HEALTHY-LONGER

MENTAL STRENGTH & RESILIENCE REPORT

SAMPLE REPORT

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Your mental strength & resilience

based on the analysis of neuro-biomarkers

1 YOUR NUTRITION

- the foundation of your mental strength and resilience

Mental Health was previously defined as "the condition of being sound mentally and emotionally that is characterized by the absence of mental illness."

Today, mental health is understood more broadly, encompassing **our emotional, psychological, and social well-being. It's not about the absence of illness, but rather a measure of how well we are. In short:**

OUR CAPACITY TO THINK, FEEL, AND HANDLE STRESS, BUT ALSO, TO RELATE TO OTHERS AND MAKE HEALTHY CHOICES.

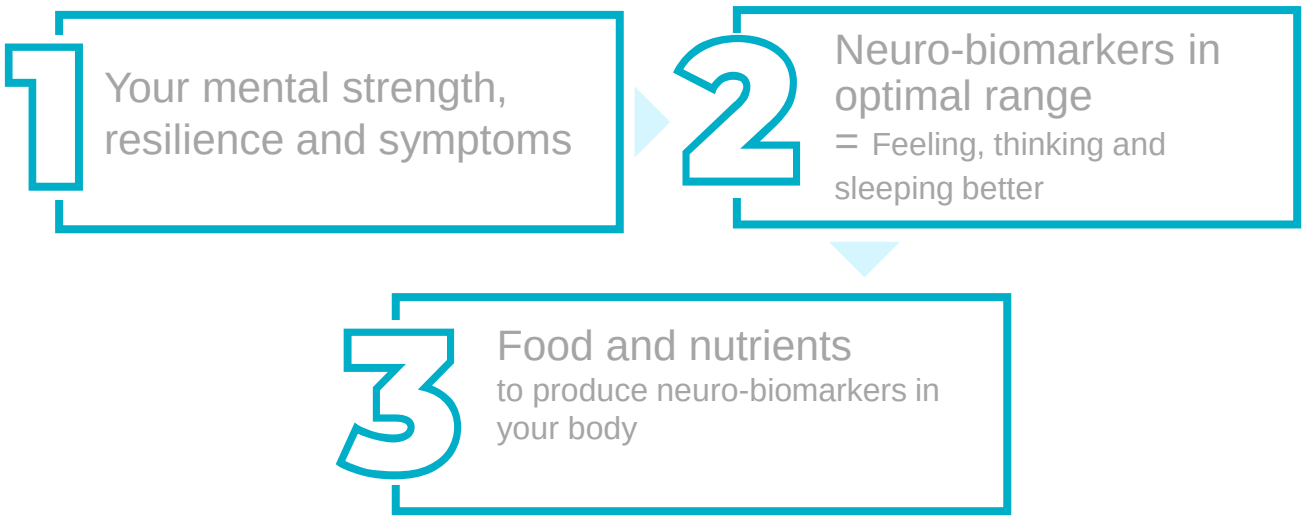
To think, feel, and control our bodily functions, our brain needs neuro-messengers – chemical substances responsible for all signaling and communication in the nervous system. Those substances are therefore important neuro-biomarkers strongly correlated with your mental strength and resilience. The most important neuro-messaging substances are ingested or produced through our daily food intake. That's why diet is one of the safest ways to balance them, as food offers a low risk of overdose and often optimal conditions for natural absorption.

Nutrients in food can be:

- Precursors (necessary components/building blocks) or
- Co-factors (necessary production assistants) of neuro-messengers.

They enter the brain across the blood-brain barrier, with transporters shuttling precursors in and messengers and their metabolites out.

Here's how it's all connected:



1 YOUR MENTAL STRENGTH & RESILIENCE SUMMARY

(based on the analysis of neuro-biomarkers)

The connection between mental strength and resilience, level of neuro-biomarkers, and nutrition is well studied. 40% of all studies on mental health is dedicated to nutrition (The U.S. National Library of Medicine, National Institutes of Health) and 1 of 10 studies focuses specifically on the connection between neuro-messengers/biomarkers and nutrition. Adhering to the modern definition of mental health, we have analysed your well-being in the 10 categories listed below.

If a neuro-biomarker is not in the optimal range, it means that its level may be low or high, and may lead to symptoms, such as e.g., susceptibility to stress or sleep issues. Neither low nor high is good – for example, a too low dopamine level can lead to reduced motivation and energy levels. High dopamine levels are no better and can also lead to restlessness and feelings of nervousness. When it comes to mental strength and resilience related to signaling and messaging, balance (optimal range) is what matters.

Mental Health Category	You signaled at least moderate symptoms in the following area(s)	No of your neuro-biomarkers within the optimal range	No of your neuro-biomarkers out of optimal range
A Sleep quality	●	9	6
B Stress and burnout	●	5	6
C Memory, focus and attention *(incl. associations with ADD/ADHD)*	●	4	8
D Anxiety, excessive worry and trauma	●	6	4
E Low mood and depression	●	7	8
F Energy and libido	●	7	6
G Appetite balance	●	5	6
H Susceptibility to addictions		5	2
I Self regulation	●	2	6
J Immune system		8	6

