarino, A., Cantoia, M., De Giorgio, A., Garrido, N. D., Iuliano, E., ... & Macaluso, F. (2023, June). Smart devices for health and wellness applied to tele-exercise: An overview of new trends and technologies such as IoT and AI. *Healthcare (Basel)*, 11(12). Article ID: 1805.
- Ford, A. L., Nagulesapillai, V., Piano, A., Auger, J., Girard, S. A., Christman, M., ... & Dahl, W. J. (2020). Microbiota stability and gastrointestinal tolerance in response to a high-protein diet with and without a prebiotic, probiotic, and synbiotic: A randomized, double-blind, placebo-controlled trial in older women. *Journal of the Academy of Nutrition and Dietetics*, 120(4), 500-516.
- Francois, A. (2008). Semantic maps and the typology of colexification: Intertwining polysemous network across languages. In M. Vanhove (ed.), *From polysemy to semantic change: Towards a typology of lexical semantic associations*. Studies in language companion series, Vol. 108 (pp. 163-215). New York, NY: Benjamins.
- Fritzsche, K., Goli, F., & Dobos, C. M. (2019). What is psychosomatic medicine? In K. Fritzsche, S. H. McDaniel, & M. Wirsching (eds.), *Psychosomatic medicine: An international guide for the primary care setting* (pp. 3-16). Cham, Germany: Springer International Publishing.
- Gochfeld, M. (2005). Occupational medicine practice in the United States since the industrial revolution. *Journal of Occupational and Environmental Medicine*, 47(2), 115-131.
- Guidolin, D., Anderlini, D., Maura, G., Marcoli, M., Cortelli, P., Calandra-Buonaura, G., ... & Agnati, L. F. (2019). A new integrative theory of brain-body-ecosystem medicine: From the hippocratic holistic view of medicine to our modern society. *International Journal of Environmental Research and Public Health*, 16(17). Article ID: 3136.
- Hsieh, Y. P., Shen, A. C. T., Hwa, H. L., Wei, H. S., Feng, J. Y., & Huang, S. C. Y. (2021). Associations between child maltreatment, dysfunctional family environment, post-traumatic stress disorder and children's bullying perpetration in a national representative sample in Taiwan. *Journal of Family Violence*, 36, 27-36.
- Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. R. (2019). Nurturing nature: How brain development is inherently social and emotional, and what this means for education. *Educational Psychologist*, 54(3), 185-204.
- Jackson, D. B., Jones, M. S., Semenza, D. C., & Testa, A. (2023). Adverse childhood experiences and adolescent delinquency: a theoretically informed investigation of mediators during middle childhood. *International Journal of Environmental Research and Public Health*, 20(4). Article ID: 3202.
- Le Fanu, J. (2011). *The rise and fall of modern medicine*. London, UK: Hachette.
- Lindström, B., & Eriksson, M. (2005). Salutogenesis. *Journal of Epidemiology & Community Health*, 59(6), 440-442.
- Liu, A. W. (2023, December 18). *Family wellness: The communal cornerstone* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Mahler, K., McLaughlin, E., & Anson, D. (2020). Interoception across varying degrees of mental wellness. *American Journal of Occupational Therapy*, 74(S1), NA-NA.
- Markell, D., & Peterson, D. (2019). *Health and fitness for life*. Gresham, OR: MHCC Library Press.

- McCullagh, P. J., & Augusto, J. C. (2011). The internet of Things: The potential to facilitate health and wellness. *Cepis Upgrade*, 12(1), 59-68.
- Melin, M. D. (2016). The industrial revolution and the advent of modern surgery. *Intersect: The Stanford Journal of Science, Technology, and Society*, 9(2), 1-13.
- Montague, E., & Perchonok, J. (2012). Health and wellness technology use by historically underserved health consumers: systematic review. *Journal of Medical Internet Research*, 14(3). Article ID: e2095.
- Murciano-Brea, J., Garcia-Montes, M., Geuna, S., & Herrera-Rincon, C. (2021). Gut microbiota and neuroplasticity. *Cells*, 10(8). Article ID: 2084.
- National Wellness Institute (2023). *NWI overview and press kit*. Retrieved from: <https://nationalwellness.org/about-nwi/>.
- Oyebode, O., Fowles, J., Steeves, D., & Orji, R. (2023). Machine learning techniques in adaptive and personalized systems for health and wellness. *International Journal of Human-Computer Interaction*, 39(9), 1938-1962.
- Pfizer Inc. (2023). What is wellness? Retrieved from: <https://www.pfizer.com/health-wellness/wellness/what-is-wellness#>.
- Plowman, S. A., Sterling, C. L., Corbin, C. B., Meredith, M. D., Welk, G. J., & Morrow, J. R. (2006). The history of FITNESSGRAM®. *Journal of Physical Activity and Health*, 3(Suppl. 2), S5-S20.
- Powles, J. (1973). On the limitations of modern medicine. *Science, Medicine and Man*, 1(1), 1-30.
- Singh, H. (2023, December 18). *Adaptive wellness for people with special needs* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Singhvi, N., Gupta, V., Gaur, M., Sharma, V., Puri, A., Singh, Y., ... & Lal, R. (2020). Interplay of human gut microbiome in health and wellness. *Indian Journal of Microbiology*, 60, 26- 36.
- Tan, M. K. (2023, December 18). Neurosomatic wellness: Understanding the brain-body connection for overall well-being [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Warner, T. D., Leban, L., Pester, D. A., & Walker, J. T. (2023). Contextualizing adverse childhood experiences: The intersections of individual and community adversity. *Journal of Youth and Adolescence*, 52(3), 570-584.
- Wickramaratne, P. C., Phuoc, J. C., & Albattat, A. R. S. (2020). A review of wellness dimension models: For the advancement of the society. *European Journal of Social Sciences Studies*, 5(1), 185-199.
- World Health Organization (2023). *Health and well-being*. The Global Health Observatory. Retrieved from: <https://www.who.int/data/gho/data/major-themes/health-and-well-being>.



## Optimizing Well-Being Through Sensory Wellness

**Camulli Jennifer Erin** PhD, Reg.ET, IACT, FCCT, HonFRSAS, CPABE  
Merlion Paediatric Therapy Clinic, Singapore

Citation: Camulli, J. E. (2023, December 18). *Optimizing well-being through sensory wellness* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>

### Introduction

Health and wellness are two concepts that are often used interchangeably. While wellness is most often thought of in terms of physical health, its reach extends much farther. It encompasses multiple, interdependent dimensions of wellness, including emotional, environmental, financial, and intellectual, to name but a few. Wellness is achieved through active, self-directed activities that are holistic, positive, and affirming. This paper focuses on addressing Sensory Wellness.

### What is Sensory Wellness?

Sensory wellness refers to a state of balance and health in one's sensory experiences, where each sense functions optimally, contributing positively to overall well-being. It involves being attuned to and nurturing sensory experiences to promote mental and emotional health.

