



Autonomic Homeostasis Activation (AHA)

A White Paper by Tom Pals | 2023

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Introduction

Autonomic Homeostasis Activation (AHA) is a somatic sensory therapeutic intervention that facilitates somatic homeostasis by allowing the brain to normalize the impacts of chronic stress and trauma. The normalization is accomplished with an initial activation of involuntary neurobiological homeostatic activity in the enteric nervous system (part of the autonomic nervous system) through a sensory awareness (interoception) of involuntary neurobiological activity. Homeostasis is the restoration of an optimal state of somatic function connected with a reaction of the system to a change. Stress is a disruption of normal functioning. Chronic Stress and trauma are extreme disruptions of normal functioning to a degree that homeostasis does not naturally occur due to interference from circumstances, people (including the person themselves), and lack of opportunity. Interoception is the sensory awareness of somatic activity.

In contrast to other somatic interventions, AHA is not doing something to the brain and body. AHA is simply initiating and then allowing the natural process of homeostasis to occur without interference. I had originally used the term homeostasis in the name for the intervention but changed it to healing as healing was more widely understood and reflected the effect of the intervention with the normalization to optimal function. However, I invariably wound up explaining homeostasis in any event. While it has been known as Autonomic Healing Activation for some years I am returning to its original designation, Autonomic Homeostasis Activation, as it is more accurate.

The homeostatic (normalizing/optimizing) activity in Autonomic Homeostasis Activation involves involuntary somatic activity. The homeostatic sensations and movements commonly reported in a session include itching, twitching, tingling, changes in body temperature and breathing, optic nerve activity (seeing colors and shapes), aches and sometimes pains. The deeper and longer the homeostasis process continues the more beneficially unusual the involuntary activity becomes. When the state of homeostasis is reached all involuntary somatic activity simply stops. Although there are involuntary processes involved in homeostasis common to all human beings, each

person's brain creates a unique combination of involuntary activity, all of which is restorative of normal, optimum function (aka homeostasis).

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Chronic stress and trauma disrupt the otherwise complimentary but opposite functions of the sympathetic (“flight or fight”) and parasympathetic (“relax and recover”) response to sensed or perceived stress. The disruption can cause these naturally self-protective functions to become antagonistic.

The antagonistic condition is often described by clients as a chronic “flight or fight” stress reaction without normalization to “rest and digest” (homeostasis). What I have discovered is that the enteric nervous system is key to homeostasis in the sympathetic and parasympathetic nervous systems.

The Typical AHA Session

Prior to the AHA session clients rate their sense of stress, anxiety, depression and anger, what I jokingly refer to as the four horsemen of the stress apocalypse, on a scale where 0 = none to 10 = most severe. For approximately 98% of clients, those who do not *interfere with the involuntary activity or think of it as unwelcome or detrimental to well being, when the state of homeostasis is reached the sense of those four areas is reported as “0 - none” no matter how high each was rated prior to the AHA session. I have had many clients who have rated all four (stress, anxiety, depression and anger) indicators of a lack of homeostasis as “10 = most severe” and who rated each as “0 = none” at the end of their AHA session. (*For example, like the child who finds the healing itching sensation in the healing of a cut or scrape as unwelcome and interferes with the natural healing process by scratching the itch.) For 1 to 2% AHA is ineffective due to the person interfering with or interpreting the involuntary activity as unwelcome or detrimental.

The average length of time necessary for homeostasis completion is 4 to 6 hours for 85 to 90% of people. I have had sessions last as short as 2.5 to 3 hours and as long as 8 to 10 hours; both of which are unusual. The length of time required appears to reflect two variables, the amount of stress and trauma the individual has experienced and their cognitive comfort with observing the involuntary activity.

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While completing AHA in a single session is recommended, the nature of the activation of homeostasis with interoceptive sensory awareness allows for it to be completed in multiple shorter sessions, cumulatively reflecting the entire process. After the AHA session the individual has a means to manage stress on a daily basis through activation of homeostasis, including intervening when stress or trauma is experienced.

Homeostasis

In *The Wisdom of the Body* (1932), Dr. Walter Cannon wrote, *“The ability of living beings to maintain their own constancy has long impressed biologists. The idea that disease is cured by natural powers, by a vis medicatrix naturae, an idea which was held by Hippocrates, implies the existence of agencies which are ready to operate correctively when the normal state of the organism is upset.”* Dr. Cannon coined the term homeostasis to describe this capacity of a living being to maintain or restore and optimize constancy.

