



neurozone®

NEUROZONE® PERSONAL ASSESSMENT

TECHNICAL MANUAL®

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Compiled by:
Dr Etienne van der Walt
Tyler Phillips

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1 ORIENTATION

1.1 INTRODUCTION

Neurozone® is a private company dedicated to researching and applying neuroscience, psychology, systems biology, analytics, and coaching and consulting to enhance human capacities. Neurozone®'s primary focus is the capacity of psychological resilience. Concomitantly, Neurozone®'s approach is holistic, working to demonstrate that enhancing psychological resilience tends to protect people against certain mental and physical health conditions (facilitate disease modification) and tends to unlock or enable people's capacities to perform highly.

A brief History of the Neurozone® Personal Assessment

The Neurozone® Personal Assessment traces its roots back to a prior assessment system that Neurozone® developed and actively utilized from 2014 to 2019. This assessment was named the FourCore Assessment, generating a comprehensive FourCore Report. It meticulously evaluated various granular neurobehaviors, making up 10 drivers, including exercise, nutrition, sleep-wake cycle, silencing the mind, value-tagging, goal-directedness, collective creativity, learning, abstraction, and executive function.

The term "FourCore" originated from the measurement of four core capacities, specifically resilience, self-leadership, innovation, and learning. As time progressed, the system underwent refinement, incorporating extensive data analysis to comprehend the clustering of specific items within the drivers. Our understanding of the significance of resilience deepened, establishing it as the foundational element crucial to everything we do. Resilience emerged as the key to complex adaptation.

Around 2019, armed with the insights gleaned from our evolving comprehension of resilience, we embarked on developing a new system. We recognized the pivotal role of five high-performance domains in resilience building, and these domains became the cornerstone of what we measure and aspire to achieve. The four core capacities seamlessly transitioned into resilience being the primary index, with self-leadership being incorporated into achieving a high yield/energy ratio. Learning and innovation, on the other hand, coalesced into the high-performance innovator domain. Further details about these domains are expounded upon later in this manual.

In addition to this restructuring, we meticulously examined various methods to measure resilience, eventually devising our own resilience index. Tailored for socioeconomically diverse users and particularly attuned to the South African environment, the Neurozone® Resilience Index was established in 2019. From that point onward, we incorporated the 28-item resilience measurement into a self-compiled assessment questionnaire, continuing to evaluate 59 granular neurobehaviors across the five high-performance domains.

This encapsulates the evolution and history of the current Personal Assessment system we employ to gauge psychological resilience, providing a meticulously coded, weighted, and quantified set of neurobehaviors for optimizing our Neurozone® Resilience Index.

Compilers

The individuals at Neurozone® who contributed to the development of this manual are briefly described below:

Dr Etienne van der Walt is a clinical neurologist and the CEO and co-founder of Neurozone®. Etienne uses his deep understanding of the human nervous system to translate this science into accessible means to enhance individual, team, and organizational health and performance. He is a thought leader, masterclass teacher, and keynote speaker.

Tyler Phillips is a research psychologist and the Lead Content Specialist at Neurozone®. He applies his Master's education in psychological research to create qualitative content for Neurozone®'s products and to ensure they are aligned with credible up-to-date science.

1.2 NEUROZONE®'S FRAMEWORK FOR DEVELOPING RESILIENCE

Below is a brief explanation of the theoretical framework of resilience as it is conceptualized, measured, and developed in the Neurozone® system. Following this, a summary of the neuroscience underlying this explanation of resilience is provided. For a deeper dive into the literature and references supporting these explanations, see [Part 4 \(Early and Current Research\)](#) and [Part 5 \(More Resources\)](#) in this manual.

1.2.1 Brief Overview and Key Concepts for Developing Resilience

Resilience broadly refers to the capacity to cope successfully in the face of stressors or adversity. Successful coping entails both the restoration of healthy functioning after encountering stressors (i.e., 'bouncing back') and the resultant enhancement of the resources with which to deal with future stressors (i.e., 'bouncing forward'). Resilience is a complex and multifaceted capacity, informed by myriad neurobiological, psychosocial, and developmental factors. It is also a dynamic capacity, influenced by a variety of shifting internal processes (e.g. states and traits of the brain-body system) and external conditions (e.g. environments and events). A person's level of resilience can therefore increase or decrease over time and circumstance. See [Neurozone® Resilience Index](#) for a more in-depth discussion on how resilience is conceptualised in the Neurozone® system.

A resilient biological system copes with stress successfully, and so is robust against the development or exacerbation of **stress-related physical and mental illnesses**. Supporting this, in 2017, Neurozone® demonstrated that an early form of the Neurozone® Resilience Index correlates significantly and negatively with stable blood levels of cortisol – the major stress hormone. This demonstrated that higher resilience tends to mean lower biological markers of stress. Moreover, in 2022, Neurozone® demonstrated that their peer-reviewed, published version of the Neurozone® Resilience Index also correlates significantly in the negative with established measures of trait anxiety, posttraumatic stress disorder, depression, and sleep disruption. This indicates that higher resilience tends to mean fewer or less severe symptoms of these disorders. Additionally, throughout the literature, resilience has consistently demonstrated a strong negative association with **burnout**. In fact, scholars have actually situated resilience as a protective factor against burnout. Neurozone® repeatedly replicates the association via analyses of scores on the Neurozone® Resilience Index and Neurozone® Burnout Index – a measure that taps into the three key symptoms of burnout (i.e., exhaustion, inefficacy, and cynicism). These statistical analyses confirm that enhancing resilience tends to lower the risk for burnout.

By doing so, enhancing resilience can also increase the likelihood that a person is able to **perform highly in a holistic and sustainable sense**. Theoretically, raising (or unlocking the ability to raise) levels of holistic high performance is synonymous with the concept of thriving, where thriving means the joint experience of development and success. Empirically, in 2022, Neurozone® showed that higher resilience correlates significantly with higher academic success among university students. This is one piece of peer-reviewed evidence that higher resilience is related with a higher performance capacity. See Part 5 (More Resources) for additional independent studies in this regard.

In the empirical literature, there are many **learnable factors** (behaviours, cognitive states and emotional states – which may collectively be called 'neurobehaviors') that have been shown to enhance resilience, thriving (or the capacity for high performance), or both. Theoretical literature postulates yet more learnable factors (neurobehaviors) that may also enhance these capacities. Because the neurobehaviors are learnable (i.e., trainable, cultivable), they represent practical interventions to enhance resilience (and consequently, lower the risk for burnout and unlock the capacity for high performance). These learnable neurobehaviors are defined and operationalized, and their measurable relationships with resilience are explained, in [Neurozone® Battery of Learnable Neurobehaviors](#) and [The Learnable Neurobehaviors](#) respectively.

Additionally, Neurozone® continually analyzes the relationship between employees' scores on the Neurozone® Resilience Index and those on several small scales that Neurozone® developed to assess certain **organizational outcomes**. These outcomes include job performance, job satisfaction, employee engagement, absenteeism, and turnover intentions. Such analyses aim to amass data on, and anchor the association between, resilience and these additional indices of organizational outcomes that support high performance.

In summary, Neurozone® focuses on understanding, measuring and developing the capacity of psychological resilience because:

- it is dynamic (meaning a person's level of resilience can shift up or down over time);
- it has a negative relationship with burnout and common mental health conditions like anxiety, depression, PTSD, and sleep disruption (meaning the higher a person's resilience, the fewer and/or less severe the symptoms of, or the lower the risk for, these conditions);
- it has a positive relationship with thriving, or the capacity to perform highly in a holistic and sustainable way (meaning the higher a person's resilience, the more likely they will be able to thrive in their work and personal lives); and
- it can be enhanced through the cultivation of many learnable behaviours, cognitive states and emotional states.

1.2.2 Neuroscientific Explanation of Resilience in the Brain-Body System

The neurological structures and mechanisms underlying resilience are those involved with the successful regulation of neurophysiological stress responses. In broad brushstrokes, resilience appears to reflect a balance in activity (or optimal relations of activity) between prefrontal cortical structures underlying higher-order, deliberative, reflective functions and subcortical (limbic) and autonomic structures underlying instinctual, spontaneous, reflexive functions.

When encountering a stressor, the limbic/autonomic structures prompt a fast, fight-or-flight (fear) response via the autonomic (sympathetic) nervous system and amygdala, as well as a slower, cortisol-releasing (stress) response via the hypothalamic-pituitary-adrenal (HPA) axis. The prefrontal cortex (PFC) provides top-down regulation of these structures to reduce their over-reactivity. It also facilitates learning related to these stressors so as to optimize responses to them in future. However, when the fear and stress responses are chronically (over)activated, it can lead to cell death in the PFC, compromising its cognitive and affective regulatory functions. Additionally, prolonged stress and fear activation also leads to abnormal cell growth in the amygdala (further heightening fear responses), damage to hippocampal neurons (impairing memory), and the development of physical (e.g., endocrine, immune, cardiovascular) impairments and mental illnesses (e.g., depression, anxiety, posttraumatic stress disorder).

Therefore, when the prefrontal and limbic/autonomic systems are disproportionate in their activity (the latter is overactive and the former is underactive), it decreases resilience and leads to a gradual implosion of the biological system. To prevent overactivation of the limbic/autonomic system, the organism must return to its baseline relaxed physiological state as quickly as possible after its initial perturbation brought on by the appearance of a stressor. Resilience can also reflect that the organism does not too easily get moved out of this baseline state when facing stressors to begin with.

Moreover, the baseline state is not static but is rather a moving target. This is because the external and internal environments of an organism shift over time, and these shifts adjust the parameters by which that organism needs to recalibrate to maintain its homeostasis. Hence, resilience is not a once-off measurement in the Neurozone® system; rather, it requires continual reassessment.

The various learnable factors ('neurobehaviors') are included in the assessment because they have been shown to be capable of strengthening the remain-in/return-to baseline prerequisite for resilient functioning. In fact, many of them appear to optimize the connectivity and relations between the two (prefrontal vs limbic/autonomic) systems, particularly so that the PFC is better at regulating the activity of the amygdala. These neurobehaviors include those that downregulate overactive fear and stress networks and those that upregulate an underactive reward network (boosting positive affect). They also modulate the activity of the default mode network (by reducing rumination that can occur during task-less cognition). The means by which these effects are achieved are diverse; for example, some accomplish them by working on physiological processes (e.g. exercise, sleep), and others entail building/using intrapersonal psychological resources (e.g. gratitude, emotion regulation), and relying on/building interpersonal adhesives (social support and connectedness). The relative impact that any of these neurobehaviors may have on returning a human brain-body system to (or keeping it in) the baseline relaxed physiological state may also vary with time and circumstance. Hence, the Neurozone® system recommends their continual reassessment as well.