### What about Sensory Illness?

On the other hand, sensory illness encompasses conditions or disruptions that affect one's sensory experiences negatively. This could involve sensory processing disorders, conditions that heighten or dull senses, or any ailment impacting the sensory organs, leading to discomfort or impairment in daily life (Schiffman, 2007).

### What We need to know about Sensory Wellness

Sensory wellness is an emerging field of wellness (Schulze, Cavaliere, Soares, and Cocca, 2022) and is generally considered a combined domain of wellness because it encompasses various aspects of well-being related to our senses - sight, hearing, taste, touch, and smell - all of which contribute to our overall health and quality of life. It intertwines with other dimensions of wellness, such as physical, emotional, and even social wellness.

Sensory wellness involves maintaining a healthy balance and sensitivity within our senses across all of our sensory experiences and is vital for overall wellness. It encompasses practices that promote comfort, stimulation, and relaxation for each sensory system: sight, smell, taste, touch, and hearing. These practices can range from mindfulness techniques to exposure to natural environments, which can positively impact the sensory nervous system by reducing stress, improving focus, and enhancing overall well-being. Essentially, it is about nurturing and optimizing our sensory experiences for better mental and physical health.

Very often, most people including the wellness professional themselves confuse between sensory wellness, sensory health, and sensory well-being. There is a difference between the three:

(1) Sensory health typically refers to the physical aspect of sensory functions (e.g., vision, hearing, taste, smell, and touch), and ensuring these senses are in good condition. It is the ability to process sensory information via the sensory organs in an adaptive way (Pizur-Barkenow, 2023).

(2) Sensory wellness, as described in the above paragraph, is the practice of habits that promote sensory health.

(3) Sensory well-being encompasses the emotional and psychological aspects related to sensory experiences, focusing more on how these senses contribute to one's overall happiness, satisfaction, and quality of life. It involves the positive impact of sensory experiences on mental health and emotional well-being.

When sensory health and sensory wellness combine, it results in sensory wellbeing (see Figure 1 below).



Figure 1. Relationship of sensory health and sensory wellness to sensory well-being

### How to measure Sensory Wellness

Sensory wellness is typically determined through standardized instruments that measure sensory processing patterns, or sensory sensitivities. This may include the following instruments:

1. Highly Sensitive Person Scale (HSPS): This is a self-reported questionnaire assessing sensory processing sensitivity (Aron & Aron, 1997; Smolewska, McCabe & Woody, 2006).
2. Sensory Processing Sensitivity Questionnaire (SPSQ): This is a self-reported questionnaire assessing sensory processing sensitivity (Malinakova, Novak, Trnka, & Tavel, 2021).
3. Sensory Sensitivity Scales (SeSS): This is a self-reported questionnaire that assesses visual, auditory and somatosensory sensitivities of adults (Aykan, Vatanserver, Doğanay-Erdoğan & Kalaycıoğlu, 2020).
4. Sensory Health Awareness and Responsiveness Profile (SHARP): This is new instrument (2022) that measures sensory health awareness and responsiveness in adults.
4. Sensory Profile (SP): This is a self-reported questionnaire that assess sensory processing patterns in individuals (Dunn, 1999).

## The Sensory Profile

As the gold standard assessment for sensory processing, the Sensory Profile can be adapted to evaluate sensory wellness in people by analyzing their responses across four sections within the context of four sensory quadrants, i.e., Low Registration, Sensitivity, Seeking, and Avoiding: (1) Sensory Processing, (2) Sensory Modulation, (3) Emotional Responses, and (3) Behavioral Outcomes.

### *1. Sensory Processing Section:*

This area evaluates how individuals react to sensory input (sensory seeking, sensitivity, avoiding). In the Sensory Profile (SP; Dunn, 1999), the four SP quadrants describe different patterns of sensory processing that lead to varied behavioral responses (Engel-Yeger & Dunn, 2011; Lawson & Dunn, 2008; Metz et al., 2019).

*1.1. Low Registration Quadrant:* Individuals in this quadrant might miss or have difficulty detecting sensory stimuli. They could appear unresponsive or unaware of sensory input, leading to potentially overlooking important information or experiencing challenges in engaging with their environment due to a lack of responsiveness.

*1.2. Sensitivity Quadrant:* Those in this quadrant are highly reactive to sensory input. They may become easily overwhelmed by stimuli, leading to discomfort, stress, or even avoidance of certain environments or activities due to their heightened sensitivity.

*1.3. Seeking Quadrant:* Individuals here actively seek out sensory stimulation. They might engage in behaviors that provide intense sensory input to meet their needs, such as seeking tactile, auditory, or visual stimuli. This seeking behavior can sometimes lead to impulsivity or difficulty focusing.

*1.4. Avoiding Quadrant:* Individuals in this quadrant tend to actively avoid or limit exposure to certain sensory stimuli due to discomfort or aversion. They may have preferences for specific environments or routines to minimize exposure to sensory experiences that cause distress or discomfort.

Each quadrant reflects how an individual processes and responds to sensory information, influencing their behaviors, preferences, and interactions with their environment.

### *2. Sensory Modulation Section:*

It assesses the individual's ability to regulate their responses to sensory stimuli (hyper-responsiveness, hypo-responsiveness, sensory seeking). In the Sensory Profile (SP; Dunn, 1999), each SP quadrant reflects different patterns of sensory processing, often observed in individuals with special needs, e.g., cerebral palsy (Louwrens, 2018), specific language impairment (Taal et al., 2013) and autism (Niutanen et al., 2020). Sensory modulation impacts these quadrants as follows:

*2.1. Low Registration Quadrant:* Individuals in this quadrant might miss or have difficulty noticing sensory stimuli. Low sensory modulation can lead to a lack of responsiveness or awareness of sensory input, resulting in a tendency to overlook important information or experiences.

*2.2. Sensitivity Quadrant:* Here, individuals are highly sensitive to sensory input. When sensory modulation is affected, they might struggle with regulating their responses to stimuli, leading

to overreactions or heightened responses to sensory experiences, potentially causing discomfort or distress.

*2.3. Seeking Quadrant:* Those in this quadrant actively seek sensory input. When sensory modulation is impacted, individuals might seek excessive amounts of sensory stimulation or engage in risky behaviors to fulfill their sensory needs, potentially resulting in seeking out intense or extreme experiences.

*2.4. Avoiding Quadrant:* Individuals in this quadrant tend to avoid or withdraw from certain sensory experiences. When sensory modulation is affected, they might demonstrate heightened avoidance behaviors, seeking to minimize exposure to sensory stimuli that they find overwhelming or uncomfortable, potentially limiting their engagement in various activities.

Understanding these impacts helps in tailoring interventions or strategies to support individuals in managing their sensory experiences more effectively.