“The coordinated physiological processes which maintain most of the steady states in the organism are so complex and so peculiar to living beings - involving, as they may, the brain and nerves, the heart, lungs, kidneys and spleen, all working cooperatively - that I have suggested a special designation for these states, homeostasis. The word

does not imply something set and immobile, a stagnation. It means a condition - a condition which may vary, but which is relatively constant.” (Canon)

Dr. Cannon also coined the phrase “*flight or fight*” in 1915 to describe the hyper-arousal or acute stress response. Dr. Cannon was an American physiologist as well as a professor and chairman of the Department of Physiology at Harvard Medical School in the early 1900’s. A physiologist by training, he became interested in the physical stress reactions of the animals in the laboratory. While studying their digestion, Dr. Cannon noticed physical changes in stomach function during what he called “*flight or fight*.” He went on to study physiological reactions to stress throughout the human body.

Homeostasis is a term Dr. Cannon created from two ancient Greek terms: ὁμοιος (hómoios) meaning “similar”, “at the same time” or “notwithstanding, yet still”) + στάσις (stasis, meaning “state”, “condition” or “position”), hence a steady state that, while subject to change, returns to the original state. An example of homeostasis is thermoregulation. The way the human body maintains a normal temperature range between 98-100 degrees Fahrenheit (37-37.8 degrees Celsius), the standard 98.6 degrees Fahrenheit body temperature, is considered homeostasis, a stable condition for the body.

Another example of homeostasis is the interaction between the sympathetic (“flight or fight”) and the parasympathetic (“rest, recover and digest”) nervous systems. Something triggers an involuntary flight or fight response (sympathetic). When the sensed or perceived threat to well being is no longer present the involuntary “*flight or fight*” activity shifts to “*rest, recover and digest*” (parasympathetic) which is considered homeostasis, a stable condition for the body.

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Dr. George Billman

As Dr. George Billman expressed it, *“Our awareness of homeostasis has slowly emerged over the centuries and has become the central organizing tenet of physiology. If one does not understand this self-regulating process, then it is not possible to comprehend fully the function of the body in health and in disease.”* (Homeostasis: The Under-appreciated and Far Too Often Ignored Central Organizing Principle of Physiology, Department of Physiology and Cell Biology, The Ohio State University, Columbus, OH, United States, *Frontiers in Physiology*, 10 March 2020)

Interoception

Interoception is one of our human senses. When human senses are mentioned, most people will think of 5 (seeing, hearing, tasting, touching and smelling). Aristotle wrote of these five human senses in his work, *De Anima*, Book II (ch. 7-11) and insisted that there were only five human senses. We have been thinking of those five ever since. Depending on how a human sense is defined but consistent with the way we would define those five human senses we actually have 21. For example, humans can sense temperature, pain, gravity, the position of the body in time and space, hormones and other chemicals, movement, emotions in ourselves and others, magnetism and radiation to name a few. Our capacity to sense radiation allows us to be aware of color and the emotions associated with color. I like to think of one particular sense as the one that connects us to all the rest, interoception. Interoception is our awareness of what is occurring in our

bodies. If someone were to ask you, “How do you feel?” the reason you can answer is your sense of interoception.

As stated earlier, interoception is the awareness of somatic activity. As Dr. A D (Bud) Craig wrote, *“Converging evidence indicates that primates have a distinct cortical image of homeostatic afferent activity that reflects all aspects of the physiological condition of all tissues of the body. This interoceptive system, associated with autonomic motor control, is distinct from the exteroceptive system (cutaneous mechanoreception and proprioception) that guides somatic motor activity. The primary interoceptive representation in the dorsal posterior insula engenders distinct highly resolved feelings from the body that include pain, temperature, itch, sensual touch, muscular and visceral sensations, vasomotor activity, hunger, thirst, and ‘air hunger’. In humans, a meta representation of the primary interoceptive activity is engendered in the right anterior insula, which seems to provide the basis for the subjective image of the material self as a feeling (sentient) entity, that is, emotional awareness.”* (Interoception: the sense of the physiological condition of the body, *Current Opinion in Neurobiology* 2003, 13:500–505)

What I have discovered is that interoception in combination with activation of homeostasis in the enteric nervous system is what allows homeostasis to move from process to state. Interoception makes it possible to observe the homeostatic activity that is initiated during AHA in the enteric nervous system. The enteric nervous system is the third part of the Autonomic Nervous System, along with the Sympathetic and Parasympathetic. I like to describe the Enteric as *“survive and thrive.”* Maintaining the interoceptive focus allows the involuntary activity of homeostasis to continue to the state of homeostasis. When the interoceptive focus is discontinued the involuntary activity tends to stop.