NeuroAttention (НейроВнимание)

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NeuroAttention (НейроВнимание): A Practical Method for Training Attention as a Tool for Self-Regulation, Development, and Human Evolution

A description of a practical attention-training method based on contemporary findings in neuroscience and psychophysiology.

Introduction

In today's world, attention is one of the most overloaded and scarce resources. Streams of information, social media, constant task switching, and chronic stress all contribute to fatigue, anxiety, loss of energy, inability to concentrate, and the feeling that life is slipping out of control.

Research over the past decades shows that attention is a central brain function integrating cognitive, emotional, and bodily processes (Posner & Petersen, 1990; Petersen & Posner, 2012). It determines what we notice, what we remember, what decisions we make, and how we cope with stress.

NeuroAttention is a practical method aimed at training attention as a key brain function. It was developed to give individuals direct access to this fundamental mechanism. Based on neuroscience and psychophysiology, NeuroAttention combines brain and body exercises to restore nervous system balance, enhance cognitive functions, and improve overall quality of life, offering people a way to regain control over their mental, emotional, and physical resources.

Why Attention Matters

Within the NeuroAttention framework, attention is viewed as a trainable neurofunctional capacity. Attention cannot be reduced to "concentration" alone. It is the system through

which the brain regulates:

- perception (what we notice and what we ignore);
- memory (what consolidates into experience and how we learn);
- emotional regulation (how intensely we react to stress);
- effectiveness (how productive we are in action);
- decision-making (the quality and speed of our choices).

In this way, attention governs our entire lived experience.

When attention is scattered or untrained, all of these domains suffer. When it is trained, a person gains an internal instrument that transforms not only thinking, but bodily states, perception of the world, and the ability to direct one's life.

How NeuroAttention Works

The method is grounded in the principle of neuroplasticity — the brain's capacity to form new neural connections and strengthen existing ones (Draganski et al., 2004; Merzenich et al., 2013). Through specially designed, simple, structured exercises that directly influence brain and nervous system functions, NeuroAttention develops several key skills:

1. **Focus and sustained attention** — the ability to maintain stable concentration on a chosen object (a body area, sensation, or task), reducing distractibility.
2. **Flexibility and attentional shifting** — the ability to rapidly redirect attention from one object to another, manage the vector of perception, and adapt to change.
3. **Multiple attention distribution** — the capacity to hold two or more points of attention simultaneously, enhancing working memory and cognitive integration.
4. **Multidimensional perception** — the transition from flat (2D) perception of the body (e.g., skin surface) to volumetric (3D) perception (organs, cavities, systems), expanding the interoceptive map.
5. **Integration of interoception and proprioception** — combining awareness of internal processes (breathing, cardiovascular activity, organs) with awareness of body position and movement in space.
6. **Recognition and differentiation of sensations** — the ability to distinguish types of sensations (skin, muscles, organs, breathing, heart, etc.) and verbally articulate them, increasing precision of self-understanding.

7. **Self-regulation through attention** — the capacity to consciously alter physiological states (reduce stress, relax muscles, regulate breathing and heart rhythm) through directed attention supported by complementary techniques (breathing, movement, sound).

These skills span three interconnected domains: formal cognitive attention functions (focus, shifting, and distribution), bodily and spatial perception, and self-awareness with self-regulation.

Thus, NeuroAttention constitutes a multimodal training method that simultaneously develops cognitive, sensorimotor, and regulatory capacities.

A key feature of the method is that attention itself is the primary instrument. All additional elements — breathing, movement, sound, micromotor work — serve to deepen and expand training, but the foundation remains the work with focus, distribution, and quality of attention.

Modern neuroscience conceptualizes attention as a function supported by integration of multiple neural systems: orienting, executive, and alerting networks (Posner & Petersen, 1990; Petersen & Posner, 2012). Each is activated through specific types of exercises, and NeuroAttention is structured to stimulate them in an integrated manner.

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1. Focus and Sustained Attention

The ability to maintain stable concentration on a chosen object — a body area, sensation, or task — forms the foundation of attentional training, reducing distractibility and strengthening sustained focus.