2

Your neuro-biomarkers

2 MENTAL STRENGTH AND RESILIENCE IS REFLECTED

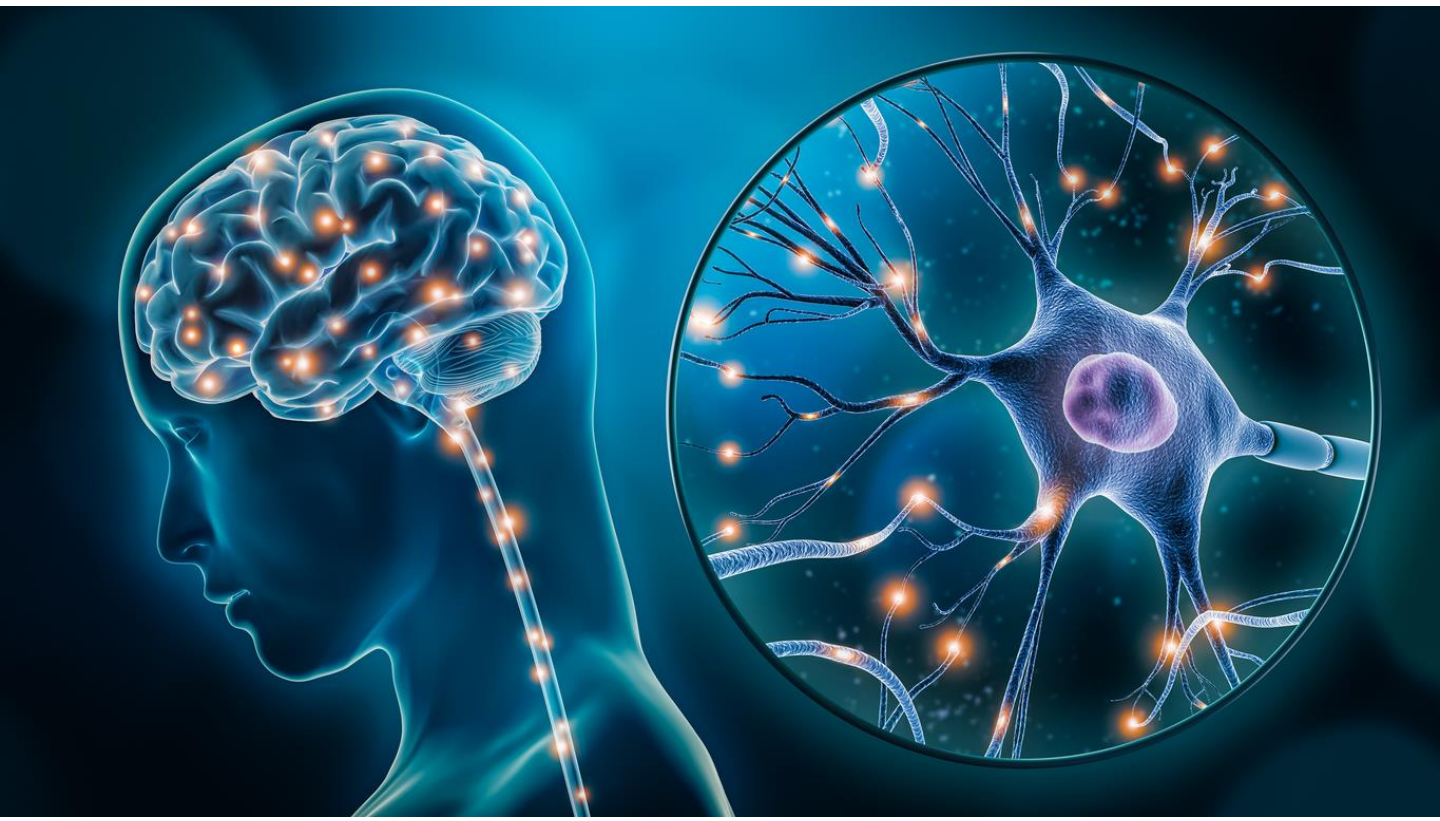
in your neuro-biomarkers levels

Your brain contains 2 types of cells:

- 86 billion **neurons** – nerve cells that transmit thoughts, feelings and management of body functions such as sleep, blood pressure, breathing, movement, etc.
- 86 billion **glia** – non-neuronal cells (i.e., not relating to nerves), which support and influence the way we process information.

The information required for thoughts, feelings and management of body functions is passed from one neuron to another using natural substances - chemical messengers, which are neuro-biomarkers of the mental health and resilience. These substances influence neurons in primarily two ways: **excitatory or inhibitory**.

An optimal balance of neuro-biomarkers is required for the maintenance of mental health and healthy functioning of our thoughts, feelings and body functions. We measure your levels and provide detailed information on how to improve them using personalized nutrition – with food that can optimize your mental strength and resilience.



2 WHY TESTING NEURO-BIOMARKERS IN URINE?

It is time to embrace the new frontier of science

Previously we believed:

- The gold standard method of analyzing mental health is cerebrospinal fluid, or other methods that focus exclusively on the central nervous system.
- Urinary levels of neuro-biomarkers change from day to day and are not reliable.
- Nutrition is not relevant to mental health – the brain-blood barrier (BBB) prevents the absorption of the nutrients we eat.
- There is a shortage of research on the topic.

Today's science

Clinical studies have shown that the concentrations of neuro-biomarkers in the urine strongly correlate with mental health and are therefore a valid tool for mental health analysis.

Levels of neuro-biomarkers in the urine are stable and suitable to analyze mental health (but some foods need to be avoided before the test).

Nutrition is a foundation of mental health, strength and resilience. The sophisticated carrier systems are used to transport nutrients (amino acids, vitamins, minerals) into the brain and transport the toxins out of it through the blood-brain barrier.

Research on neuro-biomarkers in the urine, respectively mental health and nutrition is becoming abundant (46,000 resp 15,000 studies on US National Library of Medicine).

For more information on the validation of biomarkers in urine for the assessment of mental health and the transport systems through the blood-brain barrier, see our References, section "Background".

2 YOUR NEURO-BIOMARKERS LEVELS (1/2)

URINARY INHIBITORY NEURO-BIOMARKERS

Neuro-biomarker name	Optimal range	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
Tryptophan	3970-8450 µg/g		4402 µg/g	
Serotonin	61.0-103.2 µg/g			107.0 µg/g
5-HIAA (metabolite)	2988-5850 µg/g		5497 µg/g	
GABA	193-367 µg/g		245 µg/g	
Glycine	61-159 mg/g		101 mg/g	
Taurine	7.1-293.1 mg/g	4.8 mg/g		

URINARY EXCITATORY NEURO-BIOMARKERS

Neuro-biomarker name	Optimal range	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
Glutamate	1515-2710 µg/g			8115 µg/g
Glutamine	37-71 mg/g		56 mg/g	
Histidine	19.7-58.4 mg/g		22.0 mg/g	
Histamine	5.2-15.3 µg/g		9.6 µg/g	
N-Methylhistamine (metabolite)	79-140 µg/g	62 µg/g		
PEA	5.3-16.1 µg/g		9.2 µg/g	
Tyrosine	4790-10278 µg/g		5634 µg/g	
Tyramine	279-588 µg/g	149 µg/g		
Dopamine	144-240 µg/g	77 µg/g		
DOPAC (metabolite)	658-1449 µg/g		1252 µg/g	
HVA (metabolite)	3737-7048 µg/g			8121 µg/g

2 YOUR NEURO-BIOMARKER LEVELS (2/2)

URINARY EXCITATORY NEURO-BIOMARKERS

Neuro-biomarker name	Optimal range	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
Norepinephrine (pooled)	15.0-28.1 µg/g	7.4 µg/g		
Normetanephrine (metabolite)	17.9-31.7 µg/g		20.0 µg/g	
Epinephrine (pooled)	1.4-4.2 µg/g	0.5 µg/g		
Ratio: Norepi/Epi	5.2-13.7			14.8
VMA (metabolite)	2580-4766 µg/g		3358 µg/g	