### ***3. Emotional Responses to Sensory Stimuli Section:***

This section examines how sensory experiences evoke emotional responses like comfort, discomfort, and seeking, as demonstrated in various studies (e.g., Fabbri-Destro et al., 2022; Ng & Hort, 2015).

The Sensory Profile (SP; Dunn, 1999) focuses on sensory processing patterns. Emotional responses to sensory stimuli can impact the quadrants as follows:

*3.1. Low Registration Quadrant:* Individuals here may show minimal emotional responses to sensory input. They might overlook or not react strongly to stimuli, potentially leading to missed opportunities or not recognizing important cues, affecting emotional engagement and responsiveness.

*3.2. Sensitivity Quadrant:* Emotional responses can be intense for individuals in this quadrant. They might react strongly and emotionally to sensory input, leading to heightened emotional states, possibly anxiety or distress, impacting their ability to regulate emotions effectively.

*3.3. Seeking Quadrant:* Emotional responses here might drive a constant pursuit of sensory input. Individuals might seek out emotionally stimulating experiences to achieve an optimal level of arousal, potentially leading to impulsive behaviors or seeking intense emotional experiences.

*3.4. Avoiding Quadrant:* Emotional responses can lead individuals in this quadrant to actively avoid or show aversion to certain sensory experiences due to negative emotional reactions. This might result in withdrawal or attempts to minimize exposure to stimuli that provoke discomfort or distress.

In each quadrant, emotional responses play a significant role in shaping how individuals perceive, interact, and cope with sensory stimuli, influencing their behaviors and emotional states accordingly.

### ***4. Behavioral Outcomes Related to Sensory Processing Section:***

This area evaluates how sensory experiences influence daily life and behavior (see Nesayan et al. 2018, for detail).

In the Sensory Profile (SP; Dunn, 1999), each quadrant reflects different sensory processing patterns:

*4.1. Low Registration Quadrant:* Individuals in this quadrant may struggle to notice or register sensory stimuli. Behavioral outcomes might include a lack of response to environmental cues, appearing passive or unresponsive, and potentially missing important information or sensory input.

*4.2. Sensitivity Quadrant:* People in this quadrant are highly reactive to sensory stimuli. Behavioral outcomes could involve being easily overwhelmed by sensory input, displaying strong emotional reactions, avoiding certain sensory experiences, or demonstrating heightened sensitivity to stimuli.

*4.3. Seeking Quadrant:* Individuals here actively seek out sensory experiences. Behavioral outcomes might include engaging in sensory-seeking behaviors such as touching, fidgeting, seeking intense sensory experiences, or actively exploring the environment to satisfy sensory needs.

*4.4. Avoiding Quadrant:* This quadrant involves avoiding or minimizing exposure to sensory stimuli. Behavioral outcomes could manifest as avoiding specific textures, sounds, or environments, seeking refuge in quiet or controlled environments, or displaying avoidance behaviors in response to particular sensory experiences.

Each quadrant reflects distinct behavioral outcomes influenced by how individuals process sensory information, shaping their responses and interactions with their surroundings.

When reading results, consider a person's patterns of sensory processing, modulation, emotional responses and behavioral outcomes across the four quadrants. For example, high scores in sensory seeking might suggest a need for more sensory input, while high sensitivity scores might indicate discomfort with certain sensations. Patterns can provide insight into a person's sensory experiences and guide interventions to improve sensory wellness.

### **Association of Sensory Wellness with Sensory Nervous System**

Sensory wellness, intricately linked to the efficient functioning of the sensory nervous system, embodies the harmonious balance and optimization of our sensory experiences. As the gateway to perceiving the world, this system plays an integral role in our daily lives, shaping our interactions and reactions. Fostering sensory wellness involves a holistic approach, encompassing physical, mental, and emotional aspects. Through mindfulness practices, such as meditation and sensory exercises, individuals can cultivate a heightened awareness of their senses, nurturing a deeper connection with their environment. Embracing healthy habits, including adequate rest, a balanced diet, and regular physical activity, contributes significantly to maintaining the vitality of the sensory nervous system. Additionally, creating environments that cater to sensory needs and reduce sensory overload bolsters overall wellness. By nurturing and cherishing our sensory health, we embark on a journey toward a more enriched, vibrant, and fulfilling existence, aligning mind, body, and spirit in a symphony of sensory harmony.

## Impact of Sensory Wellness on the Sensory Nervous System

Here are 12 ways Sensory Wellness can impact the sensory nervous system (SNS):

1. **Stress Reduction:**  
Lower stress levels can positively influence the sensitivity and responsiveness of the sensory nervous system.
2. **Improved Focus:**  
Sensory wellness techniques like meditation or mindfulness can enhance concentration and optimize sensory processing.
3. **Enhanced Perception:**  
A well-managed sensory wellness routine can heighten the perception of various sensory inputs, improving overall sensory experiences.
4. **Balanced Sensory Integration:**  
Sensory wellness practices aid in integrating and organizing sensory information efficiently within the nervous system.
5. **Regulation of Sensory Sensitivities:**  
It can help regulate hypersensitivities or hyposensitivities within the nervous system, making responses more balanced.
6. **Optimized Neural Plasticity:**  
Engaging in sensory wellness activities can support the adaptability and plasticity of the sensory nervous system.
7. **Stimulation of Neurotransmitters:**  
Certain sensory wellness activities can stimulate the release of neurotransmitters that affect sensory perception.
8. **Pain Management:**  
Sensory wellness techniques like massage or specific therapies can modulate pain perception by the nervous system.
9. **Improved Sleep Patterns:**  
Good sensory wellness practices contribute to better sleep quality, positively impacting overall nervous system function.
10. **Enhanced Emotional Regulation:**  
Managing sensory wellness supports better emotional regulation, impacting the nervous system's response to sensory stimuli.
11. **Reduced Over-stimulation:**  
Implementing sensory wellness techniques can reduce the impact of over-stimulation on the sensory nervous system.
12. **Overall Neurological Health:**  
A holistic approach to sensory wellness supports the overall health and functionality of the sensory nervous system.

## Conclusion

Sensory Wellness features strongly in the multi-dimensional wellness domain as it is fundamental to the functioning of all wellness dimensions because every moment of every day is a sensory event. We perceive, consider, think about, engage with, and respond to the world through our senses. How these everyday sensory events are experienced has ripple effects on all other dimensions of wellness. This interdependent nature of wellness dimensions is inextricable. Sensory wellness also serves to reduce the risk of mental health issues and neurosomatic illness, as well as social relationships including occupational wellness and family wellness.

Sensory wellness plays a crucial role in enhancing both personal and community well-being by fostering a harmonious relationship between individuals and their environments. At the personal level, maintaining a balance in sensory experiences contributes to mental, emotional, and physical health. Exposure to pleasant sights, sounds, and textures can reduce stress, elevate mood, and improve cognitive function. Moreover, sensory wellness promotes mindfulness (and vice versa), encouraging individuals to engage with their surroundings in a more meaningful way. The practice of mindfulness has become paradigmatic in the pursuit of wellness; being aware, paying attention to, and being present in the moment facilitates self-regulation to maintain [sensory] equilibrium.

