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Eliminating Rogue Visual System Dominance to Restore Multisensory Integration and Normalize Perception during NeuroPhysics Treatment of Complex Psychophysical Disorders

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ABSTRACT

The visual system is widely recognized as the dominant sensory modality in humans, significantly influencing perception and behavioral responses to the environment. This can give rise to the phenomenon known as visual dominance or visual capture, which occurs when visual information overrides inputs from other senses, shaping our overall sensory experience, perception and motor responses to all environmental stimuli [1,2]. Several decades of clinical practice in a NeuroPhysics Treatment environment has demonstrated that "rogue" visual system dominance, along with long-term posture neglect, has been a feature of all patients who presented with complex psychophysical and mental diseases and disorders. On the basis of this observation, a strategy was developed to appropriately calibrate visual, auditory and somatosensory systems to measurable environmental stimuli as a priority to significantly assist in the alleviation of often long-term debilitating symptoms patients presented with, regardless of genetic inheritance if applicable, and then to assist the patient to become more robust in these domains and less impervious to environmental perturbation. This paper discusses these strategies, the observations on which they are based, and the structures hypothesized to explain their efficacy.

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Introduction

Previously published research has shown that NPT patients who presented with advanced genetic diseases (namely, HSP and FSHD) measurably restored long-term lost functions during 4 days of intensive NeuroPhysics Treatment (NPT). NPT has also proven to be a highly effective treatment across all complex psychophysical diseases and disorders and lesions to the central nervous system [3,4]. Recent studies validate NPT's efficacy using multifractal analysis of surface electromyography (sEMG) signals, demonstrating that NPT promotes significant phase transitions within the central nervous system [5]. The multifractal analysis reveals that during NPT, patients experience continuous and differential rearrangements in muscle dynamics, indicating that NPT fosters self-organized criticality a hallmark of chaotic systems capable of adaptive healing. This aligns with chaos theory principles, where complex systems exhibit sensitivity to initial conditions and transition to new states of equilibrium when perturbed. NPT introduces controlled perturbations that prompt the central nervous system to escape pathological "rogue psychophysical attractors," thereby restoring normal functionality. The documented transitions in multifractal indices, such as the Hurst exponent, suggest that NPT induces more coherent sensory motor responses across select sensitive muscle pools or groups, moving from erratic, anti-persistent signals to more organized patterns. The analysis of time-series data from multiple muscle groups, including the trapezius, abdominals, and adductors, further confirms that NPT facilitates a systems-wide recalibration of neural pathways, which is crucial for patients suffering from conditions previously deemed untreatable.

One of the foundational pillars of NeuroPhysics Therapy (NPT) is to treat the person, not just the disorder. Predominantly, most medical and therapeutic interventions (both conventional and alternative) are focused on the treatment of the patient's or client's symptoms relative to their psychophysical disease or disorder. In contrast, NPT seeks to treat the person, not just the disorder, which involves a more holistic approach. This approach is driven by strong empirical evidence demonstrating that a patient's beliefs and subjective perception of their environment significantly influence how they respond to sensory experiences whether positive, negative, or neutral (Ware 24).

Previous publications on NPT have provided overviews of its standard methods and underlying rationale [3,4]. This manuscript builds upon those foundations, offering a more in-depth exploration of the critical role the visual system plays in maintaining all aspects of our psychophysical (physical, emotional, and mental) functioning again, whether favorable or unfavorable. To illustrate these principles, this paper will present studies of cases of particularly compelling interest to orthoptists and neuro-optometrists, highlighting the essential role of calibrating the visual system. This calibration ensures the integration of enhanced somatosensory, auditory, and emotional responses to the environment, even under challenging conditions such as lesions to the central nervous system.

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Research Ethics

To protect patient confidentiality, this manuscript refers to patients by their initials only. This method aligns with ethical guidelines for maintaining anonymity while discussing case studies. All cases discussed were documented with informed consent for the use of their data in scientific publications, and testimonials have been anonymized where necessary. Written approvals have been received from patients to use their cases for contributions to scientific presentations at science conferences and publications.

The Visual System's Role in Maintaining Psychophysical Patterns: Implications for Environmental Navigation and the Emergence of Rogue Psychophysical Disorders

When a patient's medical history is unknown to the NPT practitioner and they present without noticeable physical disabilities or movement disorders, the primary objective is to identify subtle indicators of psychophysical disease or disorder. This is achieved through simple, fundamental movement-based tasks, which provide critical insights into the patient's sensory-motor integration and psychophysical state. The practitioner then compares their observations and conclusions to the patient's actual medical records to validate findings.

These scenarios serve as robust methods for assessing the reliability of fundamental measurements and identifying consistent patterns of error in the patient's ability to initiate and execute the required tasks. Such errors often reveal underlying psychophysical conditions and the presence of sensory-perceptual dysfunctions as a consequence of "visual aversive learning," which is known to compromise sensory discrimination and can lead into "overgeneralization" and "over-respondence" from modulation of perceptual thresholds via aversive learning [6,7].

Visual aversive learning has been shown to deteriorate discrimination abilities for visual and auditory stimuli associated with aversive images [7]. This effect is attributed to increased neural activations in regions such as the anterior cingulate cortex, insula, and amygdala during aversive learning, which modulate early perceptual properties and contribute to abnormal responses that underlie anxiety states [7]. These findings suggest that aversive learning can influence perception via a central mechanism, independent of input modality, and may play a role in the development of anxiety disorders [8]. A key aim is to establish a tamper-proof, objective framework for evaluating the patient's psychophysical system. This framework must reliably detect sensory-perceptual errors that facilitate errors in sensory-motor responses and demonstrate their direct connection to the psychophysical conditions for which the patient is seeking NPT. By uncovering these relationships, the practitioner can guide targeted interventions to recalibrate the patient's system and foster recovery.

NeuroPhysics Treatments Initial Goals and Objectives

Lateralization of the Hemispheres of the Brain

Fundamental Assessment Task 1

During childhood development, it is common to observe children sitting on the edge of benches, spontaneously performing a butterfly movement (adduction and abduction of the legs). This occurs in anticipation of events, feelings of happiness and energy, or, alternatively, shyness or nervousness in social settings. This movement is intrinsic to all developing children. Healthy adults may also perform this movement spontaneously during relaxed moments or in response to feelings of nervousness, or even when subconsciously or consciously experiencing a need to urinate or defecate. It is hypothesized here that the brain self-generates such movements to maintain lateralization and synchronicity between the hemispheres. In children, these movements are seamless and non-iterative between phases of bringing the knees together and moving them apart.