URINARY INFLAMMATORY NEURO-BIOMARKERS

Neuro-biomarker name	Optimal range	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
Kynurenine (metabolite)	257-960 µg/g	<73 µg/g		
Kynurenic Acid (metabolite)	639-1200 µg/g	522 µg/g		
3-Hydroxykynurenine (metabolite)	147-467 µg/g	98 µg/g		
Xanthurenic Acid (metabolite)	694-1510 µg/g		787 µg/g	

URINARY CREATININE

Creatinine	Optimal range	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
Creatinine (pooled)	0.3-2.0 mg/mL		0.48 mg/mL	

2 A. SLEEP QUALITY AND LEVELS

The following imbalances could contribute to sleep issues:

Neuro-biomarker name	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
Tryptophan		4402 µg/g	
Serotonin			107.0 µg/g
GABA		245 µg/g	
Glycine		101 mg/g	
Taurine	4.8 mg/g		
Glutamate			8115 µg/g
Histidine		22.0 mg/g	
Histamine		9.6 µg/g	
PEA		9.2 µg/g	
Dopamine	77 µg/g		
HVA			8121 µg/g
Epinephrine (pooled)	0.5 µg/g		

2 A. SLEEP QUALITY AND SYMPTOMS

Lower or higher values than optimal could mean experiencing some symptoms regarding sleep, according to the studies:

Neuro-biomarker name	Possible symptoms when outside of optimal range
Serotonin	Similar to too low levels of serotonin, high levels in studies can be associated with a higher anxiety and possible poorer sleep.
Taurine	In animal studies, taurine has shown to improve sleep and relieve anxiety. It seems to support the activity of GABA through activation of some of its receptors.
Glutamate	Studies suggest, that glutamate, together with GABA, regulate sleep duration, and a too low or too high level of glutamate may result in insomnia.
Dopamine	In studies, dopamine levels were the highest at 7 am and then decrease until 3 pm (lowest levels), then increase again until 7 pm, decrease until 10 pm (sleep time), and increase again until 7 am. Disturbances to this cycle and dopamine levels can interfer with our sleep/wakefulness balance and our melatonin (sleep hormone) production.
HVA	High level may be associated with sleep disturbance.
Epinephrine (pooled)	Too low level of epinephrine could be associated with sleep disorders, such as e.g. sleep apnea.

2

A. SLEEP QUALITY AND EXCITATORY / INHIBITORY NEURO-BIOMARKERS

Neuro-messengers/biomarkers, chemical substances in your brain and body, manage your sleep through several channels, including:

- Waking up
- Falling asleep
- Ability to sleep deeply and undisturbed
- Ability to stay asleep

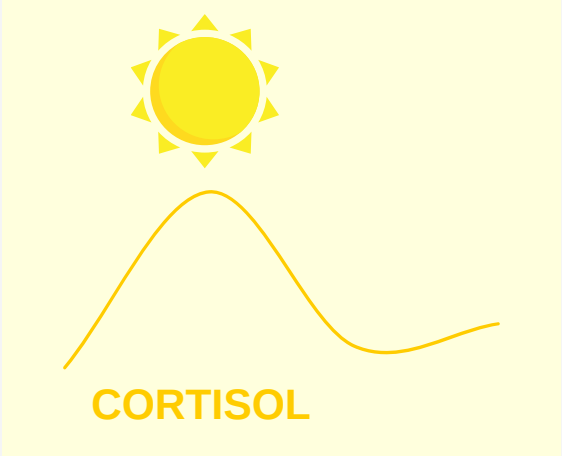
Your neuro-biomarkers can be divided into 2 critical groups:

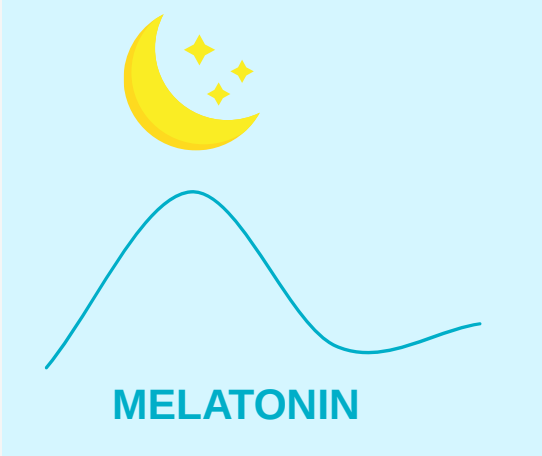
Inhibitory neuro-biomarkers make you feel calm and relaxed – your natural off switch. These messengers' levels should be low during the day and high at night.

Excitatory neuro-biomarkers make you feel activated and energized – your natural "on switch". These messengers' levels should be high during the day and low in the evening.

But that's not all.

Following a similar pattern, the stress hormone cortisol must also be active during the day and decrease at night to help you recover. In contrast, you need sufficient production of the sleep hormone melatonin at night and a decrease in your levels during the day.





2 B. STRESS/BURNOUT AND LEVELS

The following imbalances could contribute to stress and burnout:

Neuro-biomarker name	Your level: Lower than optimal	Your level: Optimal	Your level: Higher than optimal
GABA		245 µg/g	
Taurine	4.8 mg/g		
Glutamate			8115 µg/g
Histamine		9.6 µg/g	
PEA		9.2 µg/g	
Tyrosine		5634 µg/g	
Dopamine	77 µg/g		
Norepinephrine (pooled)	7.4 µg/g		
Epinephrine (pooled)	0.5 µg/g		
Kynurenic Acid	522 µg/g		

2 B. STRESS/BURNOUT AND SYMPTOMS

Lower or higher values than optimal could mean experiencing some symptoms regarding stress management, according to the studies:

Neuro-biomarker name	Possible symptoms when outside of optimal range
Taurine	Taurine slows down the release of stress hormones as epinephrine (adrenaline), prevents "erratic" firing of neurons and therefore plays a neuroprotective role against stress. A nutrition high on taurine is believed to be one of the reasons of longevity in Japan.
Glutamate	High levels of glutamate could be associated with stress and burn out.
Dopamine	Any dopamine imbalances - high or low level - could be associated with stress or chronic stress and burn out. Stressful events and increased concentrations of dopamine in the prefrontal cortex (PFC - the executive management of the brain) may have a negative impact on working memory and executive functions.
Norepinephrine (pooled)	Norepinephrine has a similar effect on the brain as epinephrine has on the body: cognitive alertness and intense awareness of surroundings, mobilising the brain to take actions. Contstant stress and an increased production of norepinephrine can contribute to anxiety, depression, digestive disorders, heart disease, sleep problems, weight gain, and cognitive impairment. The levels can be too high or too low depending on the stage of the stress or burn out.
Epinephrine (pooled)	As norepinephrine, epinephrine contributes to increased heart rate, elevated blood pressure, deep breathing, and other sensations experienced in stress. High levels could be associated with stress, low levels may be associated with chronic stress.
Kynurenic Acid	KYNA has a neuroprotective role, e.g. by reducing the exitotoxicity of glutamate. Too low levels of KYNA may impair this important function in stress or burn out situations.