On a broader scale, communities benefit from sensory-designed spaces that promote sensory wellness by creating adaptive, inclusive and vibrant spaces that also promote adaptive wellness, family wellness, and social wellness, among others. Thoughtfully designed public areas that consider sensory elements contribute to a sense of belonging and community pride. Additionally, shared sensory experiences can strengthen social bonds, fostering a collective sense of identity and well-being. In essence, prioritizing sensory wellness at both the personal and community levels creates environments that support holistic health and connectedness.

## References

- Aron, E. N. (2013). *The highly sensitive person: How to thrive when the world overwhelms you*. Kensington Publishing Corp.
- Aron, EN. & Aron, A. (1997). Sensory-processing sensitivity and its relation to introversion and emotionality. *Journal of Personality and Social Psychology*, 73, 345-368.
- Aykan, S., Vatansever, G., Doğanay-Erdoğan, B., & Kalaycıoğlu, C. (2020). Development of sensory sensitivity scales (SeSS): Reliability and validity analyses. *Research in Developmental Disabilities*, 100, 103612.
- Chia, K. H. (2023, December 18). *Exploring the opportunities and knowledge in wellness science* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Dunn, W. (2014). *Sensory profile 2*. Bloomington, MN, USA: Psych Corporation.
- Engel-Yeger, B., & Dunn, W. (2011). Exploring the relationship between affect and sensory processing patterns in adults. *British Journal of Occupational Therapy*, 74(10), 456-464.
- Fabbri-Destro, M., Mageri, F., Ianni, C., Corsini, S., Di Stefano, E., Scatigna, S., ... & Narzisi, A. (2022). Early sensory profile in autism spectrum disorders predicts emotional and behavioral issues. *Journal of Personalized Medicine*, 12(10). Article ID: 1593.
- Lawson, L. M., & Dunn, W. (2008). Children's sensory processing patterns and play preferences. *Annual in Therapeutic Recreation*, 16(1), 1-10.
- Liu, A. W. (2023, December 18). *Family wellness: The communal cornerstone*. [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Live Well @UMD (n.d.). 8 Dimensions of Wellness [Blog post]. Retrieved from: <https://umwellness.wordpress.com/8-dimensions-of-wellness/>
- Louwrens, S. (2018). *Sensory modulation patterns in children with Cerebral Palsy: a comparative-descriptive study* (Doctoral dissertation, University of Pretoria). [https://repository.up.ac.za/bitstream/handle/2263/67775/Louwrens\\_Sensory\\_2018.pdf?sequence=1](https://repository.up.ac.za/bitstream/handle/2263/67775/Louwrens_Sensory_2018.pdf?sequence=1).

- Malinkakova, K., Novak, L., Trnka, R., & Tavel, P. (2021). Sensory processing sensitivity questionnaire: A psychometric evaluation and associations with experiencing the Covid-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(24), 12962
- Metz, A. E., Boling, D., DeVore, A., Holladay, H., Liao, J. F., & Vlutch, K. V. (2019). Dunn's model of sensory processing: an investigation of the axes of the four-quadrant model in healthy adults. *Brain Sciences*, 9(2), 1-35.
- Nesayan, A., Asadi Gandomani, R., Movallali, G., & Dunn, W. (2018). The relationship between sensory processing patterns and behavioral patterns in children. *Journal of Occupational Therapy, Schools, & Early Intervention*, 11(2), 124-132.
- Ng, M., & Hort, J. (2015). Insights into measuring emotional response in sensory and consumer research. In *Rapid sensory profiling techniques* (pp. 71-90). Woodhead Publishing.
- Niutanen, U., Harra, T., Lano, A., & Metsäranta, M. (2020). Systematic review of sensory processing in preterm children reveals abnormal sensory modulation, somatosensory processing and sensory-based motor processing. *Acta Paediatrica*, 109(1), 45-55.
- Pizur-Barnekow, K. (2023, November 2, 9, & 16). "Sensory health, relationships, & co-occupation: Promoting self-regulation through early shared experiences". Star Institute's Sensory Health in Children virtual summit presentation, Centennial, Colorado, USA. Available online: <https://bitly.ws/36j52>
- Schiffman, S. S. (2007). Critical illness and changes in sensory perception. *Proceedings of the Nutrition Society*, 66(3), 331-345.
- Schulze, V., Cavaliere, C., Soares, K., & Cocca, G. (2022). Development and validation of the Sensory Health Awareness and Responsiveness Profile. The American Journal of Occupational Therapy, 76 (Poster session, AOTA American Occupational Therapy Association presented on March 31, 2022).
- Singh, H. (2023, December 18). *Adaptive wellness for people with special needs* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Smolewska, K. A., McCabe, S. B., & Woody, E. Z. (2006). A psychometric evaluation of the Highly Sensitive Person Scale: The components of sensory-processing sensitivity and their relation to the BIS/BAS and "Big Five". *Personality and Individual Differences*, 40(6), 1269-1279.
- Stoewen, D. L. (2017). Dimensions of wellness: Change your habits, change your life. *The Canadian Veterinary Journal*, 58(8), 861-862.
- Taal, M. N., Rietman, A. B., Meulen, S. V., Schipper, M., & Dejonckere, P. H. (2013). Children with specific language impairment show difficulties in sensory modulation. *Logopedics Phoniatrics Vocology*, 38(2), 70-78.
- Tan, M. K. (2023, December 18). *Neurosomatic wellness in brain-body balance*. [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>



## Adaptive Wellness for People with Special Needs

**Harjit Singh** Prof. Dip. Comm. & Soc Services (Protection & Rehab), Cred.SNCP, Cred.SNET, MIACT  
Merlion Academy, Singapore

Citation: Singh, H. (2023, December 18). *Adaptive wellness for people with special needs* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>

### What is Adaptive Wellness?

Adaptive Wellness (or the well-being of one's ability to adapt) refers to a holistic approach to well-being that adjusts and evolves based on changing needs, circumstances, and environment of an individual with special needs (also see Formusa, 2023; Khattak et al., 2016). It is about tailoring wellness practices to suit unique situations and personal requirements, e.g., at home, in daycare / activity center, or at workplace.