Testing for Hypervigilance

The adductor and abductor muscles of the thighs, adjacent to the groin, are the primary areas of interest in this assessment. The groin region is highly sensitive to perturbation or sudden invasion, making it an ideal region to assess responses to fundamental movement patterns. By evaluating the patient's sensitivity to afferent stimulation, we can identify any sensory overgeneralizations and over-responsiveness to their environmental experiences, which reflect their system's default mode of reacting to all environmental stimuli all of the time. In this assessment, the patient is asked to sit on the edge of a narrow bench with back support, close their eyes, and relax, legs apart and feet turned outwards in the same direction as their thighs. This places the person in a vulnerable position. A spontaneous response to anxiety is to adduct the knees close together in a protective posture. The patient is instructed to try to disregard the practitioner's presence and cognitively eliminate any attention to the practitioner, who the patient is informed will be moving their open legs inward and outward in a butterfly pattern at what is considered the normal speed for a child performing this movement.

By doing so, the practitioner is sending an equal signal up to the brain. It is crucial that the patient keeps their eyes closed throughout the process to eliminate any influence from the visual system. This cognitive process of "letting go" serves as preparation for the broader NeuroPhysics Treatment process, where patients learn to allow their system to self-regulate and "do the talking." By sending equal signals to both hemispheres during the movement, the practitioner gathers feedback on hemispheric relationships and identifies disparities. This provides valuable insights into the patient's psychophysical state, highlighting the influence of visual system dominance and multisensory integration in maintaining or disrupting these fundamental patterns [1,2,9].

Patients with psychophysical diseases or disorders often exhibit varying degrees of hypervigilance during this assessment. As the practitioner moves the legs, encouraging relaxation, inconsistencies often emerge between the left and right legs' responses to the stimulus. These disparities reflect differences in the information flow to and from the hemispheres of the brain. Interestingly, when given the opportunity, patients often perform these movements more effectively with their eyes open than closed. This observation highlights a disparity between the visual system's role in compensating for motor

patterns and the patient's awareness of their body when visual input is removed. Such disparities further underscore the dominance of the visual system in maintaining psychophysical patterns, which may obscure or disrupt proper multisensory integration [1,2,9].

Patients presenting with pathological psychophysical conditions will inevitably struggle to perform this fundamental movement fluently by themselves when asked to do so while sitting on the edge of a narrow bench with their eyes closed. Their leg movements are frequently observed to be clunky, iterative, and marked by random fluctuations, deviating from the smooth, natural pattern expected in a healthy system. Despite instructions to remain composed, relaxed, and to avoid overthinking the movement aiming for a childlike state of spontaneity the patients' ongoing attempts to perform the movement commonly become increasingly cumbersome the more they consciously think about their performance. This highlights an important observation: overthinking tasks under any circumstances interferes with the ability to execute them effectively. It is hypothesized here that the brain prioritizes the tone or volume of the person's thoughts over the facilitation of the required task, leading to impaired execution. Essentially, while the patient attempts to send a signal to their legs to perform the movement, there is an excess of competing information or mental noise. In other words, the signal-to-noise ratio is high and inconsistent. This mental noise, often coupled with a chronically over-engaged sympathetic nervous system, compromises normal sensory-motor processing, resulting in these irregularities. For example, when asked to hold one leg still while abducting and adducting the opposite leg, many patients demonstrate differences in the responses of each leg. This further confirms the presence of hemisphere dominance, whether right or left, and reflects the uneven coordination between the hemispheres. The abductor and adductor pathways provide highly complex, three-dimensional antigravity stability, which is distinct from the forward and backward locomotion primarily managed by the quadriceps and hamstrings. Classical ballerinas, for example, perform pliés to stimulate and strengthen these regions of the body. Coordinated arm movements are incorporated into these exercises, driven by early intuitions at the origins of ballet that these regions play a crucial role in maintaining balance, stability, and poise. Due to the critical role of the adductor and abductor pathways in providing navigational stability, any disparity between the legs can significantly impact a patient's ability to move with consistency and confidence. For instance, each time the patient places their left foot on the ground while walking, it sends different sensory information to the brain compared to when they place their right foot down, eliciting random motor responses. This inconsistency in sensory input disrupts the brain's ability to reliably interpret the environment, fostering a state of hypervigilance. The system, unable to trust the incoming information, remains in a heightened state of alertness, further perpetuating uncertainty and instability.

Chaos and Complexity

Living systems are inherently complex adaptive systems. These systems are highly sensitive to both internal and external initial conditions, where even small influences can lead to significant outcomes a concept popularly illustrated in the idea of The Butterfly Effect, from chaos theory. Human beings, however, exhibit an extraordinary degree of sensitivity to initial conditions due to their advanced perception and emotional interpretation of their environment. This suggests that a patient's psychophysical system's restraints magnify the underlying kinetic dynamics of the system. These dynamics form the initial conditions that give rise to the macro-psychophysical state of the patients discussed here, following the same principles that govern all complex adaptive systems, whether living or nonliving. In the case of the NPT patients under discussion, an undesirable portion of their macro-psychophysical state manifests as symptoms. These symptoms are not isolated; they are emergent phenomena arising from the system's underlying initial conditions.

NPT accordingly focuses on its interventions at this level, in order to effect change at the level at which the symptoms emerge. The beauty and elegance of this approach lies in the ability to alter these initial conditions in a prescribed and deliberate manner. By modulating the system's initial conditions, more desirable patterns of psychophysical behavior can emerge. Metaphorically, this process is akin to making a subtle adjustment to the algorithm of a cellular automaton, resulting in a transformation of the system's structure and function.

This fundamental task serves to identify key sets of initial conditions that are intricately connected to the patient's current pathological state, and upon which the maintenance and development of the patient's pathological state are sensitively dependent. Through persevering with the fundamental movement and achieving a sense of symmetrical "sameness" between the independent movements of the left and right legs, the patient demonstrates evidence of neural up-organization within their brain–body system, to achieve enhanced complexity of the neurological brain/body system. This up-organization signifies that the pathological condition has been destabilized and new and more beneficial sets of initial conditions have been established, allowing the system to support the emergence of more stable and desirable patterns of behavior.

The process of eliminating the visual system during the practice and perfection of this fundamental movement allows the patient to become cognitively attuned to their psychophysical systems. This includes heightened awareness of somatosensory information from their body and their emotional responses to this information. Through this process, the patient effectively calibrates and normalizes their system's responses to mental and environmental cues, thereby improving their relationship with their environment. Prior to the NPT intervention, the visual system will have played a role in maintaining rogue behavioral patterns. Once the patient demonstrates the ability to perform the fundamental movement seamlessly, they are encouraged to stand upright with good posture, slowly open their eyes, and take note of any increased visual clarity. Patients are then guided to visually scan their environment, deliberately identifying fine details in the upper and lower fields of vision and enhancing their peripheral awareness. This step then

calibrates the visual system to the improved psychophysical integration they have achieved during the treatment process.

Fundamental Assessment Task 2

Proprioception

Proprioception informs us of where our bodies are in space-time and in relation to the objects around us. It is fundamental to our survival. However, proprioception is nested within an individual's overall perceptual landscape, influencing how they interpret their reality. Consequently, errors in standard proprioception tests often reflect broader perceptual inaccuracies, including a lack of acuity in the individual's relationship with their environment.