Finally, literature indicates that it is not only resilience but also thriving (or 'high performance') that seems to be supported by similar brain-body mechanisms. In particular, thriving is also enabled by decreasing the influence of stressors – or downregulating the fear/stress networks – in tandem with increasing motivating (positive affect) – or upregulating the reward networks. Additionally, increasing

levels of cognitive control (as undergirded by the PFC) is necessary to improve performance on daily tasks and to enable self-perception of a thriving life.

Since these neurobehaviors seem to recruit similar neurological circuits for enhancing both resilience and thriving/high performance, it lends empirical credence to Neurozone®'s maxim that 'everything affects everything'. Because multiple neurobehaviors can each improve the amygdala-PFC relationship in some way, it is as if cultivating one neurobehavior can – resultantly or simultaneously – enhance other neurobehaviors (or bring about their effects) as well. Indeed, the brain's networks do not exist in isolation from each other, and neural activity is influential in many directions.

In summary, the Neurozone® system aims to develop human resilience (and the capacity for thriving or high performance) by optimizing the relationships between the limbic/autonomic system and the prefrontal system. This can be accomplished in many different ways, through the cultivation of various different learnable neurobehaviors. When the relationship between the systems is optimal, adapting to, overcoming, and learning from stressors is easier, requires less effort, and/or is more likely to be successful. It also reduces the likelihood of stressors derailing the adaptability of the human biological system (leading to physical and/or mental disease).

1.3 NEUROZONE® PERSONAL ASSESSMENT STRUCTURE

The Neurozone® Personal Assessment consists of the following components:

- (A) The Neurozone® Resilience Index (a measure of psychological resilience);
- (B) Miniature scales of 59 learnable neurobehaviors that can enhance resilience;
- (C) Shorts scales of 6 organizational outcomes (absenteeism, burnout, employee engagement, job performance, job satisfaction, and turnover intentions).

Component A and component B is explained in the following sections. Regarding component C, these scales are only put to users who indicate that they are employed. Unemployed individuals are not asked about these organizational outcomes.

Importantly, the results of components A and B are reported on in the Neurozone® Personal Report (the outcome of Neurozone® Personal Assessment), but the results of component C are not. Neurozone® includes component C in the assessment for the purpose of ongoing research, in order to use aggregations of that data to improve the predictive value of the Neurozone® Resilience Index for industry-related outcomes.

1.3.1 Neurozone® Resilience Index

The Neurozone® Resilience Index is a peer-reviewed assessment tool that provides an indication of an adult individual's current level of psychological resilience. It is a self-report questionnaire consisting of 28 items, each of which is answered on a 5-point Likert scale from 'strongly disagree' to 'strongly agree'. Some items are reverse-scored, and each item is weighted differently according to its contribution to the global score. Scores on the Neurozone® Resilience Index range from 0 to 100. For more detailed and technical information than what follows, consult the [peer-reviewed paper on the development and validation of the Resilience Index](#).

Conceptualizing Resilience

The Neurozone® Resilience Index can be divided into **3 components**: Positive Affect, Stress Mastery, and Early-Life Stability. Although scores and explanations for each of these components are not provided in the Neurozone® Personal Report, coaches or consultants may nonetheless find it highly useful to understand them and how they affect the Neurozone® Resilience Index.

'Positive Affect' entails positive emotional dispositions and psychosocial traits, and adaptive cognitive-behavioral strategies. These dispositions and traits that a person exhibits consist of optimism, gratitude, forgiveness (as nonetheless wishing well those who may have wronged them), the sense of having a meaningful life, tenacity (as a positive outlook on their ability to cope with setbacks), self-insight (as knowing how and where to allocate their time and energy when completing a task), and trait mindfulness (as trying to remain present/in the moment). The adaptive cognitive-behavioral strategies consist of cognitive reappraisal (as trying to find the positives when something negative happens), active coping (as taking proactive steps when they foresee a challenge or problem), stress inoculation (as knowing they have the skills and experience to overcome a stressor they have overcome before), and mastery

motivation (as gaining confidence when they achieve a goal). It is desirable for resilience that a person has, or cultivates, a good degree of these aspects of Positive Affect.

‘Stress Mastery’ entails some experiences and dispositional factors that influence how overwhelming or manageable stressors feel to a person. The key experiences are those of toxic stress, in which a person underwent significant stress exposure in the past (i.e., experienced several strong stressful periods throughout their life), and experienced stress helplessness (i.e., feelings of having no control) during these times. Dispositional aspects include learned helplessness (in which a person often currently feels they have little or no control over their environment, and that things are out of their hands), and the reverse of trait mindfulness (in which they regularly think and worry about the future, and think about and are preoccupied with the past). These aspects of Stress Mastery are reverse scored, meaning the ability to ‘master stress’ (as a contributor to resilience) is improved when these aspects are pruned or low.

‘Early-Life Stability’ entails how a person perceives their experiences with caregivers in early life (i.e. while growing up until age 18). These experiences include having informational support (someone to look up to, set good examples to follow, and regard as a mentor), physical safety (being protected from harm, having survival necessities like shelter and food), and emotional support (feeling loved, supported, and properly taken care of). It is desirable for resilience that a person perceives that they had a good degree of these aspects while growing up.

Note that improving scores on these components, especially Early-Life Stability, usually involves a **change in perception**. With effective intervention (e.g. cultivation of the neurobehaviors, or psychotherapy), a person’s perception of, for example, their early life can change – if not regarding the nature of its (in)stability, then regarding the degree to which these past experiences influence their present-day feelings, thoughts, and behavior.

Bands of the Neurozone® Resilience Index

Scores on the Neurozone® Resilience Index will fall into one of five bands:

- **‘Peak’** level of resilience: 88–100
- **‘High Moderate’** level of resilience: 74–87
- **‘Moderate’** level of resilience: 61–73
- **‘Low Moderate’** level of resilience: 50–60
- **‘Low’** level of resilience: 0–49

Determining the ranges of each band has entailed rigorous and iterative statistical analyses. Briefly, in the [peer-reviewed paper on its development and validation](#), Neurozone® used the State and Trait Anxiety Inventory (STAI) to create the different bands of the Neurozone® Resilience Index. This is because, of all the psychiatric measures used in that study, the STAI was the strongest predictor of resilience. The STAI has three severity categories. Neurozone® used the well-validated method of [Receiver Operating Characteristic \(ROC\) curve analysis](#) along with the concept of sensitivity and specificity to determine the three different bands. These bands were validated using chi-square analysis, categorizing the symptom burden of other psychiatric symptoms (depression, PTSD, sleep disturbance) in each band (low resilience = highest symptom burden; high resilience = lowest symptom burden). This study therefore first established three bands for the Neurozone® Resilience Index.

In a subsequent study, it was the The Patient Health Questionnaire (PHQ-9), a measure of depression, that was the strongest predictor of resilience. In the interest of providing more nuance for users of the Neurozone® Resilience Index, Neurozone® decided to re-run the ROC curve analysis using the PHQ-9, because it has four severity categories (not just three). A similar process of validating the emergent four bands of resilience using chi-square analysis for the other psychiatric measures (anxiety, sleep disturbance, PTSD) was conducted. To provide even further nuance to the Neurozone® Resilience Index, Neurozone® entered a middle (fifth) category into the model and ran another round of chi-square analysis to situate symptom severity appropriately and reliably across five bands of resilience. With a good fit in the results, this is how Neurozone® arrived at the five bands above.

1.3.2 Neurozone® Battery of Learnable Neurobehaviors

There are 59 neurobehaviours (learnable behaviours, emotional states and/or cognitive states) that are assessed in the Neurozone® Personal Assessment. These neurobehaviors were selected based on (a) previously validated constructs from the Neurozone® Brain Performance Diagnostic (see Part 4: Early and Current Research), (b) their demonstrated and/or theoretical relationship with resilience in the scientific literature, and (c) an expert panel from the fields of neuropsychology, neurology, and psychology. Each neurobehavior (or in psychometric terms, 'construct') was then populated with items (questions) and included in the assessment. All items and constructs included in the assessment were validated by an independent psychometrist.

These constructs/neurobehaviors are theoretically distinct and do not claim to measure the same phenomenon (cf., e.g., Exercise Duration versus Optimism). They are included in the assessment because of their individual relationships with resilience. Each construct, as defined in this manual, can be regarded as a mini-scale/-questionnaire within the broader assessment. This approach to scale development was reviewed and endorsed by an independent statistician.

Overall, the constructs/neurobehaviors have statistically significant relationships with the Neurozone® Resilience Index. This means that, when an individual cultivates more of these neurobehaviors, they tend to enhance their score on the Neurozone® Resilience Index (i.e., increase the level of their psychological resilience).

While all neurobehaviors can impact resilience (scores on the Neurozone® Resilience Index), the influence of some is greater than that of others in any given assessment instance. This is because the Assessment uses Neurozone®'s High Performance Code to rank the relationship between each neurobehavior and the Neurozone® Resilience Index. This ranking is determined by a combination of (1) pre-established weights of each construct's impact on the Neurozone® Resilience Index, and (2) a person's particular answers to the battery of neurobehaviors in the assessment. (Note that as more data is gathered through the assessment, the weightings of each construct's impact on the Neurozone® Resilience Index can change.) These rankings determine a hierarchy of influence among the neurobehaviors for an individual user. They indicate which neurobehaviors, out of them all, should provide the user with the biggest potential boost to their Neurozone® Resilience Index for the least amount of effort required.

There are two sets of rankings: those for commendation (i.e. neurobehaviours an individual already makes good use of and should therefore maintain), and those for recommendation (i.e. neurobehaviors that are under-optimized in an individual and should be cultivated). Importantly, the neurobehaviors identified as commendations are not necessarily those for which a person achieves the highest score on those mini-scales. Similarly, the neurobehaviors identified as recommendations are not necessarily those for which a person achieves the lowest score on those mini-scales. Rather, they are the neurobehaviours a person has and has not maintained well, respectively, that *also* have the highest impact on their Neurozone® Resilience Index according to the Neurozone® High Performance Code. For the neurobehaviors identified as recommendations, the Neurozone® Personal Report provides actionable learnings and activity suggestions for how a person can cultivate more of them.

