



### Probiotic strain *L. plantarum* PS128

May balance levels of neurotransmitters serotonin and dopamine and may support gut health



### Prebiotic Inulin

Inulin selectively promotes the growth of beneficial gut microbes



### Acid resistant capsule

Safely delivers live PS128 into the intestines



### CSP bottle

Keeps the probiotic maximally active by reducing humidity and light exposure

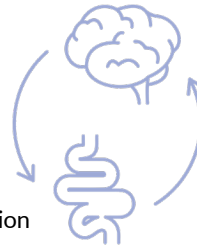
## NEURALLI™ FROM BENED LIFE

The mission of Bened Life is to unlock the power of the gut-brain axis (GBA) by developing targeted probiotics that promote mental health and support neurological conditions. Neuralli is a medical probiotic containing the unique psychobiotic strain *L. plantarum* PS128. It is formulated to address unique dietary needs of people with neurodevelopmental conditions such as Autism Spectrum Disorder (ASD).

### WHAT SCIENCE SAYS ABOUT MANAGING GUT-BRAIN HEALTH IN PEOPLE WITH NEUROLOGICAL CONDITIONS

Many individuals with neurological conditions such as ASD experience gut and brain challenges<sup>1</sup>:

Disordered sleep, anxiety and depression, which can be influenced by dysregulated levels or activity of the neurotransmitters dopamine and/or serotonin



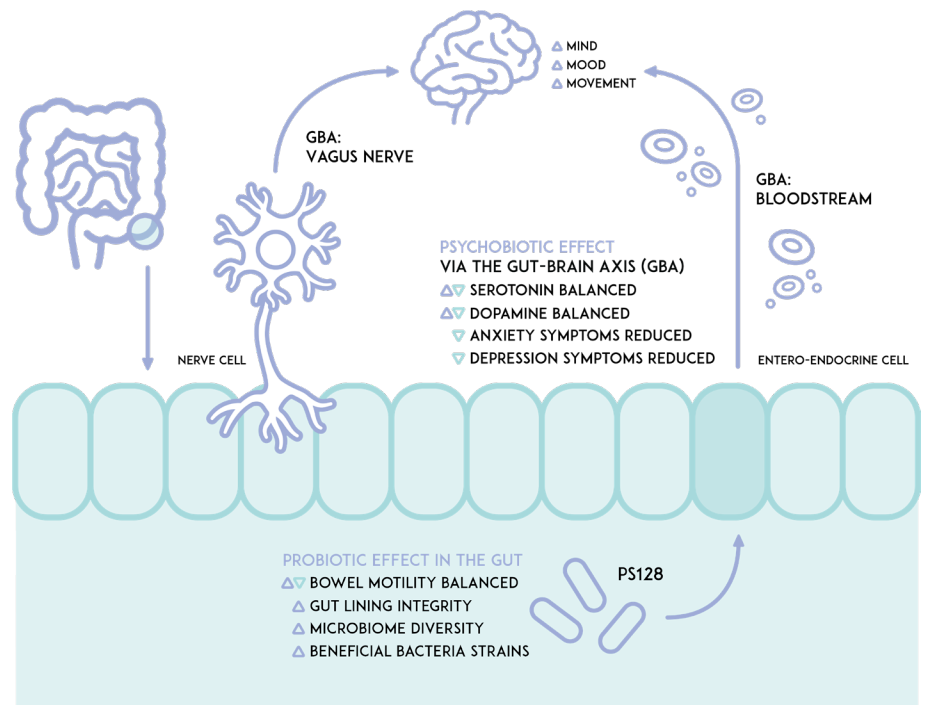
Chronic gastrointestinal symptoms such as constipation and cramping, often caused by overgrowth of pathogenic microorganisms that attack the intestinal lining

PS128 appears to balance the amount of “happy hormones” like serotonin and dopamine in the brain, as preclinical studies suggest.<sup>4</sup> PS128 appears to support gut serotonin, important for gut motility, based on a preclinical study.<sup>5</sup>

PS128 increased mucin production in the gut lining and promoted gut motility in a preclinical study.<sup>2</sup> PS128 supported healthy intestinal microbiota in triathletes.<sup>3</sup>

Neuralli works by empowering the gut microbiome to balance the health of both gut and brain via the GBA. Its main ingredient, the psychobiotic strain *L. plantarum* PS128, is the key:

### EFFECTS OF PS128 IN CLINICAL AND PRECLINICAL STUDIES



# Bened Life

## NEURALLI QUICK FACTS

➤ Neuralli should be taken with water, two capsules per day. The capsules can be opened, and the contents mixed with cold water or cold food.

➤ It's important that Neuralli be taken regularly for highest potency; however, the time of day and whether or not the two capsules are taken at the same time is up to the patient's discretion.

➤ Neuralli is designed to be taken under the supervision of a health care professional. Neuralli contains PS128, which has been taken in clinical studies alongside other interventions while participants were under physician supervision. A healthcare professional should be consulted prior to starting Neuralli with any drugs modulating serotonin and dopamine.

➤ Neuralli should be stored in the refrigerator to maximize the potency of the probiotic strain.

➤ Clinical trials with the active ingredient PS128 have not reported allergic reactions or serious adverse events. Neuralli does not contain allergens such as gluten, nuts or milk (lactose).

➤ Minor adverse effects such as gas, bloating, or changes in bowel movements are common when first taking a new probiotic. If they occur, symptoms should resolve within 1-2 weeks.



Have More Questions?

Learn more at [benedlife.com/pages/hcp](https://benedlife.com/pages/hcp)

## WHAT IS THE GUT-BRAIN AXIS (GBA)?

The GBA is how the central nervous system and the microbiota and human cells in the gut communicate with one another. Signals travel bidirectionally via the vagus nerve and from gut to brain via blood-stream release of gut-derived neurotransmitters, cytokines, and bacterial metabolites. The GBA is how the brain can cause “butterflies in the stomach”. It is also how the gut can influence systemic immune responses, neurotransmitter levels, even the pathological development of neurodegenerative diseases such as Parkinson’s and Alzheimer’s.

## WHAT IS A PSYCHBIOTIC?

A psychobiotic is a live organism (a probiotic) that, when ingested in adequate amounts, produces a health benefit in patients suffering from a psychiatric illness.<sup>6</sup> Psychobiotics may regulate neurotransmitters and proteins such as gamma-aminobutyric acid (GABA), serotonin, dopamine, glutamate and brain derived neurotrophic factor (BDNF), which play important roles in mood, cognitive function, and movement.

## EVIDENCE THAT PS128 WORKS

Two randomized double-blind placebo-controlled clinical studies have been conducted with PS128 in young people with autism,<sup>7-8</sup> one of them in combination with oxytocin treatment,<sup>8</sup> and additional studies are ongoing. A 4-week RCT showed reductions in anxiety behavior and improvements in attention, social cognition, and opposition/defiance behavior in the PS128 group.<sup>7</sup> A longer term RCT showed greater improvements when used in addition to another intervention.<sup>8</sup>

In a six-month “real-world study”,<sup>9</sup> 87% of autistic participants taking PS128 daily showed improvement, including increased shared attention, communication skills and personal autonomy.

The same 60 billion CFU dose of PS128 that is found in Neuralli has shown beneficial neurological effects when used as nutritional support in patients with autism<sup>7</sup> and Parkinson’s disease.<sup>10</sup> These results suggest that PS128 supports gut microbiome to brain signaling when taken during treatment for neurological conditions such as ASD and PD.

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