It is important to note that these errors are not deliberate. While the patient may see and hear things as they are, sensory perception errors can occur during the processing of this information in their psychophysical system. These errors often arise from competing internal factors, such as excessive internal dialogue, chronic background muscle tone due to prolonged sympathetic nervous system activation, and hypervigilance. This heightened state compromises their skills and safe navigation of their environment, leaving their system in a constant mode of hyper-protection, which can also produce hyperactivity in their immune response. Patients typically perform proprioception tests better after having lateralized the hemispheres of the brain through the earlier fundamental "butterfly legs" (adduction and abduction) movement task, and vice versa.

Proprioception Test Procedure

The first test involves the patient sitting or standing with their eyes closed, arms extended at shoulder height and abducted 60–90 cm apart. They are instructed to point their index fingers toward each other and adduct their arms inward at a super-slow pace, aiming for the index fingers to meet. The patient does this twice, the first time with eyes open, the second time with eyes closed. This serves to establish a measurement of any pertinent discrepancy between eyes open (with visual system dependence) and eyes closed [6]. It is noted that the large population of patients can perform this task effectively with eyes open. On the patient's first eyes-closed attempt, the NPT practitioner will often observe significant errors. Commonly, these errors are less pronounced in the first attempt but worsen on the second. Typical issues include arms moving along different trajectories, with one arm moving more slowly or stopping prematurely, causing the torso to twist away from the center line. These observations indicate a hemisphere bias or dominance.

Once these rogue initial conditions are noted and understood as interconnected with the patient's broader psychophysical state, the practitioner guides the patient through a recalibration exercise. The patient is instructed to press their two index fingers together while holding their arms extended in front of them and to focus on that contact point with their eyes closed. They are asked to imagine that they are physically and emotionally calibrating their system around this point. This abstract mental focus imbues the exercise with meaning and intention. By focusing deeply on the contact point, the patient establishes a stable reference between the sensory-motor regions of the hemispheres. This connection facilitates cross-communication between the hemispheres. The patient maintains this focus for approximately 10 seconds, then slowly abducts their arms 60–90 cm apart again. They are instructed to very slowly adduct their arms back toward the original point, maintaining mental focus on its location.

This simple yet profound procedure reduces the degrees of freedom initially observed in the patient's movement. The system, which initially exhibited numerous possible states and trajectories, is now "neuronally pruned" toward a more reliable and accurate trajectory. This process provides evidence of neural up-organization, with neurons firing and interacting in novel ways that establish more beneficial relationships within the brain–body system. These changes create new initial conditions, fostering more desirable patterns of behavior and functionality. Fundamentally, the system cannot sustain the same rogue psychophysical conditions because the initial conditions have been altered. Moreover, visual system dominance has been replaced with a more desirable integration of the patient's sensory experience of the world, given that the visual system was playing a major role in the maintenance of rogue patterns of behavior and decision making.

This transformation is grounded in simple principles of math and physics. The system's sensitive dependence on initial conditions determines the emergence of all patterns of behaviors and psychophysical structure and functionality. The rogue structure underpinning the pre-existing psychophysical conditions that the patient presented with are disrupted by the modulation of the system's sets of initial conditions, which in turn give rise to more desirable and mathematically measurable patterns of behavior, as verified in previous NPT-related publications [3-5,10]. This underscores the power of targeted interventions to drive long-term improvement in psychophysical integration.

Proprioception Test – Component Two: Depth Perception

The second component of the proprioception test requires the patient to extend their arms in front of them with their index fingers touching. The patient is then instructed to touch their nose with one finger and return it to meet the opposite finger, before doing the same with the other finger. The practitioner observes the trajectories of each arm during this task. For example, one arm may follow a more circular, indirect path, while the other takes a more direct route. This component often reveals the highest degree of proprioceptive errors, as some patients display difficulty locating their nose, requiring encouragement to find it before returning to the other finger. Similarly, errors occur when patients struggle to locate the opposite finger, highlighting deficits in their depth perception.

Addressing Errors and Encouraging Progress

Once these rogue initial conditions have been observed and noted as interconnected with the patient's existing psychophysical state, the practitioner encourages the patient to focus more deeply and correct the errors. While complete

correction during the assessment phase is unlikely, significant improvements are often observed. These improvements provide further evidence of neural reorganization, with neurons firing and forming relationships differently than before. New initial conditions are established, supporting the emergence of more functional and beneficial behavioral patterns. Patients are encouraged to practice all fundamental movements once or twice daily to reinforce these changes. This ongoing practice helps establish and maintain proprioceptive acuity, translating into a more realistic and psychophysically calibrated relationship with their environment.

Observations of Rapid Eye Movement (REM) During Proprioception Testing

Patients presenting with complex psychophysical and mental disorders frequently exhibit rapid eye movement (REM) during proprioception testing. As patients slowly adduct their extended arms across their bodies, REM may emerge unexpectedly. During REM, the brain's executive regions are offline, which explains why people cannot consciously influence their dreams. REM reflects the imagery and emotions of the dreaming state. When REM occurs during conscious proprioceptive tasks that require executive function, it indicates underlying mental noise and internal dialogue, often unnoticed by the patient, but influencing their behavior and decision making. REM during proprioception testing is most commonly observed in patients with post-traumatic stress disorder (PTSD), further substantiating this hypothesized connection to unresolved psychophysical conditions.

In response to such an event, NPT practitioners calmly point out the occurrence of REM to the patient, asking if they are aware of it. Most patients are unaware until it is mentioned. The practitioner then explains that their REM under these conditions is indicative of underlying mental noise and internal dialogue, and is linked to rogue sets of initial conditions contributing to their present psychophysical state. To address this, the practitioner advises the patient to avoid over-focusing on the REM and instead calmly concentrate on relaxing their eyes. This executive command often dissipates the mental noise and internal dialogue associated with the REM, helping to establish new, stable initial conditions.

Fundamental Assessment 3: The Patient's Relationship with the Vertical Constant of Gravity

The relationship between the patient and gravity the only true constant in nature is foundational to their perception of and interaction with their environment. This relationship represents one of the most vital sets of initial conditions, to which all complex adaptive systems, including the human psychophysical system, are extremely sensitive to and sensitively dependent upon. As Roger Sperry put it, "Better than 90 percent of the energy output of the brain is used in relating the physical body in its gravitational field." In the natural world, every organism has evolved a physical structure optimized for performance and functionality in response to gravity. For human beings, good posture is critical for optimal psychophysical performance. Any deviation from robust antigravity posture results in a measurable decline in performance and compromises the individual's perception of and relationship with their environment.

Observations spanning several decades of patients presenting with complex psychophysical conditions and mental disorders have consistently revealed a common factor: significant long-term posture neglect. This neglect manifests as physical, emotional, and perceptual challenges, underscoring the critical link between posture and overall psychophysical health. Humans' unique emotional complexity introduces an additional layer to this relationship, insofar as the emotional regions of the brain directly influence posture. For instance, individuals experiencing depression often exhibit compromised posture during peak depressive episodes. This compromised posture aligns with their emotional state and affects the functionality of the visual system, which plays a dominant role in maintaining navigational and functional skills. As discussed previously, the visual system reinforces the skills associated with the individual's psychophysical condition, whether favorable or unfavorable.