2 NEUROZONE® PERSONAL ASSESSMENT

2.1 DISCUSSION OF NEUROZONE® PERSONAL ASSESSMENT MODEL

What follows is, firstly, an explanation of how Neurozone® groups certain neurobehaviors together. The five groups into which the neurobehaviours are categorized are called the 'Domains of High Performance'. Secondly, a list of definitions of the assessed 59 learnable neurobehaviors (behaviors, emotional states, and/or cognitive states) that each have a relationship with the Neurozone® Resilience Index is provided. The neurobehaviours are organized in the list according to the Domains under which they fall.

2.1.1 The 'Domains of High Performance'

Neurozone®'s model of the five 'Domains of High Performance' is intended as a parsimonious framework with which an individual can understand how the vast collection of neurobehaviors relate to one another. The Domains are not distinct based on neuropsychological nomenclature or statistical derivation. Rather, the Domains are a simplification of how the neurobehaviors broadly achieve a similar primary effect in the brain-body system, and/or improve a similar primary psychosocial capacity.

In the descriptions of the Domains below, italicized terms in the first paragraph indicate the key concepts/foci in their respective definitions. The second paragraph provides deeper insight into the rationale behind the conceptualization of each Domain.

- The **High Performance Rhythms** Domain consists of neurobehaviors primarily focused on adhering to or optimizing *physiological cycles*. This is usually accomplished through *repetitive practice, observation, and routinization*. These neurobehaviours include those to do with exercise, nutrition, the sleep/wake cycle, and Silencing the Mind (i.e. mindfulness meditation).

The whole brain- body system works rhythmically. Our brain secretes hormones and their precursors in cyclic phases; our brainstem regulates life itself through the rhythms of breathing, heart rate, hunger and thirst, sleep and wake; and even some of our organs operate according to day-night cycles. Observing, optimizing, and cooperating with our brain-body rhythms is therefore not only a natural imperative, but a crucial key to enhancing resilience and unlocking high performance.

- The **High Performance Connectors** Domain consists of neurobehaviors primarily focused on *sociality*, or enhancing personal and professional relationships. They are concerned with optimizing how a person generally relates to, understands, and *connects with others* through interpersonal skills.

Feeling genuinely interconnected is essential for our survival. Being isolated and disconnected from others resembles a mid-brain response very similar to hunger. We also often rely on one another for instrumental, emotional, and material support to accomplish our goals. Hence, we need to nurture interpersonal adhesives like belonging, entrustment, and empathy. Otherwise, we can neither attenuate our stress well enough nor obtain the resources necessary for our resilience and high performance.

- The **High Performance Energy** Domain consists of neurobehaviors primarily focused on optimizing *mental/emotional energy*. This includes cultivating behaviors or emotion-based cognitions that *boost mental positivity*, and pruning behaviors or emotion-based cognitions that promote mental negativity. The ideal result is improving a person's ability to know when, where, and to what extent to direct their mental/emotional energy in adaptive ways.

Energy regulation is a key requirement of our biological brain-body systems. We need to optimally assign our limited amounts of energy to the right tasks. Positive emotional states maximize the amount of energy we can assign to tasks, while negative emotional states block, leak, or deplete our energy reserves, leaving us under-fuelled for goal achievement. We therefore need to cultivate and prune certain mental- emotional conditions to unlock the greatest capacity for optimal energy allocation towards high performance.

- The **High Performance Transformers** Domain consists of neurobehaviours primarily focused on *transforming the way a person thinks* about themselves, others, and the way the world works. They concern the demonstration of trait mindfulness and the cultivation of certain *mindsets* that promote greater individual and collective adaptability.

Transforming mental perspective is an integral link in embodying resilience and high performance. We must ensure that our minds remain in tune with the ever-changing external environment while monitoring our internal needs and staying on course with the goals we have set. Without cultivating this mindful and intentional awareness, we are likely to keep reacting from a default, unconsciously learned position. To perform resiliently and highly, we need to interpret and respond optimally to what is happening around us in every present moment.

- The **High Performance Innovators** Domain consists of neurobehaviors primarily focused on optimizing *problem-solving* behaviors. They are task-focused, aiming to influence the way an individual and their group approaches the work that is in front of them, for the purposes of being more *innovative*.

'High performance' is commonly measured by the degree of innovation in our daily output. The brain is a learning and problem-solving machine, and so its measurable power lies in the extent to which it yields efficient results and fashions novel solutions. Not all learning conditions, problem-solving approaches, and team cultures promote highly innovative results, however. These need to be optimized in order to improve both individual and team resilience and capacities for high performance.

The Domains are not strictly bounded and can be regarded as porous or flexible, in the sense that the primary effect of one Domain can, secondarily, achieve an effect in another Domain. For example, it is known that mood (the purview of Energy) can be improved by regular exercise (use of Rhythms) and by positive social interactions (use of Connectors).

2.1.2 The Learnable Neurobehaviors

The first (italicized) sentence explaining each neurobehavior represents how it is **operationalized** in the Neurozone® Personal Assessment. The paragraph that follows this sentence elaborates on why this neurobehavior is included in the Assessment (i.e. how it affects resilience and/or high performance). For more details on the science behind the inclusion of the neurobehaviors, consult the [Neurozone® Science Library](#) in [Part 5 \(More Resources\)](#).

'High Performance Rhythms' Domain:

- **Alarm Snooze Avoidance** *reflects how often and for how long you snooze your alarm in the mornings.* A prerequisite for an optimized and resilient brain-body system is making sure it is aligned with its natural rhythms. When these rhythms are offset, such as by confusing your 'rest' and 'alert' settings by snoozing your alarm, the mental and physiological processes that take cues from the sleep/wake cycle get disrupted. So, your brain-body system becomes less efficient at allocating the right resources to the right tasks, selecting the right responses in the face of stressors, and adapting to changes. You are therefore likely to have compromised resilience and a dip in your capacity for high performance.
- **Alcohol Moderation** *measures how many alcoholic drinks you tend to consume in a typical week.* Because drinking higher than moderate amounts of alcohol can disrupt your sleep, it can produce a range of negative effects that come from such a disturbance. For example, it can impair your abilities to regulate your emotions, respond rapidly and optimally to your environment, and maintain a high level of cognitive performance. If you drink excessively over a long period of time, these impairments can become more permanent in your brain-body system, and can bring about serious physical health risks such as organ damage. So, not only does lack of alcohol moderation lower your resilience and high performance capacity in the short-term, but it can also deteriorate the well-being of your brain-body system in the long run. Hence, moderating your alcohol intake can set your brain-body system up for greater functioning.
- **Balance and Flexibility Exercises** *refers to whether and for how long you do balance- and flexibility-type exercises (e.g., yoga, Pilates, tai chi) on a weekly basis.* Because of their coupling of mindfulness with bodily awareness, Balance and flexibility exercises move us into a baseline relaxed physiological state. This state is necessary for us to optimally respond to, and recover from, physical, cognitive, and emotional challenges and stressors. In other words,

the baseline relaxed physiological state is essential for resilience and high performance. The other effects of balance and flexibility exercises (e.g., improvements to mood and improved problem-solving capacity) provide further boosts to your high performance capacity as well.

- **Bed Sanctity** *refers to whether you engage in mentally stimulating activities in your bed(room), and whether you do so often or for extended periods of time.* Because low bed sanctity tends to disrupt your quantity and quality of sleep, it can compromise the restoration and maintenance processes that sleep brings to the brain-body system. Disrupted sleep can lower your cognitive functioning and emotion regulation, thereby making your brain-body system more sensitive to the negative effects of encountering challenges, and less efficient at adapting to and overcoming obstacles. These dips in brain-body functioning also tend to weaken your problem-solving abilities and innovation capacities. Through this cascade of effects, low bed sanctity therefore reduces your resilience and high performance capacity.
- **Cardio Exercises** *refers to whether and for how long you do cardiovascular or aerobic exercises on a weekly basis.* By strengthening your physical and emotional health, cardio exercises enhance your ability to withstand physiological and psychological breakdown in the face of adversity, challenges, and setbacks. This is how they enhance your resilience. Moreover, by promoting the energizing and motivating presence of positive emotions, and by strengthening your brain's connections (hence the findings of greater processing speed and attention exhibited by people who make use of them), cardio exercises help set you up to perform highly at your tasks.
- **Deep Breathing** *refers to whether and how often you make use of the meditative practice of deep, slow, diaphragmatic breathing.* Both your capacity for high performance and optimized resilience require that you return to, and operate from, a baseline relaxed physiological state. Deep breathing is a practice that achieves this. It physiologically tones down the features of the fight-or-flight response (e.g. it lowers heart rate and blood pressure), and because it is paired with mindful meditation, it also mentally disengages you from fear- or stress-locked thinking and reacting. Deep breathing therefore relaxes the brain and body as a unitary system, and so sets you up for greater resilience and high performance potential.
- **Dietary Balance** *reflects whether you eat a variety of different foods.* Apart from supplying the brain with continuous energy by eating regularly throughout the day, it is also important to provide your brain with the right balance of nutrients. This is because the right balance of nutrients is essential to ensure healthy cognitive functioning, as well as to maintain physiological equilibrium (or homeostasis) in your brain-body system. Healthy cognitive functioning combined with a healthy brain-body system will contribute significantly to both your mental and physical resilience and high performance capacity.
- **Exercise Diversity** *measures whether you utilize a variety of different physical exercises which have different effects on the brain-body system.* The combined benefits of diverse types of exercise lead, overall, to enhanced physical, cognitive, and emotional functioning. Optimal physical functioning is necessary for our bodies to respond in the most appropriate ways in the face of challenges, and optimal emotional functioning is important for regulating our stress and anxiety when dealing with them. By enhancing these functions, exercise diversity therefore improves your resilience. Since it also leads to improvements in cognitive functioning, Exercise diversity makes us more efficient at problem-solving, and therefore more ready for high performance.
- **Exercise Duration** *refers to whether you do adequate amounts of physical exercise (2.5-5 hours) on a weekly basis.* Because of the positive mood that exercise brings about, and because it helps our brain-body system move into a baseline relaxed physiological state, it sets us up to recover more easily from setbacks. It therefore enhances our resilience. And, since exercise strengthens our brain's connections, and thereby increases our problem-solving efficiency, it sets us up for high performance. While exercise in itself is beneficial, its duration is also an important factor: longer sessions tend to have a bigger and longer-lasting impact.
- **Focused Attention** *refers to whether and how often you engage in the practice of sustaining your conscious attention while doing mindfulness meditation.* Because the focused attention method helps you become better at focusing on the most important things at hand in your daily life, you tend to dwell less on past setbacks or potential future obstacles. It therefore helps to improve your mood, and to return to relaxation after moments of adversity. This is how the focused attention method boosts your resilience. Also, by enhancing your cognitive abilities (such as your sustained attention and memory performance), the focused attention method also helps set you up for high performance.
- **Fruit and Vegetables** *measures how many portions of these kinds of foods you eat daily.* Because a diet high in fruit and vegetables tends to protect you against developing chronic diseases, it boosts your physical resilience. It also boosts your cognitive and emotional resilience by improving your memory performance, mood, and sense of self-efficacy. These

improvements, in turn, add an extra layer of increased resilience, since higher levels of optimism and confidence in our abilities tend to enable us to conquer challenges and recover from setbacks more easily. Also, beyond improvements to memory, having an optimized, energized, and well-fuelled brain-body system overall – thanks to frequent fruit and vegetable consumption – sets you up for high performance.