2 B. STRESS/BURNOUT AND DOPAMINE

STRESS IS NORMAL

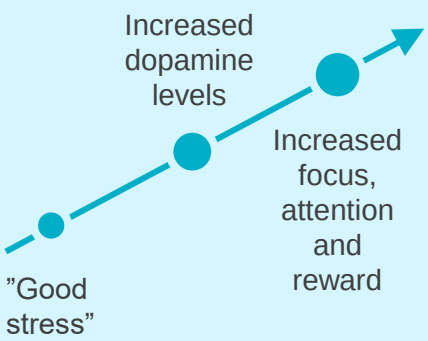
Stress – our physical and emotional response to life changes – is a normal and familiar phenomenon to us humans. Our ability to respond to stress is critical to our development, equipping us to deal with the challenges of daily life. So, at what point does stress become a problem? Let's look at what happens to our neuro-messengers when we are experiencing stress.

GOOD AND BAD STRESS – WHAT HAPPENS IN YOUR BODY?

Good stress is:

- **novel**
- **brief**
- **controllable**

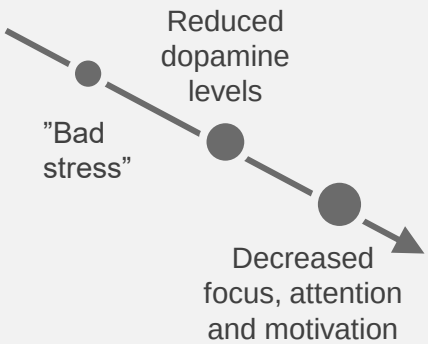
DOPAMINE INCREASE = reward



Bad stress is:

- **chronic**
- **long-lasting**
- **uncontrollable (or perceived as such)**

DOPAMINE DECREASE = risk of depression & burnout



2 B. STRESS/BURNOUT AND EPINEPHRINE

IS IT JUST PROLONGED STRESS OR IS IT BURNOUT?

The answer lies in our emotions – which reflect different neuro-biomarkers levels. During burnout, we can no longer fight or flight.

STRESS ▶ **CHRONIC STRESS** ▶ **BURNOUT**

- **Panicky**
- **Anxious**
- **Fatigued**
- **Hyperactive**
- **Irritable**
- **Waking up too early or insomnia**

- **Apathetic**
- **Disengaged**
- **Unmotivated**
- **Cynical**
- **Excessive sleep but waking up physically and mentally exhausted**

THE ROLE OF EPINEPHRINE (ADRENALINE)

Normal level of epinephrine

Epinephrine production increases to handle stressful situations then returns to a normal level when stress is managed.

Normal level of epinephrine

Prolonged/chronic stress, constant overthinking, anxiety, and worry stimulate a release of epinephrine when you don't need it — leading to an eventual decrease of epinephrine associated with burnout and depression over time.

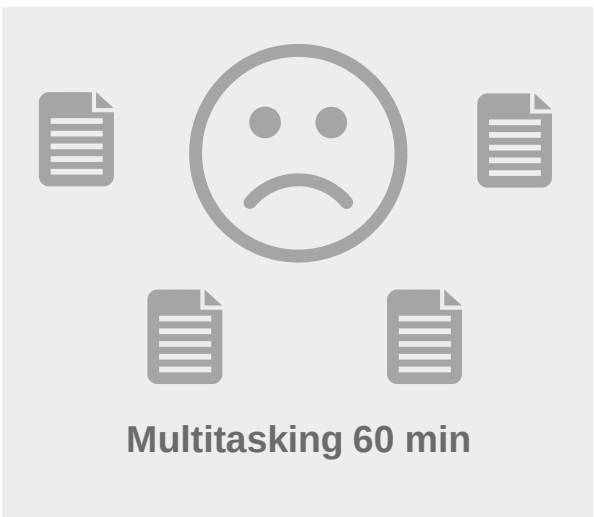
2 B. STRESS or BURNOUT – how to recognize and reduce

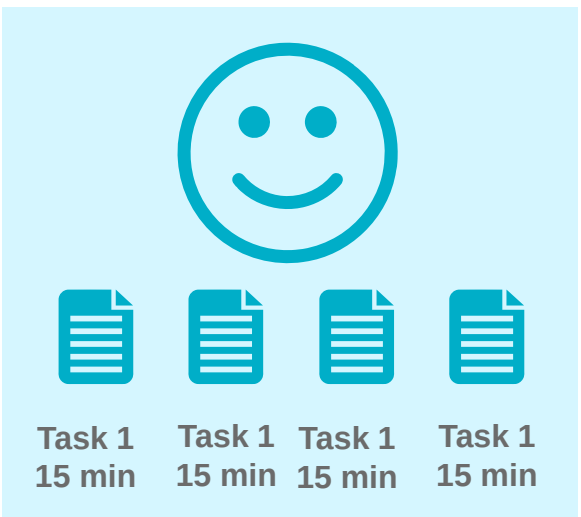
YOU THOUGHT A BURNOUT COMES FROM WORKING TOO MUCH?

Not exactly. This model (Christina Maslach) can be helpful to recognize and avoid entering a burnout situation:

1. **Work overload**
2. **Alienation and tribes instead of community and teams**
3. **Insufficient reward**
4. **Absence of fairness**
5. **Lack of control**
6. **Values don't match anymore**

We can also reduce a cognitive overload as stress factor. Switching to monotasking (working on 1 task during a shorter session) rather than combining several activities in parallel, can help us to reduce a cognitive overload in form of multitasking, which, according to Daniel J. Levitin's work, has serious physiological effects on the brain. Multitasking "has been found to increase the production of the stress hormone cortisol as well as the fight-or-flight hormone adrenaline."





2 C....J. NOT COVERED IN THIS SAMPLE REPORT

3

Your personalized nutrients

The purpose of this section is to inform you about methods to bring your neuro-messengers in balance. Food is one of the safest and most sustainable ways to achieve this. But as only you know your medical conditions, allergies, the rest of your daily food intake and any other dependencies, please consider the overall context of your health while deciding the most suitable course for you and consult your medical specialist regarding your health concerns.

3 YOUR NUTRIENTS

To balance your low and high levels of neuro-biomarkers, consider foods containing the following nutrients which are necessary for their production or breakdown:

- B2
- B6
- Copper
- Cysteine
- DOPA
- GABA
- Iron
- L-Theanine
- Methionine
- Molybdenum
- Phenylalanine
- Taurine
- Tyrosine
- Vitamin C

Add food containing your required nutrients daily from a choice of 4 different baskets, as proposed on the following pages:

BASKET I.
Nuts, seeds, roots, herbs

BASKET II.
Legumes, whole grains

BASKET III.
Vegetables, fruits

BASKET IV.
Animal sources

We recommend food choices that are as diversified as possible.