This skill engages the dorsolateral prefrontal cortex and anterior cingulate cortex, responsible for sustained concentration and control of distracting stimuli (MacDonald et al., 2000). Research shows that even short-term attention training can improve concentration and reduce mental fatigue (Tang et al., 2007).

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2. Attentional Shifting and Multiple Points of Attention

Next, attention is trained through tasks involving shifting between body regions and distributing attention across multiple points (for example, simultaneously tracking specific breathing rhythms and body movements).

This develops cognitive flexibility and working memory supported by frontoparietal networks (Miller & Cohen, 2001). Such exercises also strengthen interhemispheric connectivity via the corpus callosum, as demonstrated in coordination training studies

(Schlaug et al., 2005).

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3. From 2D to 3D Perception

A distinctive element of the method is the shift from “flat” body perception (surface of the skin or isolated organs) to perception of volumetric structures — internal cavities, muscle masses, organ systems.

This expands the interoceptive map formed in the insular cortex and cingulate cortex (Craig, 2002). As a result, self-perception becomes more precise, and bodily signals are more effectively integrated into conscious experience.

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4. Integration of Interoception and Proprioception

The next stage integrates the internal (interoceptive) body map with the proprioceptive map (awareness of position and movement in space and time). This activates the sensorimotor cortex, cerebellum, and premotor areas, strengthening the connection between body and consciousness. Such integration has been described as central to forming a stable “sense of embodied self” (Tsakiris, 2017).

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5. Recognition and Differentiation of Sensations

A critical component is shifting attention from thoughts and imagery to conscious recognition of bodily sensations. Individuals learn to distinguish signals from skin, muscles, organs, respiratory and cardiovascular systems. This process develops metacognitive awareness and reduces limbic system reactivity (Hölzel et al., 2011). Moreover, verbal articulation of sensations helps integrate bodily experience into the cognitive domain, enhancing self-reflection and emotional regulation.

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6. Self-Regulation Through Attention

After developing sensory recognition skills, individuals learn to regulate physiological states. Example: directing attention to the cardiovascular system and breathing can consciously lower heart rate and shift the body into a calm state. Another example: identifying localized muscle tension and gradually releasing it through attention and movement. Research confirms that such practices can improve heart rate variability, reduce anxiety levels, and enhance stress resilience (Porges, 2007; Farb et al., 2013).

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7. Additional Modules

Layered onto the core attentional framework are tools that amplify its effects:

- **Breathing practices** (regulation of the autonomic nervous system);
- **Movement, coordination, and micromotor work** (engaging underused muscle groups — tongue, eyes, toes, shoulder girdle, deep abdominal and stabilizing muscles; improving interhemispheric coordination, reducing tension, enhancing visuomotor connections, developing working memory and concentration);
- **Sound production** (activating respiratory and vibratory channels of self-regulation).

Each of these additional tools activates supplementary neural networks and enhances neuroplastic changes.

Outcome

NeuroAttention integrates fundamental attention mechanisms with bodily and sensory practices. The result is a more detailed and coherent map of body and consciousness, strengthening connections between the prefrontal cortex, limbic system, and sensorimotor regions. A person shifts from living “in thoughts” to living “in sensations,” gaining a practical instrument for self-regulation and development.

Core Practical Effects of NeuroAttention

(Key challenges the method addresses)

1. Cognitive-Emotional Effects

1.1. Reduction of Stress and Anxiety Practices of sustaining and shifting attention help normalize the functioning of the sympathetic and parasympathetic nervous systems. This reduces cortisol levels and increases heart rate variability, which is associated with greater stress resilience (Tang et al., 2007; Porges, 2007). As a result, a person becomes less reactive and more resistant to external pressures.

1.2. Restoration of Energy Optimizing the distribution of attention reduces “leakage” of resources into chaotic reactions and internal noise. This leads to an increase in subjective energy levels and the capacity for sustained mental and physical activity (Baumeister et al., 2007).

1.3. Improvement of Productivity and Cognitive Functions Attention training strengthens

working memory, reaction speed, and accuracy of information processing (Miller & Cohen, 2001). These cognitive effects directly translate into improved productivity in education, professional activity, and daily life.