- **High-Intensity Interval Training** *refers to whether and for how long you do HIIT (i.e., short bursts of intense anaerobic exercise split up by very brief rest periods) on a weekly basis.* Because it can promote returning to the baseline relaxed physiological state after training, and because it exerts and strengthens your heart in the absence of threats, HIIT improves your ability to cope with stressors and challenges. Effectively, it empowers a brain-body buffer against chronic stress. In this way, HIIT therefore enhances your resilience. Providing additional boosts to your mood, memory performance, and processing speed means that HIIT also increases your high performance readiness.
- **Intermittent Fasting** *refers to abstaining from eating (or ingesting calories) for periods longer than the usual one that happens while you sleep.* Intermittent fasting triggers a 'switch' in the body: instead of looking to recently eaten food for fuel, it looks to storage of fuel held in cells. From an evolutionary perspective, this switch tells the body that its resources are low, and so it prompts both brain and body cells to act more adaptively. When fasting, the cells exhibit greater resistance to damage or stress. Then, when recovering from a fast while eating, the cells direct energy towards strengthening their structures and being more plastic (or flexible) in their functions. So, on a cellular level, intermittent fasting prompts us to be more resilient and adaptive, thereby setting us up for high performance.
- **Mobility and Movement** *refers to whether and how much you are generally physically mobile throughout the day.* Our bodies have been designed to be frequently moving about in space, and so when we do this, various benefits emerge. Moving around promotes growth hormones in the brain, which boosts our problem-solving ability. It also protects against various physical conditions (e.g., high cholesterol, blood pressure, and insulin resistance), and it can improve our mood. Because of the physical benefits of mobility and movement, our bodies become more resilient to some health risks. Additionally, because it can improve our mood and problem-solving abilities, mobility and movement helps us become mentally resilient in the face of challenges. Overall, then, it improves our well-being and sets us up to perform more highly.
- **Nature Time** *reflects how much time you spend in natural surroundings per week.* There are many physical and mental benefits associated with spending time in nature (e.g. improvements to heart and lung function, immunity, blood pressure, mood, and mindfulness). These benefits reflect nature time moving the brain-body system into a baseline relaxed physiological state. Entering and remaining in this state is partly due to the positive emotions you experience while spending time in nature, coupled with the ability to constructively reflect on life's problems. All of this equips you to deal optimally with challenges and stressors, which also increases your ability to deal with future challenges that may come your way.
- **Screen Time** *reflects how much time (outside of work) you spend on digital screens.* Because excessive screen time often disrupts your sleep-wake cycle, it also dysregulates a variety of brain-body processes that take their cues from the sleep-wake cycle. For example, light exposure tells your brain-body system how alert it should be, so if the exposure is higher than normal, your brain-body system spends longer than it should in an activated mode, as opposed to a restorative one during sleep. Not enough restoration means a lower capacity to be resilient in the face of challenges and to perform at your highest. Thus, keeping your screen time limited will achieve the opposite, aligning your system's sleep-wake cycle and readying it for optimal resilience and high performance.
- **Silencing the Mind Duration** *refers to whether you practice mindfulness meditation for adequate amounts of time (10-20 minutes per session).* By putting you into the baseline relaxed physiological state, silencing the mind enables you to select the most appropriate and effective response to a stressor or challenge, and to bounce back quickly from adversity. Hence, it boosts your resilience. Moreover, by freeing up your conscious mind for sophisticated, higher-order thinking (as opposed to it being caught in lower-level, survival-based thinking), silencing the mind sharpens your problem-solving and innovation capacities. It therefore also readies you for high performance.
- **Silencing the Mind Routine** *refers to whether you practice mindfulness meditation on a regular basis.* Silencing the mind assists in moving your brain-body system out of the fight-or-flight response and the chronic stress condition, and instead into the baseline relaxed physiological state. This state is imperative for optimal resilience, since while in it you are not overwhelmed by fear, panic, or stress. You are therefore enabled to better confront, adapt to, and overcome challenges and stressors. In addition, by helping you regulate emotions and by improving your ability to focus, sustain attention, and detach from ideas, silencing the mind sets you up to solve

problems more efficiently, flexibly, and creatively. This is how it boosts your high performance capacity.

- **Silencing the Mind Timing** *addresses which moments in the day you tend to practice Silencing the Mind (e.g., before sleep, after waking, at work, and when under stress).* Because the brain-body system is inseparably sensitive to the ever-changing environment, the baseline relaxed physiological state is often a moving target. Thankfully, silencing the mind can reliably bring us into it. When you practice silencing the mind while calm, you strengthen the neural pathways involved in it, so that it also becomes easier to do in moments of stress. Whatever conditions, moods, or times you find yourself in, silencing the mind is a tool to bring you into the state that is necessary for enhanced resilience and high performance potential.
- **Sleep Duration** *refers to whether the amount of sleep you get falls within the established standards of 7-9 hours per day.* Because not getting an adequate amount of good quality sleep leads to physical and mental disruptions, it takes a toll on your resilience and high performance capacity. Being physiologically out-of-balance can make it more difficult to stay in or return to the baseline relaxed physiological state necessary for adaptive responses to challenges and uncertainties. Being mentally taxed, both in terms of your problem-solving efficiency and regulating your emotional responses, can reduce how ready you are to perform at your best. Hence, sleep duration is an essential Rhythm for optimizing your brain-body system.
- **Strength Exercises** *refers to whether and for how long you do muscle-focused or resistance training on a weekly basis.* Because they enhance your physical health (by moving you away from the risk of developing certain diseases, and helping you return to the baseline relaxed physiological state), strength exercises boost your physiological resilience. By promoting a positive mood, they also boost your resilience on a psychological level. Moreover, the added improvements to your cognitive performance (which enable you to more efficiently solve problems) can take your high performance capacity to even greater heights.
- **Week Bedtime Consistency** *refers to whether you maintain more or less the same bedtime over the weekdays.* Because a stable and consistent sleep-wake cycle helps to maintain and repair cellular processes in our brain-body system, it assists in our physiological recovery from stress, or the wear and tear that occurs as we go about overcoming obstacles and conquering stressors during the day. In this way, bedtime consistency enhances our resilience. In addition, because healthy sleep patterns are associated with a range of boosts to our physical, emotional, and cognitive functioning, and because they recharge and sharpen our minds and the energy we have to work with, they move us closer to high performance.
- **Weekend Bedtime Consistency** *refers to whether you maintain more or less the same bedtime throughout the week, including the weekend.* Because a stable and consistent sleep-wake cycle helps to maintain and repair cellular processes in our brain-body system, it assists in our physiological recovery from stress, or the wear and tear that occurs as we go about overcoming obstacles and conquering stressors during the day. In this way, bedtime consistency that includes the weekend enhances our resilience. In addition, because healthy sleep patterns are associated with a range of boosts to our physical, emotional, and cognitive functioning, and because they recharge and sharpen our minds and the energy we have to work with, they move us closer to high performance.

'High Performance Connectors' Domain:

- **Affective Empathy** *refers to whether you are able to identify, understand, and vicariously experience another person's emotions.* Because affective empathy strengthens your social support system, it makes more interpersonal resources available for coping with life's challenges. Also, by moving you out of an experience of 'emotional isolation', experiencing affective empathy makes emotions less overpowering, thereby helping you to adapt well to the obstacles and uncertainties you are facing. On top of boosting resilience in these ways, being fine-tuned to the emotional climate you are working in allows you to notice and respond better to challenges affecting your team. So, affective empathy sets you up for interdependent high performance.
- **Belonging in Organization** *reflects whether you feel a sense of belonging with and acceptance among others within your organization.* In order for organizations as living entities to survive and thrive, there needs to be a strong sense of connectedness amongst the individuals and groups making it up. This feeling of connectedness fuels a sense of belonging, and, consequently, cohesiveness and cooperation — which form part of the foundation of resilient and high-performing organizations. Where there is a lack of belonging, there is a lack of connectedness, and so the teams of the organization become internally tense and out-of-sync. A lack of belonging can therefore compromise the performance and 'health' of you as an individual, of your team, and via domino effect, of your organization as a whole.