In the context of NeuroPhysics Treatment (NPT), the vertical constant of gravity is therefore the benchmark for examining the human nervous system's relationship with the external and internal environments. This relationship influences physical structure, posture, complex navigational skills, mental state, and emotional integrity essentially, the entire psychophysical system. Observations of patients undergoing NPT for complex chronic neurological crises such as HSP, motor neuron disease, and Parkinsons disease, often coupled with other psychophysical conditions, reveal patterns of significant posture neglect. These findings align with the hypothesis that deviations from optimal posture are interrelated with reduced physical and emotional performance. NPT has consistently demonstrated extraordinary effectiveness in addressing these conditions and restoring lost functions within remarkably short time frames. Central to its success is the precise calibration of the patient's psychophysical system to the vertical constant of gravity. By systematically calibrating this critical relationship, NPT enables the emergence of more desirable psychophysical patterns, improving functionality, perception, and overall well-being.

Fundamental Assessment 3 Procedure: Standing Upright to Standing on One Leg at a Time

Assessment Stage 1: Eyes Open

As previously established, an individual's relationship with gravity is critical to their overall psychophysical integrity. Errors detected during this assessment carry significant implications for the system's welfare, as they reflect the underlying sets of initial conditions that have given rise to the patient's current state. Improvements in the patient's ability to perform this skill represent transformational shifts in these initial conditions, fostering the emergence of more optimal patterns of psychophysical behavior.

In this assessment, the patient is positioned near stable supports to ensure safety, allowing them to grab hold if necessary. They are instructed to remain as relaxed as possible

and, without overthinking the task, to lift one leg to hip height, slightly turned away from their body's midline, and hold it in position. The efficiency of this skill is assessed over a duration of approximately 5 to 10 seconds. For patients with the conditions discussed, the first attempt is often cumbersome, marked by instability and difficulty maintaining balance. The patient is encouraged to make one or two additional attempts to observe whether improvements occur. The process is then repeated with the opposite leg, enabling both the practitioner and the patient to identify potential asymmetries in performance between the two sides of the body. It is common to observe notable differences in the skill and stability of one side compared to the other.

When a patient struggle to maintain the raised leg position, allowing the leg to repeatedly drop back to the ground, it cannot be assumed that the fault inheres solely in the supporting leg. This behavior may instead indicate that the hemisphere associated with the raised leg is dominant and seeking control. Efficient execution of this task requires cooperative engagement between both hemispheres, emphasizing the importance of hemispheric balance. When a patient demonstrates improved proficiency in this skill, it signifies a "central experience," indicating the redevelopment of a crucial relationship with gravity. This renewed alignment with the vertical constant is essential for achieving optimal health and well-being.

Assessment Stage 2: Eyes Closed

After the patient has completed two to three attempts of lifting each leg with their eyes open, they are then instructed to close their eyes, relax, and repeat the procedure. Ideally, there should be minimal difference in performance between eyes-open and eyes-closed conditions. However, this transition often introduces a significant decline in their ability to perform the task, highlighting the visual system's dominance in sensory integration. It is hypothesized that the pervasive use of technology across all levels of society contributes to this discrepancy. Prolonged engagement with visual inputs, especially in a foveal manner (focused central vision), can lead to the visual system overshadowing somatosensory information from the body and other sensory modalities.

This dominance may also affect the limbic system, which plays a crucial role in the emotional elaboration of sensory experiences. A substantial portion of neurons in the association cortices are multimodal, capable of processing various sensory inputs. However, chronic hyper-engagement with visual stimuli can cause these neurons to become predominantly responsive to visual information, to the detriment of the overall sensory system [11]. Notably, there is a decline in peripheral awareness among individuals, attributed to the visual system's sustained foveal engagement. Neurons that should be attuned to peripheral, upper, and lower visual fields may instead become dedicated to processing central visual input. Research indicates that eye closure can enhance somatosensory perception by reducing visual dominance, thereby improving tactile discrimination [12]. This suggests that the brain can shift processing modes to prioritize somatosensory information when visual input is minimized [12]. Additionally, studies have shown that balance performance can be influenced by the availability of visual information [10,13,14]. Training with eyes closed may enhance reliance on somatosensory and vestibular inputs, potentially improving balance control. Within an NPT environment, balance is considered to be a scale-free phenomenon that is represented throughout all of the psychophysical features of the system and all of the systems subsystems such as the immune system. (The concept of a scale-free phenomenon is discussed in further detail later in this paper).

These findings underscore the importance of a balanced integration of sensory modalities for optimal psychophysical function. The observed decline in task performance with eyes closed underscores the visual system's dominance in sensory integration. This dominance, potentially exacerbated by modern technology use, can compromise the integration of other sensory modalities, affecting overall psychophysical function. Addressing this imbalance through targeted interventions may enhance sensory integration and improve functional performance.

Calibration to the Vertical Constant of Gravity and Energy Conservation

As previously discussed, all living and nonliving systems in nature are calibrated to the vertical constant of gravity. In humans, structures within the brain, such as the cerebellum and basal ganglia, play essential roles in aligning the system with this constant. The human system has an intrinsic awareness of and an innate desire to achieve this calibration. A critical factor supporting this process is the application of the laws of energy conservation. These laws dictate that energy must be conserved. For example, a pendulum, once set in motion, will gradually lose energy until it reaches its lowest energy state its point of rest within the system it is nested in. This principle provides a useful framework for patients to understand and embrace their system's natural tendency to seek a state of balance and efficiency.

When patients relax and allow their system to calibrate to the vertical constant without interference or attempts to control the process while having the freedom to stabilize themselves as needed their system naturally transitions through various conformational states. Eventually, it achieves its lowest energy point, which corresponds to optimal functionality. It is energetically costly for the system to remain in a state of wobble or instability. Conversely, the system conserves energy when it operates efficiently. Furthermore, maintaining a protective, inhibited state expends more energy than allowing the system to dissipate sensory input through appropriate motor output.

Successfully performing this skill signifies that significant rogue initial conditions have been modified, leading to systemic improvements. Symptoms associated with the patient's presenting conditions, which were dependent on these rogue initial conditions, can no longer persist in the same manner. The emergence of new initial conditions gives rise to more functional and beneficial patterns of behavior.

Transition to Visual Calibration

Once patients can perform the fundamental assessment skill with relative stability standing on each leg, one leg at a time with minimal disparity between eyes-open and eyes-closed conditions, they are encouraged to transition to calibrating their visual system. This begins with slowly and deliberately opening their eyes wide while remaining stable. Patients are guided to appreciate any sense of enhanced visual clarity as they scan their environment with intention. They are encouraged to focus on rich and varied environmental features such as the shapes and colors of leaves, natural textures, movement, nearby elements, distant objects, and the upper and lower fields of vision. By placing value and meaning on this process, the patient stimulates a larger number of photoreceptors, thereby increasing the complexity of their visual system.