### The Seven Domains of Adaptive Wellness

There are seven key domains of Adaptive Wellness which include the following:

1. **Physical Wellness:** Involves caring for the body through exercise, nutrition, and overall health maintenance. For instance, exercising regularly, eating a balanced diet, and getting enough sleep.
2. **Emotional Wellness:** Focuses on understanding and managing emotions effectively. Examples include practicing mindfulness, seeking therapy, and cultivating healthy relationships.
3. **Intellectual Wellness:** Nurtures the mind by engaging in lifelong learning, critical thinking, and creativity. This could involve reading, learning new skills, or solving puzzles.
4. **Social Wellness:** Encompasses healthy relationships and a supportive social network. Examples include spending time with loved ones, joining community groups, and fostering meaningful connections.
5. **Occupational Wellness:** Involves finding fulfillment and satisfaction in one's work or chosen occupation. This may involve striving for work-life balance, setting career goals, and seeking professional development.
6. **Environmental Wellness:** Focuses on maintaining a healthy living environment. Examples include reducing one's carbon footprint, spending time outdoors, and supporting eco-friendly practices.
7. **Spiritual Wellness:** Nurtures the soul and explores meaning and purpose in life. This could involve meditation, practicing religion or spirituality, and engaging in self-reflection.

These domains collectively contribute to Adaptive Wellness by addressing various aspects of an individual's life, promoting balance, and adapting to changes for overall well-being. They involve resilience, adaptation and adaptability (Pike, Dawley, & Tomaney, 201

### Why is Adaptive Wellness important for People with Special Needs?

Adaptive Wellness has to do with resilience, adaptation and adaptability (Pike, Dawley, & Tomaney, 2010) is crucial for individuals with special needs because of the following reasons:

1. Customization: Tailoring wellness programs to their unique abilities and requirements ensures they can participate effectively.
2. Improved Functionality: It enhances physical, mental, and emotional well-being, leading to better functionality in daily activities.
3. Enhanced Social Interaction: Participation in adaptive wellness programs facilitates socialization, fostering connections with peers and reducing isolation.
4. Physical Health Benefits: These programs often incorporate exercises promoting strength, flexibility, and coordination, vital for overall health.
5. Emotional Support: Adaptive wellness programs offer a supportive environment, promoting confidence, self-esteem, and emotional resilience.
6. Stress Reduction: Engaging in wellness activities helps manage stress and anxiety, contributing to overall mental health.
7. Empowerment and Independence: It empowers individuals by teaching them skills to independently manage their health, fostering a sense of control and autonomy.

### Factors that can impair/impact Adaptive Wellness

The factors that can impair or impact Adaptive Wellness can vary, but some common ones include stress, lack of sleep, poor nutrition, sedentary lifestyle, social isolation, environmental factors, and unresolved emotional issues (Gastin, Meyer, & Robinson, 2013; also see Formusa, 2023, for latest detail). These factors can affect our ability to adapt, cope, and maintain overall wellness.

### How can We measure Adaptive Wellness?

Measuring Adaptive Wellness involves assessing various factors that contribute to an individual's ability to adapt and thrive. The following key factors are included here:

1. Physical Health: This pertains to the body's overall condition.  
Example: BMI, physical fitness level, and regular health check-ups.
2. Mental Health: Focuses on emotional well-being and cognitive functioning.  
Example: Psychological assessments, stress levels, and mood tracking.
3. Social Support: The network of relationships and support systems.  
Example: Social connectedness scale, perceived social support, and quality of relationships.
4. Resilience: Capacity to bounce back from challenges.  
Example: Resilience scales measuring adaptability, coping strategies, and problem-solving skills.
5. Lifestyle Habits: Daily behaviors affecting wellness.  
Example: Sleep quality assessments, diet evaluations, and substance use questionnaires.
6. Environmental Factors: Impact of surroundings on wellness.  
Example: Assessments of living conditions, access to resources, and exposure to stressors.

There are recommended four instruments that can be administered to measure Adaptive Wellness and they are as follows:

1. World Health Organization-5 Well-Being Index (WHO-5 WBI): This is a self-reported questionnaire assessing overall well-being (Krieger et al., 2014; Topp, Østergaard, Søndergaard, & Bech, 2015).
2. Perceived Stress Scale (PSS): This tool measures the degree of stress an individual perceives in their life (Cohen, Kamarck, & Mermelstein, 1983; Lee, 2012; Reis, Hino, & Añez, 2010).
3. Resilience Scale (RS): This rating scale assesses an individual's ability to adapt and recover from stress (Connor & Davidson, 2003; Smith et al., 2008; Wagnild, 2009).
4. Short Form-36 Health Survey (SF-36-HS): This survey form measures various aspects of physical and mental health (Hays & Shapiro, 1992; RAND Corporation, 2016; Steward et al., 1992; Ware & Sherbourne, 1992).

Each instrument has its specific focus and methodology, helping to evaluate different facets of adaptive wellness.

### Conclusion

Adaptive Wellness, in its pursuit of personalized approaches to health, stands as a beacon of paramount significance in today's dynamic world. Its importance lies in its inherent ability to cater to individual needs, acknowledging the unique amalgamation of physical, mental, and emotional aspects that contribute to one's well-being.

This paradigm recognizes that each person's wellness journey is diverse, embracing various lifestyles, abilities, and preferences. By tailoring interventions, strategies, and therapies to suit these individual intricacies, adaptive wellness fosters inclusivity and empowerment. It champions the idea that there is no one-size-fits-all solution to wellness, promoting a more holistic, sustainable, and effective approach to health management.

Furthermore, in an era where global shifts, technological advancements, and societal changes continuously influence our lives, Adaptive Wellness serves as an anchor, allowing us to navigate the flux of modern existence. It encourages resilience, adaptability, and self-awareness, fostering a proactive stance towards health that can enhance not only the quality of life but also promote longevity and overall vitality. Embracing Adaptive Wellness translates into a deeper understanding of oneself, cultivating a harmonious balance that resonates across all facets of life.

### References

- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385–396.
- Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety*, 18(2), 76-82.
- Formusa, V. (2023). *Exploring the Utilization of a Wellness Framework for Children and Young People with Intellectual and Developmental Disabilities within Adaptive Sports Programs* (Doctoral dissertation, University of Toronto, Canada).
- Gastin, P. B., Meyer, D., & Robinson, D. (2013). Perceptions of wellness to monitor adaptive responses to training and competition in elite Australian football. *The Journal of Strength & Conditioning Research*, 27(9), 2518-2526.