- **Belonging in Personal Life** *reflects whether you feel connected to and accepted by your friends and family.* Having a positive sense of your connectedness, social support, and access to emotional and/or practical resources for dealing with challenges improves your resilience. So too does being in a baseline relaxed physiological state, which is more likely when we feel the 'safety net' of others for 'backup' in facing obstacles and setbacks. In this state, you are also more likely to solve problems effectively, fashion innovative solutions, and take calculated risks that could pay off. So, optimized belonging in your personal life also sets you up for greater high performance.
- **Belonging in Team** *reflects whether you have a sense of connectedness and interdependence with your work-team members.* Having a positive sense of your connectedness, social support, and access to resources for dealing with challenges improves your individual resilience. It also improves the resilience of your team as its own entity, since teams require a strong sense of cohesiveness and unity in order to survive and thrive. The protective, supportive, and interconnected nature of optimized belonging in your team also sets individuals and the entire team up for greater high performance.
- **Cognitive Empathy** *refers to whether you are able to understand another's thoughts, perspectives, and interpretations.* Because of the social safety that cognitive empathy enables, it helps enhance your capacity for resilience. We often require support from others, especially with whom we are closely bonded, during adverse or challenging times. Even if they cannot offer practical solutions, the mere experience of being understood can improve your mood and enhance your outlook on both your ability and your resources with which to overcome challenges. Since cognitive empathy connects minds to each other, it connects individuals to the collective problem-solving machine, in which ideas can be openly shared and built on. In this way, cognitive empathy boosts individual and team high performance readiness.
- **Empathetic Response Style** *reflects whether you perceive that your team members tend to relate with one another's emotions and tend to collaborate when making decisions.* Because it enhances your team's social safety and its availability of mutual emotional/instrumental support, an empathetic response style sets up both individual members and the team as a whole for effectively overcoming obstacles, adapting to challenges, and recovering from setbacks. Hence, it improves your and your team's resilience. As an effect of increased collaboration and free communication, Empathetic Response Style dynamics tend also to promote collective problem-solving and innovation. In this way, it also optimizes individual and collective high performance readiness.
- **Entrustment in Personal Life** *reflects whether you have personal relationships that are mutually confiding and emotionally supportive.* Having entrustment in your personal life means you have a safety net during tough times. You will not have to worry about where to gather the strength and support to overcome obstacles, as it will come from entrusting relationships. They therefore set you up to be more resilient. These sources of strength and support can even encourage you to take risks that could pay off (e.g., applying for an ambitious job), since there are people who will have your back if it doesn't work out. Entrustment therefore also improves your capacity to perform highly.
- **Entrustment in Team** *reflects whether you have work-team relationships that are mutually confiding and emotionally supportive.* By decreasing your brain's sensitivity to interpreting your team/work environment as potentially threatening, Entrustment in your team moves you towards the baseline relaxed physiological state. It also increases your sense of social safety, turning your confident colleagues into resources for coping with challenges and obstacles (both personal and professional). In these ways, entrustment in your team enhances your resilience. Being in a more relaxed and supportive professional atmosphere also naturally increases your capacity for high performance.
- **Freedom to Voice Opinion** *reflects whether you perceive that all members of your work team feel free to voice their opinions and actively participate in important discussions.* Because freedom to voice opinion increases the social safety of the work team and organization, individual members can rest assured that support is available to them whenever they encounter challenges or obstacles. This means they are more likely to remain in a baseline relaxed physiological state in the face of stressors, and are more likely to receive and reciprocate practical assistance in dealing with them. It therefore boosts the resilience and high performance capacity of each member and also of the team as a living entity.
- **Identity in Organization** *reflects whether you have a strong sense of your identity in your organization and whether you share interests/values/beliefs with the people in it.* Because identity in your organization enhances your sense of social safety, it facilitates your brain-body system remaining in a baseline relaxed physiological state, which is essential for responding and adapting well to challenges. It also makes a wider pool of resources available for overcoming those challenges. In these ways, a strong sense of identity in your organization

boosts your resilience. Since it also improves collaboration dynamics within and across teams, stronger identity in your organization sets individual members, teams, and the whole organization up for more optimized, innovative, and efficient high performance.

- **Identity in Personal Life** *reflects whether you share values, beliefs, interests, and other commonalities with your friends and family.* Humans are social beings, and so to function well in the world, we require a strong sense that who we are complements who others are within our groups. Because a strong identification with your family and/or friends means you have greater support and resources in dealing with everyday challenges, it enhances your ability to bounce back from them. This increased resilience provides positive feedback about the strength of your 'safety net' in confronting life's challenges, thereby providing some encouragement that you take risks that could pay off. In this way, a stronger sense of identity in your personal life boosts your high performance capacity.
- **Identity in Team** *reflects whether you have a clearly defined role and a well-aligned value system with your work-team members.* By helping you remain in a baseline relaxed physiological state, a strong sense of identity in your team enhances your resilience. It is further boosted by the increased availability of social and emotional resources for coping with challenges and setbacks. In helping you overcome obstacles, this support reinforces the sense that you and your team can move forward, thereby strengthening your High Performance capacity. Moreover, since you plug more deeply into the collective system (i.e., the team as a singular entity), your individual and collective capacity for problem solving – and therefore high performance – gets further enhanced.
- **Meaning in Personal Life** *reflects whether you have personal relationships that are characterized by meaningful and substantial bonds.* Because it enhances our sense of safety and social support, making meaningful contributions to our personal relationships increases our resources both for coping with challenges and for being encouraged in our pursuits. It therefore enhances our adaptability (a key part of resilience) and our motivation (a necessary catalyst of high performance). Having a grasp on our own value to others naturally boosts our general well-being, too.
- **Meaning in Work Life** *reflects whether you have co-worker relationships that are characterized by meaningful and substantial bonds.* Since recognizing the meaningfulness of your role at work boosts your sense of collective safety and support, it enhances psychological resources for responding more optimally to challenges. Stronger meaning in your work life therefore helps you adapt to stressors, and so it boosts your resilience. Also, because it empowers your sense of motivation in and connectedness to your work, your sense of meaning in your work life provides a fertile environment for you to cultivate your own high performance. Connecting this motivation to the greater work system, it helps unlock the high performance capacity of your team, as well.
- **Trust in Organization** *reflects whether you have trustful, reliant relationships with people in your organization.* Because trust in organization tends to mean better communication, cooperation, and collaboration, it widens the pool of instrumental, social, and emotional resources available to individuals and teams when facing challenges and obstacles. This makes it more likely for the individual, team, and organization to adapt in the face of these stressors. Hence, trust in organization boosts resilience on many levels. It also means more resources are available for fashioning innovative solutions, and that organizational members are more aligned with competing together against external threats (as opposed to competing internally against each other). Trust in organization therefore enhances high performance capacities on multiple levels.
- **Trust in Personal Life** *reflects whether you have trustful, reliant relationships with your friends and family, and whether those people meet your needs and expectations.* Because high degrees of trust in your personal life reflect that you can rely on your friends and family, and that you are confident they will meet your needs and expectations, it creates a sense of safety that, in the face of challenges, setbacks, and obstacles, you will be supported. It therefore helps your brain-body system stay out of chronic stress, and thereby boosts your resilience. By increasing your social safety, lowering your stress, and enhancing your mood, trust also tends to raise the platform off of which you can leap towards sustainable high performance.
- **Trust in Team** *reflects whether you have trustful relationships with your team members and whether you feel your team will meet your needs and expectations.* Because stronger trust in your team reflects that you can rely on your team members, and that you are confident they will meet your needs and expectations, it creates a sense of safety that, in the face of challenges, setbacks, and obstacles, you will be supported. It therefore helps your brain-body system stay out of chronic stress, and thereby boosts your resilience. It also boosts the resilience of your team members if they can trust that you will likewise meet their needs and expectations. Since high trust in your team makes it less likely that things will 'fall through the cracks' if one of you

falters, and more likely that you have resources to recover from such slips, it also sets both you and the team up for sustained high performance.

'High Performance Energy' Domain:

- **Curiosity** *refers to how inquisitive, questioning, and motivated to learn you generally are.* Because curiosity leads to learning, which broadens the knowledge you have available to you, it helps you acquire more resources for solving problems, overcoming challenges, and bouncing forward from setbacks. Also, since having your curiosity satiated gives you a positive mood, it moves you away from negative mental states that would hinder your ability to overcome obstacles. In these ways, curiosity boosts your resilience. On top of increasing your problem-solving knowledge, curiosity provides an extra boost to your high performance readiness by increasing your motivation to keep learning, innovating, and taking rewarding risks.
- **Destructive Habit Avoidance** *refers to whether you do not engage in self-destructive activities or take addictive substances.* These destructive habits 'hijack' the brain's reward (dopamine) pathways, causing it to develop a craving for these shortcuts to 'good feeling' and to become less sensitive to rewarding/motivating feelings generated by healthier activities. Hence, destructive habits have been found to cause lack of motivation, apathy, issues with mood and problem-solving, stress, sleeplessness, as well as a reduced ability to set and achieve goals and maintain healthy relationships. As a result, an individual becomes less able to deal well with challenges and adversity. In this way, destructive habits reduce a person's wellbeing, resilience, and the capacity to perform highly.
- **Enthusiasm** *reflects whether you are generally eager, can motivate others around you, and get easily inspired.* Because enthusiasm cultivates a positive mood state and increases your sensitivity to rewards, it buffers against the development of mood disorders such as depression and anxiety. It also means that the knocks you take from life's challenges, obstacles, and setbacks feel less severe, and are less likely to derail you. In this way, enthusiasm enhances your resilience. Moreover, because it boosts your motivation and goal-directedness, and so encourages your productivity and makes goal attainment more likely for you, enthusiasm also increases your high performance capacity.
- **Financial Safety** *refers to whether you feel secure or worried about your financial affairs, and/or whether you see ways out of financial troubles.* Not having a sense of financial safety can lead to a chronic condition of stress, which weakens the brain-body system against the challenges and obstacles of life. A lack of financial safety therefore reduces your resilience, and even predisposes you to burnout. Moreover, since worries about financial struggles take up mental and emotional energy which could otherwise be directed to completing and excelling at your tasks, a lack of financial safety also compromises your high performance capacity.
- **Gratitude** *means whether you are appreciative of all the things that bring value and meaning to your life.* Because the abundance mindset of gratitude opens up more avenues in your mind for adapting to obstacles, overcoming challenges, and obtaining support, it makes it more likely you will improve your resilience. It also helps to enhance your well-being by being a tool to regulate your emotions and get out of the rut of negativity. Since it also creates a positive mood-state (which boosts your motivation) and strengthens your interpersonal connections (through the expression of appreciation), gratitude can set both you and your social circle (or team) up for high performance.
- **Humor** *refers to whether a humorous perspective features in your daily interactions and activities.* Laughter is associated with the release of 'feel-good' hormones in the brain, which increases your energy and motivation for interacting with the outside world. This boost of mental energy, which can reduce the perceived size/difficulty of threats and stressors, therefore enhances both your resilience and high performance capacity. Additionally, because laughing with others enhances the quality of your connections, it also strengthens your social support network, which is a resource pool to help you deal with adversity and challenges. Humor's impact on your connectedness therefore provides an additional boost to your resilience and high performance capacity.
- **Internal Drive** *reflects whether you have a good sense of the combination of your self-efficacy, confidence, meaningfulness, engagement, and dedication when it comes to your work.* Because the components of internal drive increase your positive emotions, your confidence in your abilities, and your sense of well-being, they therefore buffer you against the negative effects of threats, stressors, and challenges in both your professional and personal life. A higher internal drive therefore reflects being more resilient. Moreover, because it directly boosts your dedication to and engagement in your work, internal drive readies you for consistent high performance.