Basket I: Nuts, seeds, roots, herbs

Your required nutrients daily: only 1 option is required to get more of your needed nutrient, but you may add more if you wish – please see the appendix for more information

- B2
- B6
- Copper
- Cysteine
- DOPA
- GABA
- Iron
- L-Theanine
- Methionine
- Molybdenum
- Phenylalanine
- Taurine
- Tyrosine
- Vitamin C

50 g hemp seeds (Mthe)	50 g brazilnuts (Mthe, Cu)
50 g pumkins seeds (Mthe)	50 g chia seeds (Mthe, Cys)
50 g sesame seeds (Mthe)	50 g pistachio nuts (Mthe)
25 g peanuts (Mthe, Cys)	50 g (4 Tbsps) pistachio nuts (B6)
50 g sunflower seeds (B6)	50 g hummus (B6)
25 g peanut butter (B6)	25 g (2 Tbsps) sunflower seeds (Cys)

Basket II: Legumes, whole grains, mushrooms

Your required nutrients daily: only 1 option is required to get more of your needed nutrient, but you may add more if you wish – please see the appendix for more information

- B2
- B6
- Copper
- Cysteine
- DOPA
- GABA
- Iron
- L-Theanine
- Methionine
- Molybdenum
- Phenylalanine
- Taurine
- Tyrosine
- Vitamin C

- 50 g tofu (Mthe, Cu)
- 100 g tofu (Mthe, Fe, Tyr, Phe)
- 100 g falafel (Mthe, Cys, Phe)
- 100 g of cooked soybeans (edamame) (B6)
- 100 g cooked lupin beans (Cys, Tyr)
- 100 g cooked black-eyed beans (Mo)
- 100 g wholegrain oat (Mthe, Cys, Fe)
- 100 g cooked soybeans (edamame) (Mthe, Cys, Tyr, B2)
- 100 g cooked lentils (B6, Fe)
- 100 g dried shiitake mushrooms (Cys, B2)
- 100 g cooked white beans (Fe, Phe)
- 1 slice wholegrain bread (33 g) (Mo)

3 YOUR NUTRITION III

Basket III: Vegetables, fruits

Your required nutrients daily: only 1 option is required to get more of your needed nutrient, but you may add more if you wish – please see the appendix for more information

- B2
- DOPA
- Methionine
- Tyrosine
- B6
- GABA
- Molybdenum
- Vitamin C
- Copper
- Iron
- Phenylalanine
- Cysteine
- L-Theanine
- Taurine

- 50 g dried spirulina seaweed (Mthe)
- 4 cloves (25 g) garlic (B6)
- 50 g sun-dried tomatoes (Cys, Fe, B2)
- 1 medium baked potato with skin (173 gram) (Mo)
- 100 g (2-3 sheets) Japanese nori seaweed (Tau)
- 50 g seaweed spirulina dried (Phe)
- 1 baked potato (173 g) (B6)
- 100 g cooked spinach (B6, Tyr)
- 100 g potatoes (Fe)
- 1 medium banana 119 g (Mo)
- 100 g sun-dried tomatoes (Tyr)
- 50 g tomatoes (Cu)

Basket IV: Animal Sources

Your required nutrients daily: only 1 option is required to get more of your needed nutrient, but you may add more if you wish – please see the appendix for more information

- B2
- B6
- Copper
- Cysteine
- DOPA
- GABA
- Iron
- L-Theanine
- Methionine
- Molybdenum
- Phenylalanine
- Taurine
- Tyrosine
- Vitamin C

50 g parmesan or gruyere cheese (Mthe, Cys, Tyr)	50 g goat cheese (Mthe, Fe, Cu)
50 g mozarella cheese (Mthe, Tyr)	50 g feta cheese (Mthe)
100 g cooked wild salmon (Mthe, B6, Cys, Tau, Phe, B2)	100 g grilled or roasted chicken breast (B6)
100 g cooked blue mussels (Fe)	100 g roasted chicken wings or legs (Fe)
150 g yoghurt (Mo)	1 cup milk (Mo)
100 g cooked mussels (Tau)	100 g scallops (Tau)

3 YOUR PERSONALIZED NUTRIENTS SUMMARY (1/4)

This table summarize all 4 baskets and all nutrient options to balance your low- and high-level neuro-biomarkers.

What to add daily? Only 1 option per row is required to get more of your needed nutrient (you may add more if you wish – for the nutrient content please see the appendix).

Neuro-biomarkers addressed	Basket I: Nuts, seeds, roots, herbs	Basket II: Legumes, grains, mushrooms	Basket III: vegetables, fruits	Basket IV: Animal sources
B2	25 g (2 Tbsps) almonds, 25 g sunflower seeds, 50 g fennel seeds	100 g dried shiitake mushrooms, 100 g cooked soybeans (edamame)	50 g sun-dried tomatoes, 100 g kale	25 g goat cheese, 25 g feta cheese, 25 g Rochefort cheese, 100 g cooked wild salmon
B6	50 g (4 Tbsps) pistachio nuts, 50 g sunflower seeds, 50 g hummus, 25 g peanut butter	100 g cooked lentils, 100 g of cooked soybeans (edamame)	1 baked potato (173 g), 4 cloves (25 g) garlic, 100 g cooked spinach	100 g cooked wild salmon, 100 g grilled or roasted chicken breast
Copper	50 g cashew nuts, 50 g hazelnuts, 50 g brazilnuts	50 g cooked lentils, 50 g tofu, 50 g cooked kidney beans	50 g tomatoes, 50 g bell peppers, 50 g potatoes	50 g goat cheese
Cysteine	25 g (2 Tbsps) sunflower seeds, 25 g cashewnuts, 50 g chia seeds, 25 g sesame seeds, 25 g flax seeds, 25 g peanuts, 25 g pistachio nuts	100 g wholegrain oat, 100 g dried shiitake mushrooms, 100 g cooked soybeans (edamame), 100 g cooked lupin beans, 100 g falafel	50 g sun-dried tomatoes	50 g parmesan or gruyere cheese, 100 g cooked wild salmon

Please don't be surprised if you see the same substance recommended for both low and high levels of a given neuro-biomarker. Sometimes we need the same substance to both produce a neuro-biomarker at low levels and to metabolise it (break it down) at high levels.