This increase in visual complexity has cascading effects throughout the psychophysical system. Living systems, being scale free in nature, experience functional phenomena at one scale that simultaneously influence all other scales of the system. This is because such systems, like scale-free networks, exhibit a power-law distribution of cluster sizes, where a few large hubs dominate the network while many smaller clusters remain connected. The scale invariance in these systems allows clusters at one level to form 'superclusters' at higher levels, creating a nested, hierarchical structure in which the same fundamental properties emerge across multiple spatial and functional scales [15]. This principle is also captured in the concept of fractal organization, which plays a significant role in complexity theory [16]. By engaging with the richness of their environment and fostering complexity in their visual system, the patient promotes improved functionality and integration across their entire psychophysical system.

On many occasions, prospective patients inquire whether NPT is suitable for addressing their complex and long-term conditions. During a 60-minute initial consultation, the practitioner also evaluates whether the patient is an appropriate fit for NPT. Regardless of the complexity or chronic nature of the patient's symptoms, every patient experiences some degree of symptom relief simply by engaging in the fundamental assessment processes outlined above. This immediate improvement consistently motivates patients to proceed with intensive NPT sessions two hours per day for four consecutive days. In some extraordinary cases, patients who upon arrival required physical support to walk have left their consultations walking unaided. These outcomes highlight the profound impact of addressing rogue initial conditions and recalibrating the visual system. (Links to compelling testimonials, and a video demonstrating all three fundamental assessments, are provided in the appendix.)

These assessments are instrumental in establishing enhanced sets of initial conditions, as demonstrated in the cases of facioscapulohumeral muscular dystrophy (FSHD) and hereditary spastic paraplegia (HSP) discussed in Ware [4]. These enhanced initial conditions provided a reliable psychophysical framework for building functional capacity during subsequent NPT sessions. The outcomes have been shown to be transformative, with patients achieving the return of long-lost functions across all cases. Further, such results are not anomalies but consistent across all patients engaging in NPT. The extent of improvement is directly related to their pre-NPT psychophysical condition and the unique enhancements facilitated by NPT's foundational methods. These consistent, reproducible outcomes affirm the robust efficacy of NPT in addressing the underlying mechanisms of complex psychophysical disorders.

Reliably Measuring Sensory-Perceptual Errors in Patients with Psychophysical and Mental Health Disorders

The use of select standardized resistance gym equipment within a controlled clinical setting provides a stable "grid" a frame of reference that facilitates the identification of gross sensory-perceptual errors [3]. Over several years of clinical observation and treatment, a strong correlation has been identified between gross sensory-perceptual errors and the overreactive sympathetic responses of patients with long-term pathological psychophysical and mental health disorders. These responses are often elicited by prescribed, non-hostile, self-initiated unilateral stimuli. The predominant somatosensory experiences of these patients, as they engage with various pieces of unilateral gym equipment in a safe and supportive environment, highlight how they overgeneralize their sensory inputs in a rogue, default manner. This overgeneralization leads to aversive responses even to benign, self-imposed environmental stimuli. For example, some patients who present with extreme visual and auditory aversion wearing dark sunglasses and earmuffs to manage their symptoms demonstrate amplified responses to very light resistance movements on stable gym equipment. These overgeneralized and aversive responses, even in a controlled and safe environment, underscore the pervasive effects of visual aversive learning on sensory discrimination and modulation.

Sensory generalization occurs when a learned response to one stimulus is triggered by stimuli with similar properties. While this is a natural and adaptive phenomenon, in individuals with psychophysical and mental health disorders, sensory generalization often devolves into overgeneralization. This maladaptive behavior exacerbates symptoms, perpetuates anxiety, and undermines effective coping mechanisms [17]. For instance, in anxiety disorders and phobias, heightened responses extend not only to specific feared stimuli but also to similar, non-threatening stimuli. Overgeneralization of sensory experiences is further complicated by sensory modulation disorders, which impair emotional regulation and behavioral responses to sensory input. This is particularly evident in cases of visual and auditory aversion, where patients are unable to filter and process stimuli appropriately, leading to severe discomfort and maladaptive behaviors [18]. The concept of path dependence, in which current behaviors and responses are heavily influenced by past experiences, provides additional context for these maladaptive patterns. Visual aversive learning, a form of maladaptive conditioning, plays a central role in these cases. Patients with extreme visual and auditory aversions often exhibit entrenched patterns of overgeneralization, which significantly compromise sensory discrimination and perpetuate maladaptive psychophysical responses.

NeuroPhysics Treatment (NPT) is uniquely positioned to address these sensory-perceptual errors. By leveraging the stable "grid" provided by resistance gym equipment, NPT facilitates

moment-to-moment measurements and targeted recalibration of psychophysical responses. Through these controlled interventions, patients can reduce overgeneralization, enhance sensory discrimination, and establish more accurate representations of their environment. The process of recalibration relies on the integration of environmental stimuli via the association cortices, which play a pivotal role in sensory processing and behavior generation. In patients with psychophysical disorders, significant sensory-perceptual errors within these cortices lead to misrepresentations of the real-world environment. Correcting these errors through NPT helps patients achieve more functional and adaptive behaviors, improving their overall psychophysical health.

Visual Dominance Highlighted

Before delving into the rationale and methodology behind guiding patients through the grids and instructions provided by the NPT practitioner, it is critical to first highlight the role of visual dominance in sensory integration [13,14]. During initial engagement with resistance exercise machines, patients are asked to perform the required movements on randomly selected pieces of equipment as they move through the structure of their first NPT session, firstly with their eyes open maintaining the required tempo and cognition, and being encouraged to note how the process feels both physically and emotionally. They then perform the movement with their eyes closed. This experience is vastly different and emotionally confronting for them, exposing to them how much the visual experience is overriding their awareness of how their psychophysical systems are really responding to the environment. Patients experience this disparity as heightened awareness of their symptoms and their anxieties.

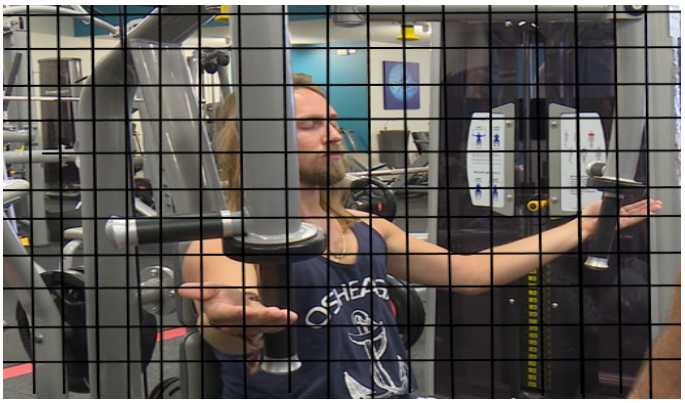
This experiential data provides them with critical evidence to identify the underlying sensory-perceptual errors and root causes contributing to their symptoms. The challenge then is for the patient to learn how to modulate their rogue sensorimotor responses, as they slowly move through the grids that the machines provide, stopping when necessary to regain composure and re-establish the cognitive parameters they have been instructed to maintain. Once they have appropriately calibrated their psychophysical system responses to the measurable environment with their eyes closed, they then set about calibrating their visual system to the updated psychophysical version of themselves.