1.4. Emotional Self-Regulation The skill of early recognition of sensations allows one to "catch" an emotion before it escalates into a reaction. This reduces impulsivity and improves the ability to make deliberate decisions (Hölzel et al., 2011).

1.5. Restoration of Internal Control Through training of the prefrontal cortex, a person begins to experience themselves as the author of their actions rather than a "hostage of circumstances." A sense of internal control and manageability of life emerges.

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2. Personal and Existential Effects

2.1. Work with Addictions Addictions are often associated with weakened prefrontal cortex function and hyperactivity of reward systems. NeuroAttention strengthens regulatory mechanisms, allowing individuals to recognize the moment of choice and reduce cravings for impulsive actions (Garland et al., 2014). This applies to both chemical addictions and digital or emotional dependencies. Many practitioners report that habits and addictions diminish naturally as a side effect of strengthening attention.

2.2. Personality Transformation and Trauma Work Many personality patterns are encoded in the limbic system as automatic responses to traumatic experience. NeuroAttention shifts activity toward cortical regions, facilitating trauma processing and the formation of new behavioral patterns (Van der Kolk, 2014). This accelerates psychotherapeutic processes and contributes to the emergence of a renewed sense of self.

2.3. Formation of a Stable "Core Self" Experience (Sense of Self) Shifting the focus of attention from thoughts to sensations strengthens the basic sense of "I am." According to Damasio (1999), this "core self" experience is the foundation of identity. NeuroAttention reduces internal fragmentation and enhances the feeling of wholeness and presence.

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3. Bodily and Clinical Effects

3.1. Brain Health and Prevention of Neurodegeneration Regular cognitive training can slow cognitive decline and reduce the risk of dementia (Ball et al., 2002; Ngandu et al., 2015). NeuroAttention exercises support neuroplasticity, improving quality of life in Parkinson's disease, dementia, and polyneuropathy.

3.2. Work with ADHD and Attention Disorders In adults, ADHD is often associated with reduced prefrontal cortex activity and difficulty sustaining attention. Training through

NeuroAttention supports restoration of these functions, reducing impulsivity and improving concentration (Arnsten & Rubia, 2012). Additionally, adult ADHD is often misdiagnosed — underlying it may be chronic stress and weakened frontal lobe functioning. NeuroAttention helps to:

- strengthen prefrontal cortex function;
- restore the ability to sustain attention;
- reduce impulsivity and chaotic thinking.

3.3. Reduction of Psychosomatic Manifestations Development of interoception and proprioception helps individuals more accurately detect bodily signals and regulate them. This reduces the risk of chronic muscle tension, pain syndromes, and psychosomatic symptoms (Craig, 2002; Farb et al., 2013).

3.4. Self-Regulation of Physiological States The skill of managing attention in combination with breathing and movement allows reduction of heart rate, release of muscular tension, and shifting the organism into a balanced state. This effect is associated with activation of polyvagal regulation (Porges, 2007).

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4. Social and Interpersonal Effects

4.1. Effectiveness and Quality of Life Individuals who master attention become more productive, disciplined, and engaged. This manifests in sports, business, creativity, and daily life, enhancing overall quality of life.

4.2. Child Development The formation of attentional skills in childhood is a foundation for the future. Research shows that the development of executive functions in childhood is directly linked to success in adulthood (Diamond & Lee, 2011). NeuroAttention enables children to learn faster and better manage emotions and stress.

4.3. Increased Empathy and Emotional Sensitivity The development of interoceptive awareness is associated with increased empathy (Critchley et al., 2004). NeuroAttention enhances the ability to notice and understand the states of others, improving the quality of communication and interpersonal relationships.

4.4. Development of Linguistic and Cognitive Articulation of Experience The practice of verbalizing sensations develops emotional vocabulary and cognitive articulation. This improves self-reflection and communication skills, making NeuroAttention an important tool both in therapy and in interpersonal relationships.