3 YOUR PERSONALIZED NUTRIENTS SUMMARY (2/4)

Neuro-biomarkers addressed	Basket I: Nuts, seeds, roots, herbs	Basket II: Legumes, grains, mushrooms	Basket III: vegetables, fruits	Basket IV: Animal sources
DOPA		100 g fresh or frozen cooked green fava beens (Vicia faba), 100 g cooked Mucuna Pruriens (Velvet beans)		
GABA	2 cups (2 big tea bags) Japanese green GABA tea			
Iron	50 g of tahini (sesame paste used in e.g., hummus), 25 g (2 Tbsps) pumpkin seeds, 25 g sunflower seeds	100 g tofu, 100 g wholegrain oat, 100 g cooked white beans, 100 g cooked lentils	50 g sun-dried tomatoes, 100 g potatoes	50 g goat cheese, 100 g cooked blue mussels, 100 g roasted chicken wings or legs
Methionine	50 g hemp seeds, 50 g brazilnuts, 50 g pumkins seeds, 50 g chia seeds, 50 g sesame seeds, 50 g pistachio nuts, 25 g peanuts	50 g tofu, 100 g wholegrain oat, 100 g tofu, 100 g cooked soybeans (edamame), 100 g falafel	50 g dried spirulina seaweed	50 g parmesan or gruyere cheese, 50 g goat cheese, 50 g mozarella cheese, 50 g feta cheese, 100 g cooked wild salmon

3 YOUR PERSONALIZED NUTRIENTS SUMMARY (3/4)

Neuro-biomarkers addressed	Basket I: Nuts, seeds, roots, herbs	Basket II: Legumes, grains, mushrooms	Basket III: vegetables, fruits	Basket IV: Animal sources
Molybdenum	50 g whole almonds, 50 g peanuts	100 g cooked black-eyed beans, 1 slice wholegrain bread (33 g)	1 medium baked potato with skin (173 gram), 1 medium banana 119 g	150 g yoghurt, 1 cup milk
Phenylalanine	25 g almonds, 25 g peanuts, 25 g peanut butter, 50 g pistachio nuts	100 g cooked soy beans (edamame), 100 g tofu, 100 g falafel, 100 g cooked white beans, 100 g cooked red kidney beans	50 g seaweed spirulina dried	100 g cooked tuna, 100 g cooked wild salmon
Taurine			100 g (2-3 sheets) Japanese nori seaweed	100 g cooked mussels, 100 g scallops, 100 g cooked wild cod, 100 g cooked wild salmon, 100 g roasted chicken wings or legs (dark meat)
L-Theanine	Several cups black or green tea			

3 YOUR PERSONALIZED NUTRIENTS SUMMARY (4/4)

Neuro-biomarkers addressed	Basket I: Nuts, seeds, roots, herbs	Basket II: Legumes, grains, mushrooms	Basket III: vegetables, fruits	Basket IV: Animal sources
Tyrosine	100 g chia seeds, 25 g cashew nuts, 25 g almonds, 25 g sesame seeds, 25 g pumpkin seeds	100 g tofu, 100 g cooked lupin beans, 100 g cooked soybeans (edamame)	100 g sun-dried tomatoes, 100 g cooked spinach	50 g parmesan or gruyere cheese, 50 g mozarella cheese
Vitamin C	50 g chestnuts		50 g of guavas, 50 g raw or steamed green, yellow or red bell peppers, 50 g of blackcurrants, 100 g raw kale or broccoli, 50 g grapefruit juice, 1 Kiwi (69 g)	

3 WHAT TO DO NEXT?

Start fresh every day

If you've been unable to consume the recommended nutrients for a day or more, "topping up" by consuming more than the recommended daily value the day after probably doesn't help much. It's important to maintain a varied diet, and your body and brain can only absorb a certain quantity of nutrients at a time. Remember the analogy of a shuttle carrying nutrients to your brain? That shuttle has the same limited number of seats each day...

Avoid caffeine in tea and coffee with your meals

While consuming your important nutrients, please eliminate any obstacles to their absorption, like caffeine. Solution? Enjoy your tea or coffee in between meals or opt for a decaffeinated version.

Provide your stomach with the necessary acids and enzymes

While your cells work best when they are slightly alkaline (pH 7.32-7.36), your stomach must be acidic (around 1.3 to 2.2 on average) to kill harmful bacteria and microorganisms and aid the digestion and absorption of necessary nutrients.

Here's how to determine if your stomach is not acidic enough:

Do you feel tired after eating? Do you experience gas, bloating, belching and cramping 1 hour after a meal? If so, your stomach may be struggling with insufficient acid and enzymes to break down the food.

You can influence the quality of your digestion by increasing your intake of probiotics and fermented food, as well as eating fresh or juiced ginger with your meals.

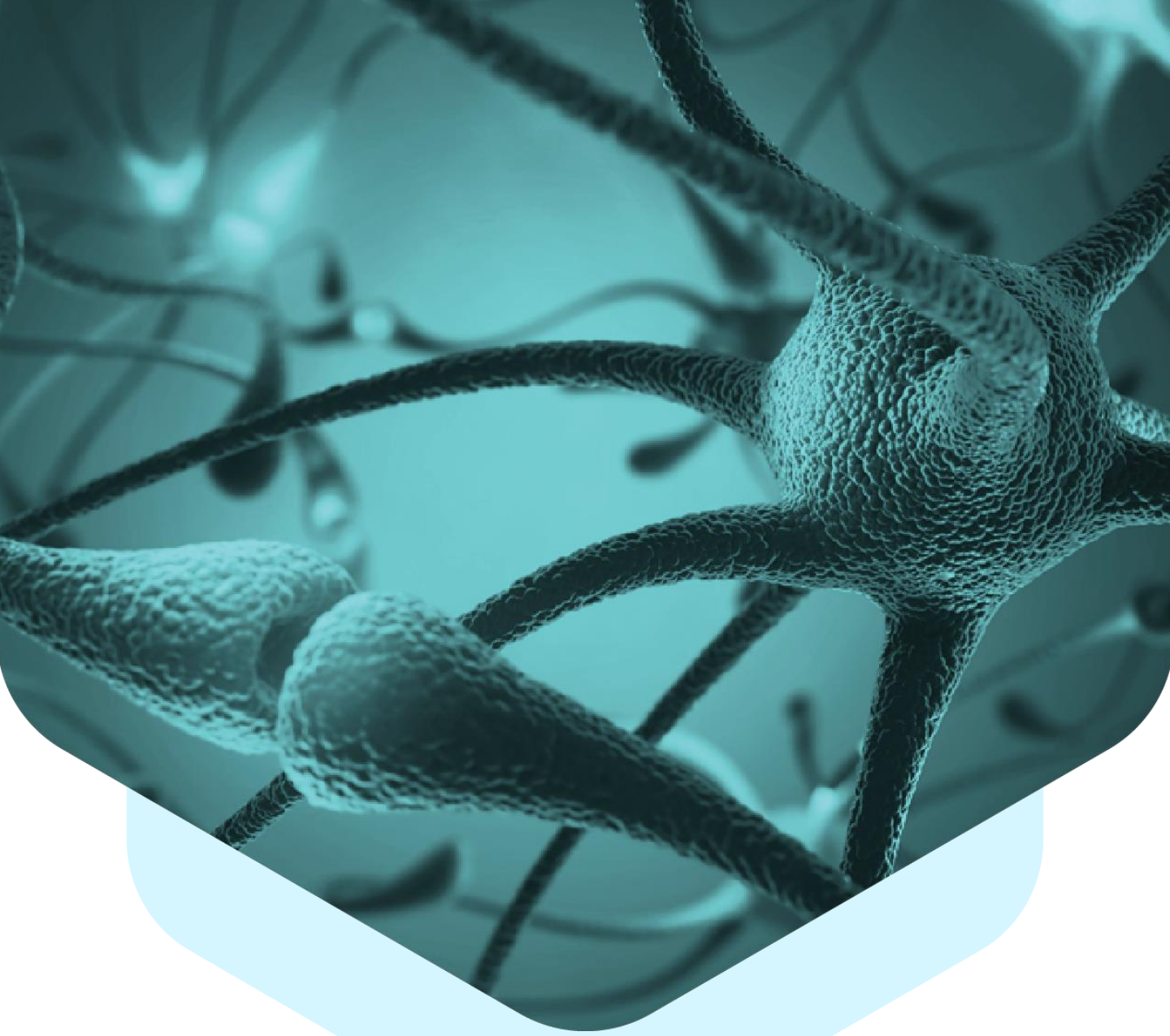
Stable supply of glucose and oxygen instead of sugar chocks