Noisy Inputs Infer Noisy Outputs

Observations reveal that elevated anxiety levels in patients amplify their symptoms, creating a positive feedback loop: heightened anxiety increases symptoms, and worsening symptoms further escalate anxiety. This loop perpetuates rogue psychophysical conditions, making it difficult for patients to modulate their system effectively. Through the process of NPT, patients learn to modulate their limbic system and its connections, effectively "detraining" rogue perceptual errors. As this process unfolds, patients experience a simultaneous relaxation of symptoms and normalization of cognitive processing. This demonstrates the profound interconnectedness of sensory-perceptual calibration, emotional regulation, and psychophysical function.

An Overview of the Role of the NPT Grids

NPT has proven to be highly effective for patients who are prepared to engage in their own healing through this evolving process. A critical aspect of this success lies in the unique design of the resistance exercise machines. The stable unilateral features of the machines provide a consistent, reliable backdrop a "grid" against which the patient's psychophysical system can be observed, assessed, and evaluated. Each point within this grid represents a specific moment in space-time, where even the smallest fluctuation offers valuable insights into the system's state. The image below illustrates this process, showing a patient engaged with one of these machines, highlighting the interplay between stability, calibration, and psychophysical transformation.



The Lowest Level of Resistance is Used on All of the Machines

A Typical Perceptional Error Relating to Hemisphere Dominance Is Purposely Demonstrated Above

When a patient engages with one of the select pieces of resistance exercise equipment, their psychophysical system does not perceive the activity as traditional exercise. Instead, it interprets the interaction as a sensory experience of the environment. NPT is not referred to as exercise because its focus is on investigating and enhancing information processing and responses to sensory inputs.

As the patient begins, they are instructed to hold the starting position and reflect deeply on how their system perceives the self-applied stimulus as information it is receiving. This moment of stillness encourages the patient to identify regions of excessive tension and attempt to release these tensions. The aim is to experience the movement as a seamless flow of information, rather than the isolation of specific muscle groups. The isolation of stress is the origin of most human beings' diseases and disorders, physically and emotionally. These initial moments often reveal over-responsiveness and sensory generalization, mirroring how the patient's system habitually responds to their environment. Importantly, the psychophysical system does not invent these responses spontaneously due to some form of novel stimuli; rather, it draws on its history of learned patterns to inform its reactions.

This initial measurement sets the foundation for creating ideal sets of initial conditions from which to proceed. As the patient performs the movement, the selected weight moves upward along the vertical guidance bars, with gravitational force gradually increasing as the movement progresses. This force provides an escalating environmental demand against which the patient's responses can be measured. As environmental stress increases relative to the patient's individual thresholds, underlying fears and anxieties often surface. Underlying fears and anxieties often relate to past experiences and associative memories. Some patients may recall vivid past events, while others may spontaneously cry without knowing why. Emotional responses such as anger, sadness, or even jubilation frequently emerge, reflecting the patient's journey toward regaining control over their psychophysical health and well-being. These responses are indicative of sensory generalization errors, where the patient's perceptions are out of sync with the actual safe and supportive environment. Despite having full control, the patient may experience sensations that reflect past fears or anxieties rather than the present ambience.

Patients are instructed to close their eyes and perform the movement as calmly and composedly as possible, focusing on experiencing a flow of information throughout their system. If they lose this sense of flow due to succumbing to fears or anxieties, they are advised to pause, calm themselves, and re-establish the executive command to reinvigorate the flow. Under these conditions, the gravitational force acting on the selected resistance becomes useful information that the psychophysical system can convert into meaningful data, enhancing its qualities and functions.

Energy and information are intricately linked. According to the law of conservation of energy, energy cannot be created or destroyed but can change from one form to another. In this context, gravitational energy is transformed into useful energy and information by the system.

Metaphors are often employed to help patients visualize the concept of flow. For instance, when an elite tennis player serves the ball, it's the coordinated energy from their entire body that propels the ball not just their arm and shoulder. Similarly, observing an elite sprinter in slow motion reveals that their jaws are relaxed, and there is a harmonious flow across all moving parts of their body; they remain very relaxed and composed. If they become anxious and tense in an attempt to outperform an opponent, it would immediately detract from their performance. Athletes often report that their best performances occur when they are relaxed and composed, a state commonly referred to as being "in the zone" or experiencing "flow" [19]. This state of flow is characterized by complete immersion in the activity, leading to optimal performance. Achieving flow requires a balance between skill level and challenge, along with a focused mindset. Techniques such as mindfulness and relaxation can aid in attaining this state, allowing athletes to perform at their peak (Wilson Meloncelli, n.d.).

Throughout the process, the patient is guided to maintain a sense of working within a structured and organized grid, where every point in space-time and every fluctuation matters. They are encouraged to reflect on the relationship between their hands and feet and to cognitively visualize an abstract symmetrical structure, referred to as the "four points of distribution." These points are defined by the hands gripping the handles of the machine and the gaited foot position on the floor, which remains consistent across all movements. This mental framework strengthens the patient's connection to their system's internal organization and its relationship with the environment, while simultaneously enhancing sensory-motor integration. A helpful metaphor for patients is to imagine a rectangular sporting field. Within the field, anything can happen that contributes to the outcome of the game, but nothing of significance occurs outside its boundaries. Similarly, the grid creates a defined space where the system's activities can be observed, calibrated, and measured, fostering a sense of structure and enabling meaningful psychophysical outcomes. Once rogue responses to environmental stimuli are identified on each piece of resistance equipment, the focus shifts to repetitive correction. Patients repeatedly move through these trajectories, working to correct sensory-perceptual errors. The goal is to achieve unrestricted dissipation of the applied resistance throughout their system, enabling more efficient and functional psychophysical responses. The initial rogue responses were, of course, interconnected with the features of the patient's symptoms, particularly the dominance of their visual system in overriding sensory experiences. By systematically addressing and correcting these errors, patients modify their initial conditions in a more dynamic and integrated manner compared to the earlier fundamental assessments.

Over the course of NeuroPhysics Treatment (NPT), patients engage in a series of 18 resistance machine exercises. Each machine elicits distinct psychophysical responses and uncovers varying histories within the patient's system that influence their current responses to their environment. Each machine serves as a platform to develop stable reference points, leading to a state known as multistability, in which the system achieves

the ability to maintain multiple stable activity patterns. This process fosters the development of psychophysical stable reference points on each machine, leading to the ability of neural circuits to support multiple stable activity patterns, which is crucial for cognitive flexibility and adaptability [20]. This state is critical for resilience and adaptability in the face of environmental demands.