- Hays, R. D., & Shapiro, M. F. (1992). An Overview of Generic Health-Related Quality of Life Measures for HIV Research. *Quality of Life Research*, 1, 91-97.
- Khattak, A. M., Khan, W. A., Pervez, Z., Iqbal, F., & Lee, S. (2016). Towards a self-adaptive system for social wellness. *Sensors*, 16(4), 531.
- Krieger, T., Zimmermann, J., Huffziger, S., Uhl, B., Diener, C., Kuehner, C., & Holtforth, M. G. (2014). Measuring depression with a well-being index: further evidence for the validity of the WHO Well-Being Index (WHO-5) as a measure of the severity of depression. *Journal of Affective Disorders*, 156, 240-244.
- Lee, E. H. (2012). Review of the psychometric evidence of the perceived stress scale. *Asian Nursing Research*, 6(4), 121-127.
- Pike, A., Dawley, S., & Tomaney, J. (2010). Resilience, adaptation and adaptability. *Cambridge Journal of Regions, Economy and Society*, 3(1), 59-70.
- Rand Corporation (2016). 36-item short form survey instrument (SF-36). Santa Monica, CA: The Author.
- Reis, R. S., Hino, A. A., & Añez, C. R. (2010). Perceived stress scale. *Journal of Health Psychology*, 15(1), 107-114.
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15, 194-200.
- Steward, A. L., Sherbourne, C., Hayes, R. D., et al. (1992). Summary and discussion of MOS measures. In A. L. Stewart & J. E. Ware (eds.), *Measuring functioning and well-being: The medical outcome study approach* (pp. 345-371). Durham, NC: Duke University Press.
- Topp, C. W., Østergaard, S. D., Søndergaard, S., & Bech, P. (2015). The WHO-5 Well-Being Index: a systematic review of the literature. *Psychotherapy and Psychosomatics*, 84(3), 167-176.
- Wagnild, G. (2009). A review of the Resilience Scale. *Journal of Nursing Measurement*, 17(2), 105-113.
- Ware, J. E., Jr., & Sherbourne, C. D. (1992). The MOS 36-Item short-form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care*, 30, 473-483.

## Family Wellness: The Communal Cornerstone

**Ann Wujing Liu** Dip. Fin. Informatics, TEIL Credential, Cred.DDAT, Reg.EdTx, MIACT  
Merlion Pediatric Therapy Clinic, Chengdu (PRC), & Singapore

Citation: Liu, A. W. (2023, December 18). *Family wellness: The communal cornerstone*. [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>

### What is Family Wellness?

Family wellness (Fannin, 1987) refers to the collective health, balance, and overall well-being of all members within a family unit. It encompasses physical, emotional, mental, and social aspects, emphasizing mutual support, communication, healthy habits, and fostering positive relationships among family members.

### The Seven Key Domains of Family Wellness

Family wellness encompasses the overall health and well-being of a family unit. The seven key domains of family wellness typically include:

1. **Physical Wellness:** Involves healthy habits, nutrition, exercise, and regular check-ups to maintain optimal physical health for every family member.
2. **Emotional Wellness:** Focuses on understanding and managing emotions, fostering healthy relationships, and creating a supportive environment to address mental health needs.
3. **Social Wellness:** Involves building strong relationships within and outside the family, fostering a sense of belonging, and supporting each other socially.
4. **Intellectual Wellness:** Encourages lifelong learning, stimulating curiosity, and engaging in activities that challenge and expand knowledge and skills.
5. **Environmental Wellness:** Focuses on creating a safe, healthy, and sustainable living environment, considering factors like home safety, access to resources, and eco-conscious practices.
6. **Occupational Wellness:** Involves finding a balance between work, family life, and personal interests, ensuring fulfillment and satisfaction in one's chosen pursuits.
7. **Spiritual Wellness:** Encompasses personal beliefs, values, and purpose, encouraging reflection, mindfulness, and practices that provide a sense of meaning and connection to something greater.

Balancing these domains within a family context contributes to overall family wellness and a fulfilling life for each member.

### Why the Need for Family Wellness Programs Today?

Family wellness programs are crucial today (MacLeod & Nelson, 2000; Nelson, Laurendeau, & Chamberland, 2001), more so in the practice of family medicine (McGrady, Brennan, & Lynch, 2009), because they provide a structured approach to address various aspects of well-being, including physical health, mental health, nutrition, communication, and relationship building within families. In today's fast-paced world, these programs help

families cope with stress, enhance communication, promote healthy habits, and strengthen bonds, fostering overall well-being for each member and the family unit as a whole. They also create a supportive environment for individuals to navigate challenges and develop resilience together.

### Factors that Impact Family Wellness Programs

Family Wellness Programs (MacLeod & Nelson, 2000; Nelson, Laurendeau, & Chamberland, 2001) can be impacted by various factors:

1. **Communication Issues:** Poor communication within a family can lead to misunderstandings and conflicts. For example, not expressing feelings or needs clearly might create tension within the family.
2. **Financial Stress:** Financial difficulties can strain family relationships. For instance, struggling to meet basic needs or facing debt can cause anxiety and affect the overall well-being of family members.
3. **Substance Abuse:** Substance abuse, such as alcohol or drug addiction, can significantly disrupt family dynamics, leading to emotional distress, neglect, and instability.
4. **Unresolved Conflicts:** Not addressing conflicts or avoiding resolution can create long-lasting tension within the family. For instance, unresolved disagreements between parents might impact children's well-being.
5. **Lack of Quality Time:** Busy schedules and excessive commitments can result in a lack of quality time spent together, affecting bonding and emotional connections among family members.

### Key Factors Involved in Family Wellness Measurement

In any attempt to measure the Family Wellness (e.g., Larson, Wilson, & Beley, 1987), it involves considering various aspects and there are seven key factors. They often include the following:

1. **Communication:** Healthy families have open, respectful, and frequent communication.
2. **Emotional Support:** Providing care, empathy, and understanding among family members.
3. **Resilience:** The ability to cope with challenges and bounce back from difficult situations.
4. **Connectedness:** Strong bonds and positive relationships within the family unit.
5. **Conflict Resolution:** Effective methods for resolving conflicts constructively.
6. **Shared Values:** Having common beliefs and goals that unite the family.
7. **Adaptability:** Flexibility and adjustment to changes within the family structure or dynamics.

### How to Measure Family Wellness?

Here are four instruments available to measure family wellness, such as:

1. **Family Assessment Device (FAD;** Bihum, Wamboldt, Gavin, & Wamboldt, 2002; Epstein, Baldwin, & Bishop, 1983; Mansfield, Keitner, & Dealy, 2015): Assesses communication, problem-solving, roles, affective responsiveness, affective involvement, behavior control, and general functioning within families.
2. **Family Environment Scale (FES;** Moos, 1990; Roosa & Beals, 1990; Sanford, Bingham, & Zucker, 1999): Evaluates cohesion, expressiveness, conflict, independence,

achievement orientation, intellectual-cultural orientation, and moral-religious emphasis within families.

3. Family APGAR (Good et al., 1979; Smilkstein, 1978; Smilkstein, Ashworth, & Montano, 1982): Focuses on adaptation, partnership, growth, affection, and resolve within families.
4. Olson Circumplex Model (Burr & Lowe, 1987; Olson, 1986, 2000): Assesses family cohesion, flexibility, and communication through the Family Adaptability and Cohesion Evaluation Scales (FACES; Place, Hulsmeier, Brownrigg, & Soulsby, 2005; Rodick, Henggeler, & Hanson, 1986).

Choosing the right instrument often depends on the specific aspects of family wellness you aim to measure and the depth of assessment required.

## Conclusion

Family wellness is the cornerstone of a thriving society, pivotal in shaping individuals and communities (Gottlieb & Outten, 2011). It encompasses physical, emotional, and mental health, nurturing strong bonds and creating a supportive environment. The importance of family wellness lies in its profound impact on every member's well-being. A harmonious family fosters a sense of belonging, security, and stability, laying the foundation for positive relationships and personal growth.