A balanced nutrition is the key. If you don't eat enough (carbohydrates, for example), your brain can't function normally, and if you eat too much sugar or carbohydrates, it is killing your brain cells. How much is enough? At least 100 g daily, but no more than 4-6 g of carbohydrates per 1 kg of body weight, of which no more than 50 g should be sugar. Fresh air and exercise stimulate blood circulation and enable oxygen transport to the brain.

Observe your well-being

After regularly monitoring your well-being for 2-6 months, you can measure your progress using our follow-up product. Please keep in mind that our report is intended for informational and nutritional purposes only. For diagnosis or healing, please contact a physician.

We hope that with this information, you feel empowered to take your mental strength and resilience to the next level and enjoy improved mental health. We wish you a successful journey to achieve a balanced and happy mind!



Appendix

PERSONALIZED NUTRIENTS AND YOUR LOW NEURO-BIOMARKERS

One way of increasing your neuro-biomarker levels is by ensuring your body has enough of the 3 types of nutrients required to produce them:

1. **Precursors** – the building blocks of neuro-messengers. Luckily, most neuro-messengers require only protein or specific amino acids.

2. **Co-factors** – enable the production of neuro-messengers in the body. These are primarily enzymes and vitamins.

3. **Probiotics** – to ensure your implemented changes take effect, it's essential to cultivate a healthy environment in your digestive system. To absorb the nutrients in your food, you need a rich flora of healthy bacteria and other microorganisms called probiotics.

Not all the substances we need are available in food. Some of them are simply enzymes made in our bodies. Therefore, we can divide them as follows:

NON-ESSENTIAL

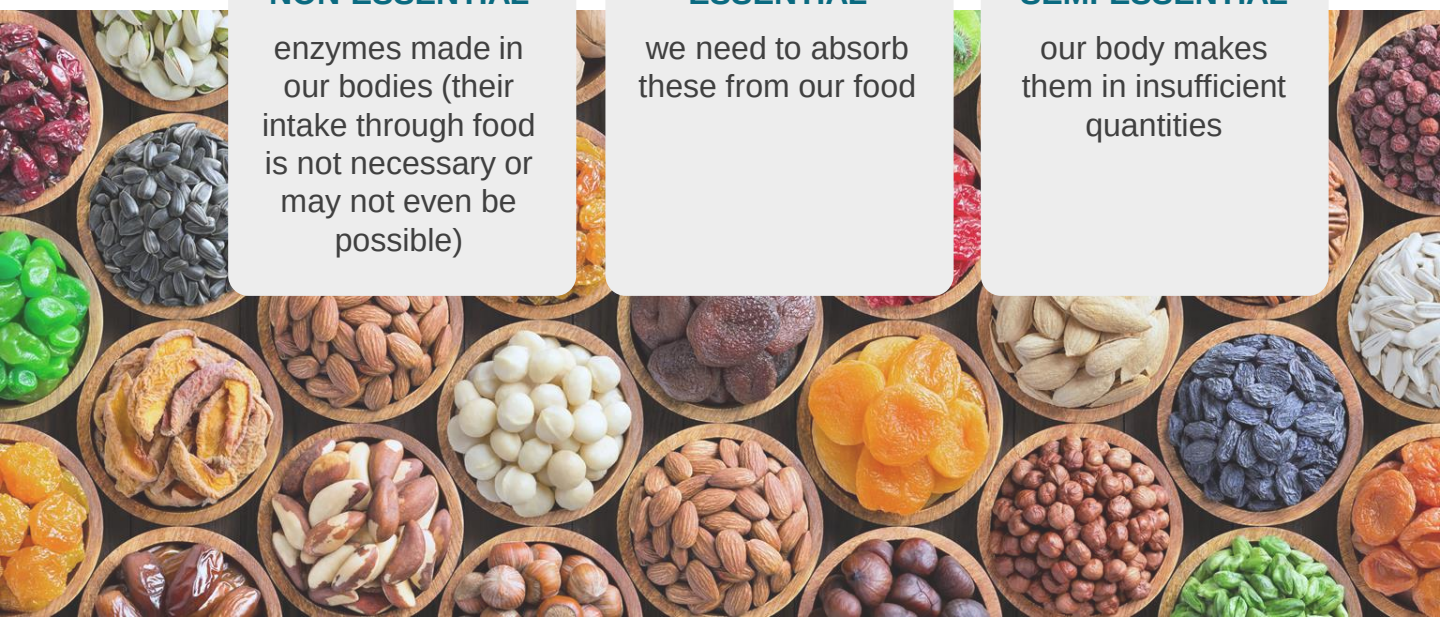
enzymes made in our bodies (their intake through food is not necessary or may not even be possible)

ESSENTIAL

we need to absorb these from our food

SEMI-ESSENTIAL

our body makes them in insufficient quantities



PERSONALIZED NUTRIENTS AND YOUR HIGH NEURO-BIOMARKERS

You have several options for lowering your excess neuro-biomarker levels, including

1. Reducing consumption of the precursors and co-factors needed to produce a neuro-messenger. This option can be problematic, as the same building blocks and co-factors are sometimes required to produce numerous useful neuro-messengers. What if you have a shortage of PEA but an excess of tyrosine, which both share the precursor phenylalanine? In that case, reducing the consumption of phenylalanine in your food could lead to an even greater shortage of PEA. For that reason, this method requires careful evaluation.