- **Negative Thought Pattern Reduction** refers to whether your mind is not predominantly characterized by negative, limiting, reality-distorting thought patterns. Negative thought patterns reduce our motivation and self-efficacy, lower our mood, and cut off possibilities for overcoming obstacles and challenges. It therefore becomes harder to work our way out of any problems we may be facing. In contrast, positive thought patterns improve our sense of optimism, hope, motivation, and our ability to set and achieve goals. They make accomplishing tasks and overcoming obstacles more manageable. They therefore set us up to find solutions, adapt to challenges, and overcome obstacles – boosting our resilience, our well-being, and our readiness to perform highly.
- **Optimism** refers to whether you are able to feel or see that all challenges and stressors can be overcome. Optimism strengthens our sense that we can face a challenge, adapt to it, and overcome it. It even orients us to see what value can be gained from tough times. Optimism therefore helps us become more resilient, and sets us up to perform highly in any area of our lives. Being optimistic is also associated with many health benefits: stronger immunity, a longer life, and more protection from high blood pressure, heart disease, and depression. So, simply channelling more optimistic thoughts will help improve your sense of well-being, too.

'High Performance Transformers' Domain:

- **Cognitive Diversity in Team** measures whether there is diversity in fields of expertise, skills, and knowledge amongst your team members. Because having different professional perspectives available in the problem-solving process enhances both team and individual flexibility, creativity, and adaptability, it enhances both group and individual resilience. Otherwise, using the same perspectives when problem-solving limits your and your team's abilities to adapt when problems arise, thereby decreasing resilience. Moreover, when multiple ideas from diverse fields are collected, the probability of arriving at the most optimal solution for a given problem is increased. Cognitive diversity therefore also strengthens your and your team's high performance capacities.
- **Emotion Regulation** refers to whether you can adjust, switch, or hold back your emotional responses if a situation requires it. Resilience and the capacity for high performance require that we respond optimally to the challenges and obstacles we encounter. Emotions can get in the way of this optimal response, as they are activated at the bottom of the forebrain, a lower evolutionary area that promotes instinct-based reactions. If we act on emotions without processing them through our higher-order prefrontal cortex (by considering consequences or being mindful about what is really happening in the present,) then we are unlikely to detect and take an optimal action. So, regulating the influence of your emotions will promote better decisions, and enhance your resilience and high performance capacity.
- **Fear Filter** reflects whether you automatically feel tense when you encounter changes or something new. Both your resilience and high performance capacity rely on your brain-body system entering a baseline relaxed physiological state. Fearful or tense responses actually resist this state, as they reflect the fight-or-flight response being activated. Chronic activation of this response can lead to excessive cortisol (the stress hormone) circulating in your system, reducing your resilience and bringing you closer to burnout. The fear response also directs cognitive resources towards lower-level survival-related actions, and away from higher-level, thriving-related ones, therefore reducing your high performance readiness.
- **Self-Group Balance** reflects whether you believe others' needs and goals are as important as yours, or whether you compete/pursue your own success to the detriment of others. Because pursuing your own goals at the expense of others can cause a reduction in the social and practical support available to you, it can decrease your chances of overcoming challenges and adapting in the face of stressors. It can also breed an atmosphere of distrust in the group, and a compromised sense of psychological safety makes the group less likely to withstand breakdown. Low self-group balance can therefore impair the resilience of the group, and of you as an individual. In contrast, having your individual and group goals equally respected and supported enables a higher degree of social safety, mutual support and encouragement, and availability of resources for bouncing back from challenges and fashioning novel solutions. Hence, self-group balance enhances your high performance capacity.
- **Social Diversity in Team** measures whether there is diversity in social demographic characteristics amongst your team members. Having a diverse pool of perspectives available when your team is faced with challenges/setbacks increases its resilience in overcoming them. More than this, a diversity of perspectives boosts your team's capacity for innovation when solving complex problems collectively, thereby optimizing its capacity for high performance. While as an individual team member you may not be responsible for diversifying the team's membership, merely extending awareness to and inviting other perspectives within the team can increase your flexibility in problem-solving.

‘High Performance Innovators’ Domain:

- **Divergent Thinking** *refers to whether you try generating multiple, unconventional solutions when problem-solving, as opposed to singular, standard solutions.* When we consider many possible options and decide on the best one, we are enhancing our ability to adapt and to improve our resilience. When life throws challenges or troubles our way, we will be better able to think of ways around these obstacles. When we encounter demanding tasks, problems at work, or a need to fashion something innovative, divergent thinking will help us come up with the most effective or creative answer or solution, and so it improves our readiness to perform highly, too.
- **Executive Function** *reflects how you rate a collection of your higher-order mental processes including working memory, processing speed, and thinking flexibility.* Performing highly and responding to challenges and obstacles in optimal ways (that is, being resilient) requires the well-oiled machinery of your executive functions. These functions include using your long-term and working memory, processing information quickly and efficiently, and being flexible in your thinking. When these functions are compromised, it can prove difficult to choose the best way to deal with a stressor/challenge, fashion a novel and innovative solution, determine the source of a fault, or plan wisely for the future. Since stronger executive functioning promotes the success of these tasks, it therefore makes you a more resilient and high-performance-ready individual.
- **Flexible Interrogation** *refers to whether you use critical thinking skills in problem-solving (e.g., looking at a problem from different angles, at its component parts, or at its hypothetical possibilities).* Because flexible interrogation trains you to approach solving problems from a variety of perspectives — perspectives which you can then implement across various contexts — it empowers you to respond to and overcome challenges more effectively and rapidly. It therefore enhances your resilience. Moreover, because this critical thinking approach creates space for innovative ideas, it increases your readiness for high performance in your professional life.
- **Involuntary Daydreaming Avoidance** *reflects whether you experience your mind drifting off involuntarily while you are trying to focus on a task.* Because involuntary daydreaming tends to reduce how engaged you are with your tasks, it compromises your high performance readiness. Since it also tends to indicate that your mind is occupied by potentially distressing things — such as being overburdened at work, or strong emotional experiences from different contexts, which all tend to remove you from the present moment — involuntary daydreaming decreases your chances of successfully responding to, adapting to, and overcoming the challenges that you are facing in the moment. It therefore negatively impacts your resilience, too.
- **Team Divergent Thinking** *refers to whether your team solves problems by generating multiple possible solutions instead of just one, default option.* Because being able to come up with many creative ideas increases the extent to which your group can adapt in the face of challenges, team divergent thinking enhances your individual and collective Resilience. Moreover, because it encourages active exploration of options, and therefore facilitates arriving at the most innovative solution, team divergent thinking moves you and your team towards consistent high performance. Your high performance capacity is also boosted by the learning and collaboration opportunities that collective brainstorming promotes.

2.2 STATISTICAL PROPERTIES OF THE NEUROZONE® PERSONAL ASSESSMENT

For more details than what is provided here on the statistical properties of the Neurozone® Resilience Index and the Neurozone® Personal Assessment (battery of learnable neurobehaviors), consult the peer-reviewed published articles and white papers in Part 4 (Early and Current Research).

2.2.1 Reliability

2.2.1.1 The Neurozone® Resilience Index

Neurozone® assessed internal consistency by computing Cronbach's α for each of the three components of the Neurozone® Resilience Index. Both the Positive Affect and Early-Life Stability components demonstrated high reliability ($\alpha = 0.879$), while the Stress Mastery component demonstrated acceptable reliability ($\alpha = 0.683$). For all items across the three components, the corrected item-total correlations were above 0.300, indicating acceptable levels of correlation between items and the total questionnaire (Neurozone® Resilience Index) score. Results also show that deletion of any items across the three components would not affect reliability because item values were all below the respective component Cronbach's α values.

2.2.1.2 The Neurozone® Battery of Learnable Neurobehaviors

Reliability was tested on the item-level for each construct. All items associated with each construct were included in factor analysis as its own questionnaire/scale. The Kaiser-Meyer-Olkin statistic for all factor analyses was determined to be >0.600 , with Bartlett's sphericity test at $p < 0.001$ in all instances. These results together indicate sampling adequacy, as well as the suitability of the extraction method employed. The average factor loading for items across all constructs was 0.812 (range 0.390 – 0.927), which is regarded as very high. In addition, all constructs included for internal consistency analyses had Cronbach's α values above the acceptable threshold of 0.700, with a range of 0.731 – 0.916. The average Cronbach's α value across all constructs was 0.822, which is indicative of very good reliability.

2.2.2 Validity

2.2.2.1 The Neurozone® Resilience Index

In the published peer-reviewed study, Neurozone® tested convergent, concurrent, and incremental validity. In these tests, the following measures were used for resilience, anxiety, depression, posttraumatic stress (PTSD), and sleep disturbance, respectively: [the Resilience Scale \(RS\)](#), [the State & Trait Anxiety Inventory \(STAI\)](#), [the Patient Health Questionnaire 9 \(PHQ-9\)](#), [the Primary Care PTSD Scale \(PC-PTSD\)](#), and [the Pittsburgh Sleep Quality Index \(PSQI\)](#).

In one follow-up study, concurrent and convergent validity were tested for using different measures. These included [the Connor-Davidson Resilience Scale \(CD-RISC\)](#) and [the Beck Depression Inventory – Second Edition \(BDI-II\)](#). In a second follow-up study, concurrent and convergent validity were tested for again using a briefer, [10-item version of the Connor-Davidson Resilience Scale \(CD-RISC-10\)](#), as well as [the Generalized Anxiety Disorder Scale \(GAD-7\)](#) and [the Athens Insomnia Scale \(AIS\)](#).

Concurrent validity

Testing for concurrent validity means demonstrating that there is a statistically significant relationship between the Neurozone® Resilience Index and an existing reliable and valid resilience measure. In the published study, Neurozone® found a significant large positive correlation ($r = 0.655$, $p < 0.001$) between the Neurozone® Resilience Index and the RS. This confirmed concurrent validity in the first instance. The first follow-up study showed a significant large positive correlation of the Neurozone® Resilience Index with the CD-RISC ($r = 0.672$), and the second follow-up study similarly showed a significant, large correlation between the Neurozone® Resilience Index and the CD-RISC-10 ($r = 0.630$). Concurrent validity was therefore confirmed in these instances as well.

Convergent validity

Testing convergent validity means establishing a statistical relationship between measures that are theoretically related. Given the theory that psychological resilience is protective against common psychopathologies, Neurozone® decided to test for a significant inverse (negative) relationship between the Neurozone® Resilience Index and established measures of psychiatric symptoms (i.e., of anxiety, depression, PTSD, and sleep disruption). Results from the published study showed significant medium-to-large negative correlations with anxiety (STAI; $r = -0.647$), depression (PHQ-9; $r = -0.473$), PTSD (PC-PTSD; $r = -0.173$), and sleep disruption (PSQI; $r = -0.366$). Convergent validity was thus confirmed in this instance.