4.5. NeuroAttention and Psychotherapy The method can be used as a standalone practice, as a complementary tool in psychotherapy, and as support during medical

interventions. It is especially valuable when combined with trauma and addiction therapy, accelerating the integration of experience. Thus, the method becomes a catalyst for psychological work, allowing a person to adapt and transform more rapidly.

Who Can Benefit from NeuroAttention

1. For Individual Practice and Daily Life

- Individuals experiencing chronic stress, anxiety, or emotional instability.
- Individuals experiencing emotional and physical burnout.
- Students and learners — to enhance concentration, speed, and depth of learning.
- Athletes — to develop coordination, resilience, and rapid recovery capacity.
- Business professionals, executives, and high-demand specialists — for productivity, clarity of thinking, and decision-making.
- Creative professionals (musicians, artists, writers) — to expand perceptual range and creative flow.
- Parents and children — to develop psychological resilience, concentration, and self-regulation skills from an early age.

2. For Professionals Working with People

- Psychotherapists and psychologists — as a complementary tool in working with trauma, addictions, and emotional regulation.
- Coaches and trainers — to enhance concentration, discipline, and awareness.
- Educators and teachers — to integrate attention and self-regulation development methods into the educational process.
- Sports coaches — to support mental resilience and improve motor coordination.
- HR specialists and corporate psychologists — for burnout prevention and increased employee effectiveness.

3. For Clinical and Institutional Application

- Rehabilitation centers — as part of recovery programs after injuries, strokes, and surgeries.
- Neurorehabilitation — for restoring cognitive functions and motor skills.

- Work with neurodegenerative diseases — in dementia, Parkinson's disease, and polyneuropathy — to improve quality of life and preserve cognitive resources.
- Addiction programs — in clinics and centers as a method for strengthening control and reducing impulsivity.
- Psychiatry and psychosomatics — as a complementary practice in anxiety, depressive, and psychosomatic disorders.

4. For the Evolutionary Development of Society and Humanity

NeuroAttention extends beyond individual and clinical benefit and may be considered an instrument of collective human evolution:

- **Formation of a new type of society:** development of attention and self-regulation leads to greater resilience, empathy, and capacity for cooperation, creating a foundation for more mature social structures.
- **Enhancement of generational cognitive and emotional potential:** integrating attentional practices into education enables the formation of generations with higher levels of concentration, self-understanding, and responsibility.
- **Prevention of global mental health crises:** under conditions of information overload and accelerating change, the method may serve as a response to the epidemic of anxiety, burnout, and addiction.
- **Evolutionary resilience of humanity:** attention as a "central regulatory process" helps harmonize relationships between internal human processes, society, and the planetary environment.
- **Support of global systems:** governments and supranational structures may utilize the development of attention as a strategic tool for improving the cognitive and emotional health of populations, influencing economics, ecology, and security.

Conclusion

NeuroAttention represents a methodology grounded in contemporary neuroscience and psychophysiology. At its core lies systematic training of attention as the central mechanism linking cognitive processes, emotional states, and bodily functions.

NeuroAttention practice demonstrates a broad spectrum of effects: from stress reduction and increased productivity to support in addiction, trauma, neurodegenerative disorders, and attention deficit syndrome. The methodology also strengthens embodied self-

awareness, fosters empathy, supports the development of a more stable identity, and improves the quality of interpersonal interactions.

Thus, NeuroAttention can be considered a universal tool applicable both in everyday life for optimizing cognitive and emotional resources and in clinical and psychotherapeutic contexts. Its uniqueness lies in the integration of attentional training with bodily maps and sensory systems, enabling not only restoration of nervous system balance but also the formation of new patterns of perception and behavior.

Despite its significant practical potential, further research is necessary to more precisely evaluate the long-term effects of the method, its impact on neuroplasticity, and its integration into existing therapeutic approaches. However, it can already be stated that NeuroAttention opens a promising direction in the development of self-regulation methods, psychotherapy, and cognitive training.

> *Attention is the remote control of our life. NeuroAttention is the method that teaches how to use it consciously.*

About the Author

Nick Ivanov (Ник Иванов) is the creator of the NeuroAttention method and founder of the DOM project, a researcher in the fields of attention, self-regulation, and human potential development.

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