By prioritizing family wellness, individuals learn crucial life skills like communication, empathy, and resilience. This, in turn, significantly reduces the risk of mental health issues, strengthens emotional resilience, and enhances overall quality of life. A healthy family dynamic serves as a buffer against stressors and challenges, promoting a nurturing space where members can thrive.

Moreover, the ripple effects of family wellness extend beyond the household, influencing societal well-being. Strong families contribute to a healthier community fabric, fostering empathy, cooperation, and mutual support among individuals. Investing in family wellness is not just a personal endeavor but a societal imperative, shaping the present and future generations for a more compassionate and resilient world.

## References

- Bihum, J. T., Wamboldt, M. Z., Gavin, L. A., & Wamboldt, F. S. (2002). Can the Family Assessment Device (FAD) be used with school aged children? *Family Process, 41*(4), 723- 731.
- Burr, W. R., & Lowe, T. A. (1987). Olson's circumplex model: A review and extension. *Family Science Review, 1*, 5-22.
- Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster family assessment device. *Journal of Marital and Family Therapy, 9*(2), 171-180.
- Fannin, R. A. (1987). *Family wellness: An ecological perspective*. ERIC Number: ED287125
- Good, M. J. D., Smilkstein, G., Good, B. J., Shaffer, T., & Arons, T. (1979). The family APGAR index: a study of construct validity. *Journal of Family Practice, 8*(3), 577-582.
- Gottlieb, K., & Outten, B. (2011). Family wellness warriors. *Family and Community Health, 235*-241.

- Larson, J. H., Wilson, S. M., & Beley, R. (1987). The assessment of family wellness in a university employee wellness program. *American Journal of Health Promotion, 2*(3), 20-30.
- MacLeod, J., & Nelson, G. (2000). Programs for the promotion of family wellness and the prevention of child maltreatment: A meta-analytic review. *Child Abuse & Neglect, 24*(9), 1127-1149.
- Mansfield, A. K., Keitner, G. I., & Dealy, J. (2015). The family assessment device: an update. *Family Process, 54*(1), 82-93.
- McGrady, A., Brennan, J., & Lynch, D. (2009). Effects of wellness programs in family medicine. *Applied Psychophysiology and Biofeedback, 34*, 121-126.
- Moos, R. H. (1990). Conceptual and empirical approaches to developing family-based assessment procedures: Resolving the case of the Family Environment Scale. *Family Process, 29*(2), 199-208.
- Nelson, G., Laurendeau, M.-C., & Chamberland, C. (2001). A review of programs to promote family wellness and prevent the maltreatment of children. *Canadian Journal of Behavioral Science/Revue Canadienne des Sciences du Comportement, 33*(1), 1-13.
- Olson, D. H. (1986). Circumplex model VII: Validation studies and FACES III. *Family Process, 25*(3), 337-351.
- Olson, D. H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy, 22*(2), 144-167.
- Place, M., Hulsmeier, J., Brownrigg, A., & Soulsby, A. (2005). The family adaptability and cohesion evaluation scale (FACES): An instrument worthy of rehabilitation? *Psychiatric Bulletin, 29*(6), 215-218.
- Rodick, J. D., Henggeler, S. W., & Hanson, C. L. (1986). An evaluation of the family adaptability and cohesion evaluation scales and the circumplex model. *Journal of Abnormal Child Psychology, 14*, 77-87.
- Roosa, M. W., & Beals, J. (1990). Measurement issues in family assessment: The case of the Family Environment Scale. *Family Process, 29*(2), 191-198.
- Sanford, K., Bingham, C. R., & Zucker, R. A. (1999). Validity issues with the Family Environment Scale: Psychometric resolution and research application with alcoholic families. *Psychological Assessment, 11*(3), 315-325.
- Singh, H. (2023, December 18). *Adaptive wellness for people with special needs* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Smilkstein, G. (1978). The family APGAR: a proposal for a family function test and its use by physicians. *Journal of Family Practice, 6*(6), 1231-1239.
- Smilkstein, G., Ashworth, C., & Montano, D. (1982). Validity and reliability of the family APGAR as a test of family function. *Journal of Family Practice, 15*(2), 303-311.



## Neurosomatic Wellness in Brain-Body Balance

**Tan Meng Kiat** M.Ed., M.Sc. (Neuroscience), FCA, BFP  
Merlion Pediatric Therapy Clinic, Singapore

Citation: Tan, M. K. (2023, December 18). *Neurosomatic wellness in brain-body balance*. [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>

### What is Neurosomatic Wellness?

Neurosomatic wellness focuses on the relationship between the mind and body (Field, 2019). It involves techniques that integrate mental and physical health to address issues like chronic pain, stress, or emotional imbalances. Examples include practices such as meditation, yoga, biofeedback, and mindfulness therapy, which aim to promote overall well-being by harmonizing mental and physical states.

### What is Neurosomatic Illness?

The opposite of neurosomatic wellness is neurosomatic illness. Briefly defined, neurosomatic illness refers to physical symptoms that originate from psychological or emotional factors (see Tian et al., 2023, for detail).

When sickness (or illness) strikes a person, the neurosomatic (brain-body) mechanism swiftly responds to aid recovery (Viamontes, 2009). The immune system signals the brain, triggering adjustments. The brain orchestrates the release of hormones, like cortisol, to manage stress and inflammation. This communication regulates temperature, redirects energy, and prompts rest to bolster immune function, all aimed at helping the body combat illness. Moreover, the brain prompts behavioral changes, like decreased appetite or increased sleep, to conserve energy for healing.

Below are seven selected examples of neurosomatic illness:

1. **Fibromyalgia:** Characterized by widespread musculoskeletal pain often accompanied by fatigue, sleep, memory, and mood issues.
2. **Chronic Fatigue Syndrome (CFS):** Involves extreme fatigue that doesn't improve with rest, along with other symptoms like headaches and muscle pain.
3. **Irritable Bowel Syndrome (IBS):** A digestive disorder causing abdominal pain, cramping, bloating, and changes in bowel habits without any apparent cause.
4. **Tension Headaches:** Caused by stress or muscle tension, resulting in mild to moderate pain in the head and neck.
5. **Psychogenic Non-Epileptic Seizures (PNES):** Seizure-like episodes triggered by psychological factors rather than abnormal electrical brain activity.
6. **Chronic Pelvic Pain Syndrome (CPPS):** Recurring pain in the pelvic region without a clear physical cause.
7. **Multiple Chemical Sensitivity (MCS):** Sensitivity or intolerance to various chemicals, causing symptoms like headaches, dizziness, and fatigue.