In the first follow-up study, a significant, large, negative correlation was demonstrated between the Neurozone® Resilience Index and depression (BDI-II; $r = -0.653$). Significant negative correlations were also reconfirmed in this sample for the same measures of anxiety, sleep disturbance, and PTSD as in the published study. In the second follow-up study, significant, large, negative correlations were found between the Neurozone® Resilience Index and anxiety (GAD-7; $r = -0.480$) and sleep disturbance (AIS; $r = 0.490$). Similarly, significant negative correlations were reconfirmed in this sample for the same measures of depression and PTSD as in the published study.

Incremental validity

Testing incremental validity meant demonstrating that the Neurozone® Resilience Index has predictive ability over and above an existing resilience measure. Neurozone® tested this in the published study using stepwise regression analyses to determine if the Neurozone® Resilience Index

explains an additional and significant amount of variance (R^2) over and beyond the RS in predicting anxiety, depression, PTSD, and sleep disruption. Results showed that this was indeed the case for all outcomes. Incremental validity was thus confirmed.

2.2.2.2 The Neurozone® Battery of Learnable Neurobehaviors

Correlational analysis was used on a construct level for validity testing. In order for a construct to be regarded as valid, a significant positive correlation with the Neurozone® Resilience Index needed to be demonstrated. Results of the analysis showed that all constructs exhibit a significant positive correlation with the Neurozone® Resilience Index. The average correlation size (Pearson's r) across all constructs was 0.403 (medium-to-large range), which is nearly double the size of [correlations typically found in psychological research](#).

2.2.3 Norms

Resilience is not a stable trait, and thus we do not use norms for interpreting scores on the Neurozone® Resilience Index (NRI). We use a 'user average' instead, which is derived from averaging out the NRI scores of all individuals who completed the NRI, for the first time, over the last 12 months (typical $n = 1000$). The Neurozone® Personal Report provides the user with the user average for the Neurozone® Resilience Index, against which they can compare their score.

Like resilience, the neurobehaviors are not stable traits. The Neurozone® Personal Assessment does not, however, provide the user with user averages for each neurobehavior. It is less meaningful that a user focuses on a particular neurobehavior in isolation (e.g. whether it is more or less optimized for them compared to for other users), and more meaningful that they compare their score on a particular neurobehavior in relation to its indicated impact on their own score on the Neurozone® Resilience Index.

2.2.4 Standard Error of Measurement

Resilience is not a stable trait, so it is unsound to hold that there is a static 'true score' of a person's level of resilience, uncoverable through repeated assessments. Standard error of measurement is thus inapplicable to the Neurozone® Resilience Index. Likewise, many of the neurobehaviors are not expected to be stable over time and circumstance. Standard error of measurement is therefore inapplicable to the neurobehaviors in the Neurozone® Personal Assessment as well.

2.2.5 Response Style Indices

For both the Neurozone® Resilience Index and the Neurozone® battery of learnable neurobehaviors, consideration of Response Style Indices is inapplicable. There is sufficient incentive for users to answer truthfully (i.e. so that their level of resilience, and the means to improve it, can be provided). Additionally, the assessment should not be used in any kind of clinical or professional screening – thus additionally curbing the risk of misrepresentation in their answers.

2.3 ADMINISTRATION CONDITIONS

- The Neurozone® Personal Assessment is administered in digital format and can be completed via smartphone, tablet, or desktop/laptop computer. As it is [online](#), it requires a stable internet connection.
- Users must complete the assessment in one sitting (~25 minutes), since the analysis is predicated on the user providing all answers under the same state(s).
- The Assessment is appropriate for any adult (i.e. above 18 years of age) to use on their own.
- The Assessment and Report are in English, and so a user should have a fair level of English literacy.
- It is not usually necessary that another party (e.g. a coach, a psychologist) explain the Assessment items to a user. In fact, it is advised that a user complete the Assessment on their own.

2.4 REPORT FORMATS

The Neurozone® Personal Report is presented as an interactive PDF document that allows the user to access media and digital links to external information when the Report is viewed on a digital device (e.g. smartphone, tablet, or desktop/laptop computer). It is therefore less advisable to use the Report in printed format.

The sections of the Neurozone® Personal Report are as follows:

- **Page 2** provides the user with an overview of what was assessed in the Neurozone® Personal Assessment. Note that in the Report, the learnable **neurobehaviors are called 'Paths'**, as the cultivation of them represents a means, route, or 'path' towards higher resilience and a greater capacity for high performance.
- **Page 3** provides the user with their score on the Neurozone® Resilience Index (NRI), and explanation of the various bands of the NRI, including what it means for their score to be in the band it is in. The user average for the NRI is also included on this page.
- **Page 4** explains Neurozone®'s High Performance Code, that is, how their commended and recommended neurobehaviors are determined. In this manual, the High Performance Code is explained in [The Learnable Neurobehaviors](#)
- **Pages 5-14** provide a user's Domain Summary and Domain Explanations per the Five High Performance Domains.
 - The Domain Summary page shows normalized scores (i.e. percentages) of how optimized the various Paths (neurobehaviors) in that Domain currently are for the user. It also indicates one commendation (i.e. Path a user is doing well at) and one recommendation (Path a user should try to optimize) for this Domain.
 - The Domain Explanations page provides users with an explanation of what the particular Domain means, as well as definitions of the Paths that are displayed on the preceding Domain Summary page. In this manual, these definitions are in [DISCUSSION OF NEUROZONE® PERSONAL ASSESSMENT MODEL](#).
 - **Note:** Pages can only display 10 Paths per Domain. The High Performance **Rhythms** and High Performance **Connectors** Domains contain more than 10 Paths. So, in the Neurozone® Personal Report, only a user's top 5 (commendations) and bottom 5 (recommendations) Paths are displayed for Rhythms and Connectors (i.e., a user's 'middle-scoring' Paths are omitted). Bear in mind that, per the High Performance Code, the top 5 Paths are not necessarily the highest percentage scores, nor are the bottom 5 Paths necessarily the lowest percentage scores. See [Exclusions from the Assessment and Report](#) for more information on why additional Paths may be omitted from the Report.
- **Page 15** lists a user's top 6 recommendations (Paths/neurobehaviors that have the biggest opportunity to improve their score on the NRI), in descending order, as determined by Neurozone®'s High Performance Code.
- **Pages 16-33** provided explanations of each of a user's top 6 recommendations. Each of these explanations includes (1) elaboration on what the Path/neurobehavior is and how it works to enhance resilience and high performance capacities, (2) a link to a short podcast created by Neurozone®, and a link to an independent science-backed article, to provide deeper comprehension of the Path/neurobehavior, and (3) four suggested practical activities for a user to try out in order to cultivate more of, or optimize, this Path/neurobehavior.
- **Page 34** contains a selection of 10 videos produced by Neurozone® concerning the neuroscience of resilience, the brain-body system, and the Domains of High Performance. They serve as additional, grounding insights so that a user can more comprehensively appreciate the purpose of measuring and aiming to enhance their resilience through the Neurozone® Personal Assessment.

2.5 INTERPRETATION GUIDELINES

To summarize points captured elsewhere in this manual on the interpretation of scores in the Neurozone® Personal Report:

- The **Neurozone® Resilience Index (NRI)** provides a score from 0 to 100, organized into one of 5 bands of resilience (see [Neurozone® Resilience Index](#) of this manual for more detail). It represents a user's current level of psychological resilience. The score on the NRI is **dynamic** (not static), meaning it represents a user's level of resilience *at the present moment*. Their score on the NRI can therefore change with subsequent assessments.

- On page 3, the **Neurozone® User Average** is displayed underneath the user's NRI score. This represents the average of all first-time NRI scores obtained by the current Neurozone® user base over the past 12 months.
- The scores for **Paths** (learnable neurobehaviors) are normalized values (i.e., percentages) representing how optimized they are for the user at the current moment. These scores are not in relation to anything else (e.g., the NRI); rather, they are self-contained.
 - For example, if a user sees that Cardio Exercises has a score of 75%, it means (no more and no less than) that this user is currently doing 75% of the minimum recommended amount of weekly Cardio Exercises for the average adult.
- The **recommended Paths** and **commended Paths** are not necessarily those for which a user obtained the (respectively) lowest and highest scores. In the Neurozone® High Performance Code, recommendations and commendations are calculated through a combination of (1) the answers a user provides and (2) the statistical weight that each Path currently has in relation to influencing the score on the Neurozone® Resilience Index (NRI).
 - For example, a user may see in the Energy Domain Summary of their Report that Optimism has a score of 35% and Gratitude has a score of 25%. They might expect that Gratitude (the lower score) would be recommended above Optimism, but instead they see the Report indicating that Optimism is their recommended Path. This is not an error. Rather, it means that Optimism currently has a higher statistical contribution to the NRI than Gratitude, and so this user can gain a larger improvement to their NRI if they cultivate more Optimism instead of more Gratitude. (Note: This example is purely illustrative; it is not necessarily stating that Optimism is indeed ranked more highly than Gratitude in the High Performance Code.)

2.6 CUSTOMIZATION OPTIONS FOR THE NEUROZONE® PERSONAL ASSESSMENT

Neurozone® recognizes the different circumstances under which different people will take this Assessment, and has therefore built certain context-customization commands into the Assessment in order to account for this. In particular, Neurozone® accounts for people who work in a variety of settings (e.g., within an organization, within a team, within both, within neither), as well as those who are not currently employed and/or are university students. These occupational context questions are asked at the beginning of the Assessment in order to adjust which questions are subsequently asked of the user. Otherwise, without this kind of customization, a customer would be asked questions that are irrelevant and unanswerable to them.