Patients also often demonstrate compartmentalized responses reflective of how they manage stress and stimuli in daily life. For example, during the vertical pulldown exercise, where patients sit upright and pull the machine's handles down toward their body during the concentric phase, many can keep their trapezius muscles relaxed, indicating controlled sympathetic responses. At the end of the concentric phase, they are instructed to hold the position, visualize the experience as one of strength and self-dominance, and maintain this psychophysical integrity as they return the handles to the starting position during the eccentric phase. However, during the eccentric phase, where gravitational stress decreases, patients often exhibit increased tension in the trapezius muscles a counterintuitive response that reveals underlying sympathetic nervous system activation. This suggests that while patients can manage stress under certain conditions in their real world, they nevertheless struggle to release it, likely tied to associative memories and learned responses. This is an example of aversive learning, whereby negative experiences condition defensive responses that persist even in safe contexts [7,21]. Conversely, in a corresponding linear trajectory exercise targeting the same muscle groups, patients may tense up their trapeziuses during the concentric phase of the movement. This indicates that the sympathetic nervous system has been activated due to the self-applied stress to their psychophysical system being deemed a threat. However, patients tend to demonstrate better control over their sympathetic nervous system during the eccentric phase. This discrepancy highlights opposing ways of managing stress under seemingly similar conditions, reflecting the system's compartmentalized behavior to real-world experiences.

The goal is to eliminate these disparities across all exercises. Through repeated practice, patients refine their psychophysical responses until they exhibit stability across all phases of movement, regardless of the machine or trajectory. Ideally, an observer remotely monitoring activity in the patient's trapezius muscles would be unable to discern whether the patient is on any particular machine or whether they are performing a concentric or eccentric phase. This uniformity indicates that the patient has pruned rogue psychophysicresponses and achieved stable sensory integration. Once patients achieve clarity of movement with their eyes closed, they are encouraged to open their eyes slowly and employ strategies from earlier fundamental assessments. This involves attentively scanning their environment, appreciating the rich details of their surroundings, and calibrating their visual system to their newly acquired psychophysical state. This step ensures alignment between their sensory inputs and the enhanced stability they have developed, further reinforcing the multistability state across their entire system. The patient's visual system then assists in the maintenance of their newly acquired psychophysical structure and functionality.

Achieving a state of multistability allows patients to navigate their real-world environments with greater physical and emotional resilience [20]. While NeuroPhysics Treatment cannot erase past memories, it enables patients to prevent these memories from interfering with present functionality. By calibrating their psychophysical responses, patients become more robust, less perturbed by real-world stimuli, and better equipped to manage stress.

Bipedal Acuity – Central Pattern Generators

Human locomotion, encompassing activities such as walking, running, and jumping, relies on the harmonious interplay between the upper and lower limbs. This coordination is orchestrated by neural networks known as central pattern generators (CPGs), which produce rhythmic movement patterns essential for safe and efficient navigation through our environment. In individuals presenting with complex psychophysical and movement disorders, this intrinsic bipedal synchronization is often disrupted. Such patients may exhibit slow, unsteady gait patterns, compromised posture, and a noticeable absence of natural arm swing. Typically, during functional bipedal movement, when the left leg advances, the right arm swings forward while the left arm moves backward, and vice versa. This reciprocal motion is fundamental to maintaining balance and propulsion.

Restoring and calibrating the function of CPGs is a pivotal component of the NeuroPhysics Treatment (NPT) recovery process. An uncalibrated locomotor system can exacerbate anxiety, stemming from uncertainties in movement and navigation. The structured process of the patient working through the grids described above mitigates psychophysical noise, which interferes with both physical and emotional functionalities. The focus then shifts to recalibrating bipedal movements. Two previously practiced grid work movements serve as foundational elements in this recalibration:

1. **Independent Limb Engagement**: Utilizing the same resistance machines described earlier, patients perform movements with their eyes open, deliberately moving the machine's arms independently. As they extend one arm, or pull in towards their body, dependent upon which machine it is and what movement it affords, they direct their gaze to the contralateral foot, consciously channeling neural signals to establish a robust hand-foot connection. Success in this exercise is indicated by spontaneous movements in the targeted foot, such as toe curling or shifting, signifying enhanced neural connectivity.
2. **Bipedal Coordination Practice**: After reinforcing hand-foot neural pathways, patients practice walking slowly, concentrating on the contralateral coordination of arm and leg movements. This deliberate practice gradually evolves into a natural running pattern, reinstating synchronized bipedal motion.

This calibration of the CPG is particularly important for individuals with movement disorders. By achieving stability through the structured process of the patient working through the grids described above and refining bipedal coordination, patients regain confidence in their navigational abilities. An effective strategy involves emphasizing hand control, as the feet

often mirror the hands' actions. Introducing a light broomstick held horizontally can further enhance this coordination. The broomstick acts as a tangible link between the hemispheres, promoting bilateral integration and facilitating symmetrical movement patterns.

Case Studies of Enhanced Calibration of the Visual System in Two Recent (2024) NeuroPhysics Treatment Patients

This manuscript highlights two recent NeuroPhysics Treatment (NPT) patients who presented with long-term complex psychophysical conditions, including long Covid, chronic fatigue syndrome (CFS), post-exertional malaise (PEM), and heightened sensitivity to light and sound. Notably, their original health questionnaires did not indicate pre-existing visual system dysfunctions. Upon further evaluation, it was revealed that both patients had been enduring significant visual impairments. Patient V had suffered from convergence weakness, resulting in double vision for 10 years, while Patient A had for over two years been managing a divergence condition that severely impaired her ability to maintain foveal focus.

Patient V was under the care and supervision of her Netherlands-based orthoptist, while Patient A was being treated by her Netherlands-based neuro-optometrist. Both patients underwent intensive NPT during the same period in late 2024. Upon returning to the Netherlands, Patient V attended a pre-scheduled three-month follow-up with her orthoptist. The following is the professional report provided by her orthoptist, submitted for inclusion in this manuscript as supportive evidence of the therapeutic impact of NPT on visual system calibration.

Patient V Orthoptist Professional Report
Provided by: Emma Van der Wee, Orthoptist and Optometrist at Xpert Clinics Hilversum.

Dear Colleague,
The above-mentioned patient visited Xpert Clinics Eye Care for an ophthalmological
examination/treatment. Our findings were as follows:

13-08-2024
Reason for visit: Upon optician's advice regarding fixation disparity, advised prisms.

Orthoptic history: Double vision near since approximately 10 years, mainly with fatigue. Headache complaints with glasses. First pair of glasses after measurement at St. Antonius, 6–10 years ago, this went well. Later a new pair of glasses was purchased with the same prescription, but it was uncomfortable. Another measurement was taken in between, but the same prescription was found. Now, three pairs of glasses with the same prescription, but all feel very different. Far vision is fine, patient can see best at a distance without glasses, but often keeps wearing the glasses.