### How the Brain can be impacted by Neurosomatic Illnesses?

Neurosomatic illnesses can affect various parts of the brain, including:

1. Prefrontal Cortex: This part governs decision-making, planning, and personality. In neurosomatic illnesses, it might result in impaired judgment, difficulty focusing, or personality changes.
2. Limbic System (Amygdala and Hippocampus): This system is responsible for emotions and memory. Impact on this area can lead to mood swings, anxiety, depression, or memory issues.
3. Hypothalamus: It regulates hormones, sleep, and body temperature. Dysfunction might lead to sleep disturbances, changes in appetite, or temperature regulation issues.
4. Brainstem: It controls basic bodily functions like heart rate, breathing, and consciousness. Impact on this area could result in autonomic nervous system dysregulation, affecting these fundamental bodily functions.
5. Cerebellum: It coordinates movement and balance. Dysfunction may cause coordination problems, tremors, or difficulties with motor skills.
6. Basal Ganglia: It involves in the movement control. Issues here can result in movement disorders like Parkinson's disease or involuntary movements.
7. Thalamus: It relays sensory and motor signals to the cerebral cortex. Dysfunction might lead to sensory disturbances or difficulties in processing sensory information.

These impacts can vary widely based on the specific condition and its severity, leading to a range of symptoms affecting cognition, emotions, movement, and bodily functions.

### Why Neurosomatic Wellness is Essential for Holistic Health

Neurosomatic wellness is crucial for holistic health. Achieving neurosomatic wellness involves a holistic approach that integrates physical, mental, and emotional well-being through lifestyle modifications, healthy habits, and mindful practices.

Below are my seven reasons with seven ways to achieve neurosomatic wellness:

1. Stress Reduction: Meditation, yoga, deep breathing exercises, and mindfulness practices (including dialectical behavioral therapy and mindfulness-based cognitive therapy) can help manage stress levels, promoting neurosomatic wellness by calming the mind and body.
2. Improved Mental Health: Engaging in cognitive exercises, therapy, and adopting a balanced lifestyle that includes adequate sleep, social connections, and hobbies supports mental well-being or health, contributing to neurosomatic wellness.
3. Enhanced Physical Fitness: Regular exercise, such as cardio, strength training, or yoga, plays an essential role in promoting neurosomatic wellness, not only strengthens the body, but also positively impacts brain function and mental well-being.
4. Balanced Nutrition: Consuming a well-rounded diet rich in fruits, vegetables, whole grains, lean proteins, and healthy fats supplies essential nutrients that benefit both the brain and body, supporting neurosomatic wellness.
5. Quality Sleep: Establishing good sleep hygiene practices, like maintaining a consistent sleep schedule, creating a restful sleep environment, and winding down before bed, is vital for optimal neurological and physical function.
6. Mind-Body Connection: Practices like tai chi, acupuncture, or biofeedback strengthen the mind-body connection, fostering a deeper understanding and harmony between mental and physical states.

7. Reduced Inflammation: Incorporating anti-inflammatory foods (e.g., turmeric, fatty fish) and lifestyle habits (e.g., stress management, regular exercise) can help reduce inflammation in the body, benefiting both the nervous system and overall health.

## Conclusion

Neurosomatic wellness stands as a cornerstone in the realm of holistic well-being, intertwining the intricate connections between the mind (Noos or Nous) and body (Soma). This holistic approach recognizes the profound impact of neurological and somatic integration on overall wellness. Addressing mental and physical health as a unified entity, neurosomatic wellness delves into the interconnectedness of our thoughts, emotions, and bodily sensations.

By acknowledging the symbiotic relationship between neurological processes and somatic experiences, individuals can nurture a balanced state, fostering a harmonious alignment between mind and body. Techniques like mindfulness, yoga, meditation, and other mind-body practices empower individuals to cultivate self-awareness, manage stress, and enhance overall health. This approach acknowledges that our mental state significantly influences physical well-being and vice versa, creating a cycle where a healthy mind fosters a healthy body and vice versa.

As Ralph Waldo Emerson (b.1803-d.1882), an American essayist, lecturer, philosopher, abolitionist and poet who led the transcendentalist movement of the mid-19th century, once remarked, "The first wealth is health." This sentiment encapsulates the fundamental truth that a sound mind is the cornerstone of a healthy body. By embracing neurosomatic wellness and recognizing the interconnectedness of mental and physical health, individuals pave the way towards holistic well-being, thereby nurturing vitality, resilience, and a profound sense of wholeness.

## References

- Camulli, J. E. (2023, December 18). *Optimizing well-being through sensory wellness* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Chia, K. H. (2023, December 18). *Exploring the opportunities and knowledge in wellness science* [Paper presentation]. IACT-Dubai Chapter e-Colloquium on Wellness Science (online). <https://paediatrictx.com/iact-dubai-ecolloquium-wellness-science/>
- Field, T. A. (2019). Bridging the brain–body divide: A commentary and response to Wilkinson. *The Journal of Humanistic Counseling*, 58(2), 108-118.
- Guidolin, D., Anderlini, D., Maura, G., Marcoli, M., Cortelli, P., Calandra-Buonaura, G., ... & Agnati, L. F. (2019). A new integrative theory of brain-body-ecosystem medicine: From the hippocratic holistic view of medicine to our modern society. *International Journal of Environmental Research and Public Health*, 16(17), 3136.
- Loizzo, J. J. (2016). The subtle body: An interoceptive map of central nervous system function and meditative mind–brain–body integration. *Annals of the New York Academy of Sciences*, 1373(1), 78-95.
- Malchiodi, C. A. (2020). *Trauma and expressive arts therapy: Brain, body, and imagination in the healing process*. New York, NY: Guilford.

- Pretty, J., Rogerson, M., & Barton, J. (2017). Green mind theory: how brain-body-behaviour links into natural and social environments for healthy habits. *International Journal of Environmental Research and Public Health*, 14(7). Article ID: 706.
- Ray, O. (2004). How the mind hurts and heals the body. *American Psychologist*, 59(1), 29-40.
- Rossi, E. L. (2013). The psychobiology of mind-body healing: The vision and state of the art. *Developing Ericksonian Therapy*, 127-148.
- Tian, Y. E., Di Biase, M. A., Mosley, P. E., Lupton, M. K., Xia, Y., Fripp, J., ... & Zalesky, A. (2023). Evaluation of Brain-Body Health in Individuals with Common Neuropsychiatric Disorders. *JAMA Psychiatry*, 80(6), 567-576.
- Viamontes, C. T. (2009). The sickness response: An adaptive brain-body reaction to medical illness. *Psychiatric Annals*, 39(12), 985-996.
- Viamontes, G. I., & Nemeroff, C. B. (2009). Brain-body interactions: The physiological impact of mental processes-the neurobiology of the stress response. *Psychiatric Annals*, 39(12), 975-984.
- Weinberg, I. (2011). *Neurophysics: Exploring the multiple dimensions of consciousness*. Self-published [www.neuronostic.com]. Available online: <https://www.neuronostic.com/>.