2.6.1 Exclusions from the Assessment and Report

There are certain Paths (neurobehaviors) that will not appear in a user's Neurozone® Personal Report if they answer the Neurozone® Personal Assessment in the following ways:

Work-Related Questions and Paths

- At the beginning of the Assessment, if a user indicates that they are **not employed/working**, or that they **want to complete the assessment as a student** (not a working individual), they will not be asked questions relating to work. Therefore, the work-related Paths/neurobehaviors will not be displayed in their Report. These work-related Paths/neurobehaviors include:
 - Rhythms Domain: Silencing the Mind Timing (This Path asks the user to rate how often they silence their minds in different scenarios, such as while working. Thus, this Path is omitted for those who do not work.)
 - Connectors Domain: Belonging in Team; Belonging in Organization; Empathetic Response Style; Entrustment in Team; Freedom to Voice Opinion; Identity in Team; Identity in Organization; Meaning in Work Life; Trust in Team; Trust in Organization
 - Energy Domain: Internal Drive
 - Transformers Domain: Cognitive Diversity in Team; Social Diversity in Team
 - Innovators Domain: Team Divergent Thinking

- If a user indicates that they **are employed/working** (and/or want to complete the assessment as a working individual), but they **do not work in a team**, then only team-based work-related questions will be removed from the Assessment, and those Paths will be omitted from the Report. These include:
 - Connectors Domain: Belonging in Team, Empathetic Response Style; Entrustment in Team; Freedom to Voice Opinion; Identity in Team; Meaning in Work Life; Trust in Team.
 - Transformers Domain: Cognitive Diversity in Team; Social Diversity in Team
 - Innovators Domain: Team Divergent Thinking.
- If a user indicates that they **are employed/working** (and/or want to complete the assessment as a working individual), but **do not work in an organization**, then only organization-based work-related questions will be removed from the Assessment, and those Paths will be omitted from the Report. These include:
 - Connectors Domain: Belonging in Organization; Identity in Organization; Meaning in Work Life; Trust in Organization.

Potentially Sensitive Questions and Paths

- In the Assessment, assessing the Path/neurobehavior called '**Destructive Habit Avoidance**' opens with the following screener question: "Do you currently have any destructive habits in your life? (Examples include smoking, addictions, over-eating, excessive exercising)?" If a user selects "Prefer not to say", then subsequent questions for this are skipped, and the Path will be omitted from the Report.
- In the Assessment, assessing the Path/neurobehavior called '**Financial Safety**' opens with the following screener question: "Are you comfortable answering some questions about your financial situation?". If a user selects "No", then subsequent questions for this are skipped, and the Path will be omitted from the Report.

2.6.2 Automatic Calculations from Screener Questions

Depending on how a user answers certain screener questions for particular (sets of) Paths/neurobehaviors, they may see scores for these neurobehaviors in their Report despite not answering specific questions about them. In particular:

- For the **Exercise** screener question ("Have you exercised in the last month?"), if a user answers "No", then all Exercise Paths (Balance and Flexibility Exercises, Cardio Exercises, Exercise Duration, Exercise Routine, High-Intensity Interval Training, Strength Training) are automatically scored at 0%. These Paths may therefore be included in the user's Report (likely as possible recommendations).
- For the **Silencing the Mind** screener question ("Do you silence your mind?"), if a user answers "No", then all Silencing the Mind Paths (Deep Breathing, Focused Attention, Silencing the Mind Duration, Silencing the Mind Routine, Silencing the Mind Timing) are automatically scored at 0%. These Paths may therefore be included in the user's Report (likely as possible recommendations).

2.7 PRACTICAL APPLICATION OF THE NEUROZONE® PERSONAL ASSESSMENT RESULTS

2.7.1 Clinical Use

The Neurozone® Personal Assessment (including the Neurozone® Resilience Index) is **not a clinical tool**. Although it has robust psychometric properties, and has demonstrated strong relationships with certain psychiatric instruments that can be used clinically, the Neurozone® Resilience Index is not a clinical diagnostic tool, nor was it developed with this in mind. The NRI (and the Personal Assessment more broadly) should not be used for the purposes of making clinical evaluations.

2.7.2 Use of the Neurozone® Personal Assessment in Coaching

The Neurozone® Personal Assessment can be used in coaching. A coach may find useful statistically derived insights into certain areas of strength (to be encouraged/commended) in their client (the Assessment user), as well as areas of opportunity (recommendations) to build up their client's capacities. The suggested activities (recommendations) in the client's Report can be incorporated into, or provide useful departure points for, a coach's own methods for and approaches to behavioral change.

2.7.3 Use of the Neurozone® Personal Assessment in Leadership Development

The Neurozone® Personal Assessment can be used for leadership development. Many of the learnable neurobehaviors cultivate not just greater resilience but also skills for better self- and other-leadership.

2.7.4 Use of the Neurozone® Personal Assessment in Teams

The Neurozone® Personal Assessment is designed for individuals and does not attempt to analyse team characteristics. At the same time, the assessment can be used in Team coaching to provide insight to team members on their individual scores and facilitate conversation and insight within the team on how team members can support each other to encourage more resilience building behaviors.

2.7.5 Use of the Neurozone® Resilience Index across Economic, Geographic, and Industry Settings

As explained in the peer-reviewed published paper on the [development and validation of the Neurozone® Resilience Index](#), the NRI is appropriate for use in both high-income countries and low-to-middle-income countries. It has also been used in populations spanning multiple continents (Europe, North America, Africa, Oceania), and it has such wide applicability and relevance because, neuroscientifically, resilience operates in the same broad ways (see [Neuroscientific Explanation of Resilience in the Brain-Body System](#)) among all humans. Moreover (and for the same reason), [the white paper on its multiple validations](#) demonstrates that the NRI is appropriate for use in both university student and working adult populations spanning various industries.

3 ETHICAL USE OF THE NEUROZONE® PERSONAL ASSESSMENT

The Neurozone® Personal Assessment and the Neurozone® Resilience Index (NRI) have been designed by mental healthcare experts, some of whom are registered professionals with the HPCSA. It is assumed that the instrument will be used by practitioners who are engaging with clients in a helping or supporting capacity and it is therefore advised that ethical use of the Neurozone® Personal Assessment (including NRI) follows an acceptable minimum of general standards for best practice as prescribed by ethical codes common in the helping professions.

3.2 Practitioner Competence

A practitioner (e.g. coach) who may recommend the use of the Neurozone® Personal Assessment to a client (user), and who may assist this client in the interpretation of the Neurozone® Personal Report and the formation of action-plans for the client's behavioral change, must familiarize themselves with this technical manual. The purpose of this familiarization is so that a practitioner does not (intentionally or unintentionally) misrepresent the nature of the Assessment and its results to the client. In other words, it is important that a practitioner (1) knows the bounds of what the Assessment and Report do and do not represent and recommend for an user's capacities, and (2) accurately conveys this to the user/client.

3.3 Administration and Dissemination of Results

It is advised that a user complete the Neurozone® Personal Assessment (including the NRI) by themselves, without the assistance or surveillance of another person (excepting perhaps in the case of users with disabilities where such assistance is necessary). Otherwise, social desirability bias and impression management may lead a user to misrepresent themselves in the Assessment, resulting in a Report that is not as helpful to them as it could be.

The generated Report is the private property of the user. It is up to the user if and with whom they would like to share their Report. Consent from the user should also be obtained if a chosen confidant (e.g. coach) would like to share a user's report with other parties.

3.4 Interpretation of Results

It is essential to note that the Neurozone® Personal Assessment (including NRI) is **not** a screening tool for either clinical or occupational purposes. It is **not** a diagnostic instrument, a personality assessment, or a measure of cognitive/intellectual ability or professional competencies. It should therefore never be used, recommended, or interpreted as such.

That being said, the Neurozone® Resilience Index does reliably and validly assess a person's current level of psychological resilience. It is important to note that the NRI score is **not** static; that it can change with reassessment.

It is also important to note that the various learnable neurobehaviors/Paths may (or may not) diverge from other operationalizations/constructs by the same name in different psychometric instruments. Always refer to the list of definitions in this manual ([The Learnable Neurobehaviors](#)) for the specific demarcation of each neurobehavior as it is measured/operationalized in the Neurozone® Personal Assessment.

4 EARLY AND CURRENT RESEARCH

4.2 NEUROZONE® PEER-REVIEWED PUBLICATIONS

van Wyk, M., Lipinska, G., Henry, M., Phillips, T. K., & van der Walt, P. E. (2022) The development and validation of the Resilience Index. *International Journal of Testing* <https://doi.org/10.1080/15305058.2022.2036162>

van Wyk, M., Mason, H. D., van Wyk, B. J., Phillips, T. K., & van der Walt, P. E. (2022). The relationship between resilience and academic success among a sample of South African engineering students. *Cogent Psychology*, 9(1), <https://doi.org/10.1080/23311908.2022.2057660>

4.3 NEUROZONE® WHITE PAPERS

Neurozone®. (2017). Linking neuro-psycho-metrics with cortisol [White paper]. Available: https://fs.hubspotusercontent00.net/hubfs/9441450/Neurozone_White_Paper_Linking%20Neuro-Psycho-Metrics%20with%20Cortisol.pdf

Neurozone®. (2017). Validation of the Neurozone® Brain Performance Diagnostic [White paper]. Available: https://fs.hubspotusercontent00.net/hubfs/9441450/Neurozone_White_Paper_Validation_of_BPD2_Aug2017.pdf

Neurozone®. (2023). The Development & Validation of the Neurozone® Assessment [White paper]. Available: <https://9441450.fs1.hubspotusercontent-na1.net/hubfs/9441450/White%20Papers/The%20Development%20&%20Validation%20of%20the%20Neurozone%20Assessment.pdf>

Neurozone®. (2023). Validation of the Neurozone® Resilience Index across Different Populations. [White paper]. Available: https://9441450.fs1.hubspotusercontent-na1.net/hubfs/9441450/White%20Papers/Technical%20White%20Paper_Validation%20of%20the%20Neurozone%C2%AE%20Resilience%20Index%20across%20Different%20Populations.pdf

van Wyk, M., Ortscheit, M., Phillips, T. K., van der Walt, P. E., & Lipinska, G. (2023). Resilience as a protective factor against the exacerbating effects of anxiety on depression [Abstract of paper submitted for peer-review]. Available: https://9441450.fs1.hubspotusercontent-na1.net/hubfs/9441450/White%20Papers/Academic%20Abstract_Resilience%20as%20a%20Protective%20Factor%20against%20the%20Exacerbating%20Effects%20of%20Anxiety%20on%20Depression.pdf

5 MORE RESOURCES

5.2 REFERENCES FOR NEUROZONE®'S FRAMEWORK FOR DEVELOPING RESILIENCE

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- Yao, Z-F., & Hsieh, S. (2019). Neurocognitive mechanism of human resilience: A conceptual framework and empirical review. *International Journal of Environmental Research and Public Health*, 16, 5123. <https://doi.org/10.3390/ijerph16245123>

5.3 NEUROZONE® SCIENCE LIBRARY

For a (non-exhaustive) selection of published, peer-reviewed scientific articles that inform Neurozone®'s recommendations for the various Paths/neurobehaviors, explore a document called the Neurozone® Science Library (2022) here:

https://9441450.fs1.hubspotusercontent-na1.net/hubfs/9441450/NZ%20Science%20Library_pdf.pdf