Ocular history: 2022-07 Hypermetropia
Family history: -
Binocular vision:
Stereopsis: ec TNO positive up to 60"

Prism fusion 30cm:
hor |2| 16^ BN to 18^ BT |2|

Ocular alignment and motility:
CT 30 cm: ec small exophoria no height, rapid recovery
CT 6 m: ec straight
PCT 30 cm: ec 4^ XF
Motility: good
Convergence: ec 14 cm double vision subjective with RAF
Accommodation: ec OD and OS 7 dpt (age-appropriate) ODS 10 dpt (age
appropriate)

Eye measurements/visual acuity:
VOD ec 1.5 - VOS ec 1.5
OD S -0.50 C -0.25 x 12
OS S +0.25 C -0.50 x 172

Cycloplegia 1%:
OD S +2.00 C -0.25 x 175
OS S +2.00 C -0.25 x 172

Subjective in cycloplegia:
S +1.75 VOD cc 1.5
S +2.00 C -0.50 x 180 VOS cc 1.5

Conclusion/Diagnosis:
Small exophoria with convergence weakness (due to ME)
Good vision in ODS
Latent hypermetropia in ODS

Plan:
Start convergence exercises 3-4 times per day (pen to nose or dotted line)
Tomorrow 15:20 re-refraction without cycloplegia

14-08-2024
Reason for visit: Re-refraction cycloplegia
Ocular history: 2024 Small exophoria with convergence weakness (due to ME)
2022 Latent hypermetropia ODS, with glasses

Family history: -
Eye measurement/visual acuity:
S +1.50 VOD cc 1.2
S +1.75 C -0.50 x 175 VOS cc 1.2

Conclusion/Diagnosis:
Small exophoria with convergence weakness (due to ME)
Good vision in ODS
Latent hypermetropia in ODS

Plan:
Glasses advice given:
S +1.50 VOD cc 1.2
S +1.75 C -0.50 x 175 VOS cc 1.2

Remarks:
- Please perform a re-refraction, prescription based on cycloplegia measurement, do not reduce + strength.

- Carefully measure pd and height with the frame in which these lenses will be fitted, patient is very sensitive to this.
- Continue with convergence exercises 3-4 times per day (pen to nose or dotted line).

Follow-up in 3 months
19-11-2024
Reason for visit: Follow-up after 3 months
Orthoptic history: New glasses purchased, they fit well. Good initial exercise.

NPT done in Australia, no complaints since
Ocular history: 2024 Small exophoria with convergence weakness (due to ME) 2022 Latent hypermetropia ODS, with glasses
Family history: -
Binocular vision:
Prism fusion 30cm: ec hor |2| 18^ BN to 40^ BT |2|

Ocular alignment and motility:
CT 30 cm: ec minimal exophoria no height quick recovery
CT 6 m: ec straight
PCT 30 cm: ec 2^ XF
Motility: good
Convergence: ec good to nose
Other tests:

Eye measurement/visual acuity:
VOD ec 1.2 lett
VOS ec 1.5 lett

Conclusion/Diagnosis:
Straight ocular alignment with good binocular vision
Good vision in ODS
Hypermetropia ODS (status after latent, now accustomed)

Improved complaints of convergence weakness due to NPT for ME

Plan:
Glasses remain the same
Follow-up if complaints occur or if the optician has issues with measurements
End

Patient A
Patient A has generously granted permission for her testimonial video to be shared publicly on social media and included in this manuscript. A link to the video is provided in the appendix. Patient A also provided a detailed personal statement regarding the significant improvements she achieved in her debilitated visual system through NPT, complementing her compelling video testimonial. The video includes select footage of Patient A working through the grids, offering valuable context for the reader and demonstrating the practical application of NPT principles. It is highly recommended for viewing.

Patient A Personal Statement
To whom this may concern
Some lines on the visual challenges: A major challenge or symptom of long COVID for me was related to the visual system. All moving images, reading, focusing close by even, were challenging and caused screaming headaches almost immediately and PEM afterwards. In trying to find a cure, I started working with a neuro-optometrist. Tests showed impaired visual functions. My eyes apparently focused slightly outward, which is often seen in persons with burn out for example. This wide focus causes an overactive brain and eye muscles when focusing close by. Also, changing focus between close by and further away was impaired, in the sense that my brain responded slowly to change in focus. This caused an overreaction to moving images, such as movies, but also sitting in moving objects such as a car, even as a passenger or being in a crowded space. Subsequently, I've undergone training for my brain and eyes for some 4 months doing exercises on a daily basis, in order to alleviate some of these symptoms. This training included following moving objects with my eyes, while staying aware of the surroundings; reading out loud with +1 and -1 glasses alternating between sentences; moving through space while reading letters out loud; exercises to calm the nervous system and the like. All exercises were aimed at training brain and eyes to better process information and to work together more efficiently. Just before I departed for my NPT weeks in Australia, I did a final test, which showed some improvements in the previously tested areas. However, the benefit in real life for me was minor and I still struggled with all the symptoms, albeit a little less severely. After and already during the intensive NPT weeks, I experienced a tremendous shift in my visual abilities. After a week, I was able to watch a movie in one go instead of spread out over a few days in 20min slots for example. Also, I could be a car passenger while looking around the surroundings, chatting away, instead of keeping my eyes closed because of the nauseating effects of moving surroundings, which I suffered from before. After a few weeks, I was able to read newspaper articles again and actually comprehend what I was reading. Now, a few months after the intensive therapy weeks, I don't notice any symptoms of visual fatigue other than I think every healthy person would when in need of proper rest.

Conclusion

The success of NPT in treating complex psychophysical diseases and disorders lies fundamentally in its ability to recalibrate the sensory-motor system. This includes addressing visual system dominance, mitigating the effects of aversive learning, and enhancing postural integrity through the systematic application of NPT methodologies and principles. It has been observed that when practitioners and therapists from other modalities have adopted and incorporated NPT's fundamental assessments and focus on improving postural alignment as supplementary practices, their patients often demonstrate measurable improvements in psychophysical well-being. These outcomes frequently exceed the results traditionally expected from their conventional or alternative treatments alone, underscoring the versatility and efficacy of these foundational principles.

For readers who are concerned about their own health or who aspire to maintain optimal psychophysical well-being, practicing the fundamental NPT assessments outlined in this paper alone offers a proactive and effective strategy. Consistently engaging with these assessments helps foster

long-term resilience, improved sensory-motor integration, and enhanced overall functionality.

NPT's methodology and its remarkable outcomes are not only reshaping therapeutic practices but also inspiring new avenues for research and application in psychophysical health. Its unique approach offers both hope and measurable results for those seeking to overcome the challenges of complex psychophysical conditions and achieve a higher quality of life. To explore NPT's groundbreaking approach further, the multi-award-winning documentary *Calibrate*, directed by Academy Award Nominee Steve Pasvolsky, provides an in-depth look into its transformative impact. A link to the film is provided in the appendix. Additional information is also available at https://calibrate.global/.

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Appendix

Calibrate film: https://www.youtube.com/watch?v=Tl78f9DzLYg
Testimonial video: https://vimeo.com/739573951.
Demonstration of NPT techniques: https://vimeo.com/536638033.
Patient A: https://vimeo.com/1043569522/14eaa6db74.