2. Increasing your metabolism of a neuro-messenger. If a neuro-messenger is broken down and used by the body in higher quantities, this could lead to lower stored levels. In fact, sometimes excess levels of a biomarker may be caused by a shortage of the components/co-factors required for its metabolism.

3. Countering a neuro-biomarker with another biomarker. For example, increasing an inhibitory (calming) neuro-biomarker to counter excess levels of excitatory neuro-biomarkers.

4. Neutralising the negative effects of an excess neuro-biomarkers with another substance. For example, countering excess glutamate, which can lead to toxic effects on brain nerve cells and oxidative stress, with an increase in taurine, which protects healthy cells by functioning as a potent antioxidant to reduce oxidative stress.

5. Adding another substance to lower the level of a certain neuro-biomarker or hormone. For example, several studies suggest that ashwagandha root can decrease levels of the stress hormone cortisol.

While bringing your neuro-biomarkers in balance to optimise your mental health, we recommend maintaining a diversified, varied daily food intake, while adding/adjusting nutrients tailored to your personal shortages/surpluses.

Finally, our objective is to propose a plan to balance your neuro-biomarkers. Food is one of the safest and most sustainable ways to achieve this. But as only you know your medical conditions, allergies, the rest of your daily food intake and any other dependencies, please consider the overall context of your health and consult your medical specialist if you have any concerns regarding the suitability of this solution.

ADDITIONAL DATA - tryptophan

Increasing low levels of serotonin by adding tryptophan to daily nutrition; Since tryptophan is less abundant than most other amino acids and competes for space on the same transportation ”shuttle” to your brain, its absorption can be aided by eating carbs concurrently.
RDA*: 4-6 mg per 1 kg of body weight

Options	Nuts, seeds, roots, herbs	Legumes, grains, mushrooms	Vegetables, fruits	Animal sources
OPTION 1	50 g dried chia seeds	Or 100 g tofu	Or 100 g cooked spinach	Or 100 g cooked wild salmon
mg of tryptophan	356 mg	235	101 mg	306 mg
Suggestions	Soak in your choice of milk overnight to create chia pudding, or buy a readymade chia pudding	Fry or bake	Eat as a creamy soup or add to your meals	Bake or fry
OPTION 2	50 g pumpkin seeds	Or 100 g cooked edamame/ black-eyed peas	Or 100 g sun-dried tomatoes	Or 100 g roasted boneless pork chop
mg of tryptophan	288 mg	150/94 mg	104 mg	858 mg
Suggestions	Add to yoghurt, porridge, salads, breads or other snacks	Eat as a snack/ Add to stews, curries or chilies	Add to salads or hot meals	Roast or fry as a main dish
OPTION 3	50 g roasted peanuts	Or 100 g whole-grain oats		Or 50 g mozzarella cheese
mg of tryptophan	136 mg	210 mg		255 mg
Suggestions	Eat as a snack or add to salads or hot meals	Add to yoghurt or make into porridge		Add to salads or eat as a snack

RDA* – Recommended Daily Allowance

ADDITIONAL DATA - taurine

Increasing low levels of taurine and decrease/counter high levels of glutamate
RDA*: not established but an average intake is 400 mg/day

Options	Nuts, seeds, roots, herbs	Legumes, grains, mushrooms	Vegetables, fruits	Animal sources
OPTION 1			100 g, i.e. 2-3 sheets of Seeweed (japanese nori)	Or 100 g cooked mussels/ scallops/ wild cod/wild salmon
mg of taurine			80 mg per 2 sheets of Japanese nori	Up to 655/ 825/ 120/94 mg
Suggestions			Sprinkle on food or salads, eat sushi	Bake or fry
OPTION 2				Or 100 g roasted chicken wings or legs (dark meat)
mg of taurine				170 mg
Suggestions				Fry or bake

RDA* – Recommended Daily Allowance

OTHERS ADDITIONAL DATA NOT COVERED IN THIS SAMPLE REPORT

HEALTHY-LONGER

Personalized neuro-nutrient program

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    - Design: 91 depressed & anxious women
    - Biomarker analysis: urinary cortisol, norepinephrine, & epinephrine
    - Conclusion #1: Depression and anxiety, issues related to central nervous system dysfunction, correlated with increased sympathetic nervous system activity as indicated by urinary cortisol & norepinephrine excretion.
    - Clinical correlation: Urinary neurotransmitter and adrenal hormone assessments may be useful to effectively address depression and anxiety due to autonomic nervous system dysfunction.
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    - Design: ELISA methodology validated against established HPLC methodology.
    - Biomarker analysis: urinary & plasma epinephrine and norepinephrine.
    - Conclusion: ELISA-based laboratory methodology was validated as a reproducible and accurate means to assess urinary epinephrine and norepinephrine.
    - Clinical Correlation: ELISA-based measures for urinary epinephrine and norepinephrine are accurate, cost effective, and efficient measures in clinical settings.

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    - Design: 37 children diagnosed with ADHD, administered methylphenidate
    - Biomarker analysis: urinary PEA
    - Conclusion #1: Urinary PEA levels were significantly greater in children who responded to methylphenidate.
    - PEA levels did not significantly change in those who did not respond to treatment.
    - Conclusion #2: Urinary measures of the neurotransmitter PEA correlated with the positive response to a centrally-acting medication.
    - Conclusion #3: Urinary PEA correlated with ADHD, an issue associated with central nervous system imbalance.
    - Clinical correlation: Urinary measurements of PEA may provide valuable insight into intervention effectiveness in patients with ADHD.

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    - Design: 15 Chronic insomniacs studied for 3 consecutive nights
    - Biomarker analysis: urinary cortisol & catecholamines
    - Conclusion #1: In chronic insomnia, an up-regulated HPA axis and sympathetic nervous system was correlated to the degree of sleep disturbance, as indicated by urinary cortisol and catecholamine excretion

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  - Design: Renal catecholamine clearance in rat was investigated through administration of a monoamine transporter inhibitor
  - Biomarker analysis: urinary & plasma epinephrine and norepinephrine.
  - Conclusion: Administration of a renal monoamine transporter inhibitor led to significant increases in plasma catecholamine levels and significant decreases in urinary catecholamine levels.
  - Clinical Correlation: Urinary catecholamine measures are reflective of circulating catecholamine levels.

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