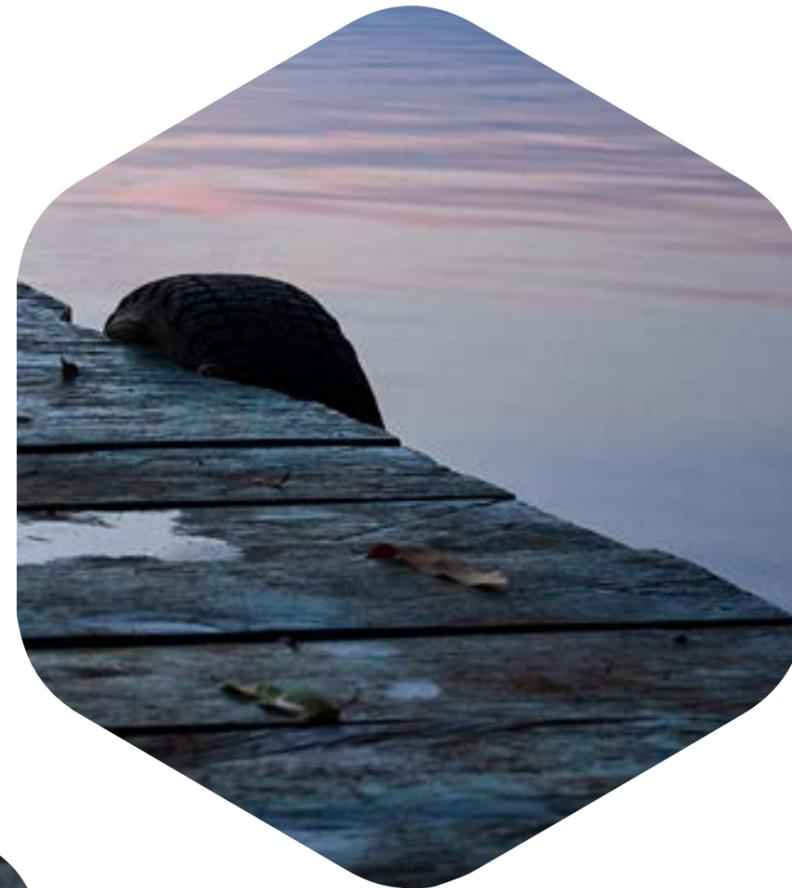




Howaru[®] CALM

**Manage stress with a
probiotic for brain health**



What's inside

17 Billion CFU | HOWARU® signature strain *L. paracasei* Lpc-37®

Key benefits

- Helps adults manage the psychological response to stress
- Supports brain health by reducing perceived stress in adults and provides stress relief by helping to balance and regulate general feelings of stress
- Promotes a balanced mood, a relaxed state of mind and supports overall mental well-being



Stress relief for a better tomorrow

Stress is a common occurrence for 65% of adults who report having some level of stress in their daily lives.¹ Aside from apprehension, daily stress can manifest itself as physical symptoms like headaches and gastrointestinal problems but can also lead to cognitive problems such as difficulty concentrating and behavioral problems such as loss of sleep – to name a few.

Consumers are searching for a natural solution and, as they recognize the critical impact the gut has on the brain, are now turning to probiotics to target stress from within. In the last five years, the dietary supplements industry has seen a 34% global uptick of new probiotic supplements that help stabilize mood and combat stress, as consumers search for supplements that boost their brain health and work to provide relief from every-day stress.²

It's time to help break the daily cycle of consumer stress. With that goal in mind, our HOWARU® experts have developed our first-ever brain health product: HOWARU® Calm (*Lacticaseibacillus paracasei* Lpc-37®). It's a unique probiotic strain, demonstrated in a clinical trial to **reduce perceived stress** and **promote a relaxed state of mind**. Now, you and your consumers can keep calm and carry on.



Click a signifier on the right to learn more about the influence of stress on the microbiota-gut-brain axis.



Stress tested

Ahead of bringing HOWARU® Calm to market, the product's featured strain – *L. paracasei* Lpc-37® – was scrupulously investigated in a clinical trial and a consumer in-home use test, to ensure its safety, quality and efficacy.

Clinical study results

To investigate the effect of *L. paracasei* Lpc-37[®] on stress and anxiety, researchers designed a randomized, double-blind, placebo-controlled clinical study. They randomly divided 120 healthy adults into two groups and instructed them to take one capsule of either 17B CFU of Lpc-37[®] or a placebo every day for five weeks.

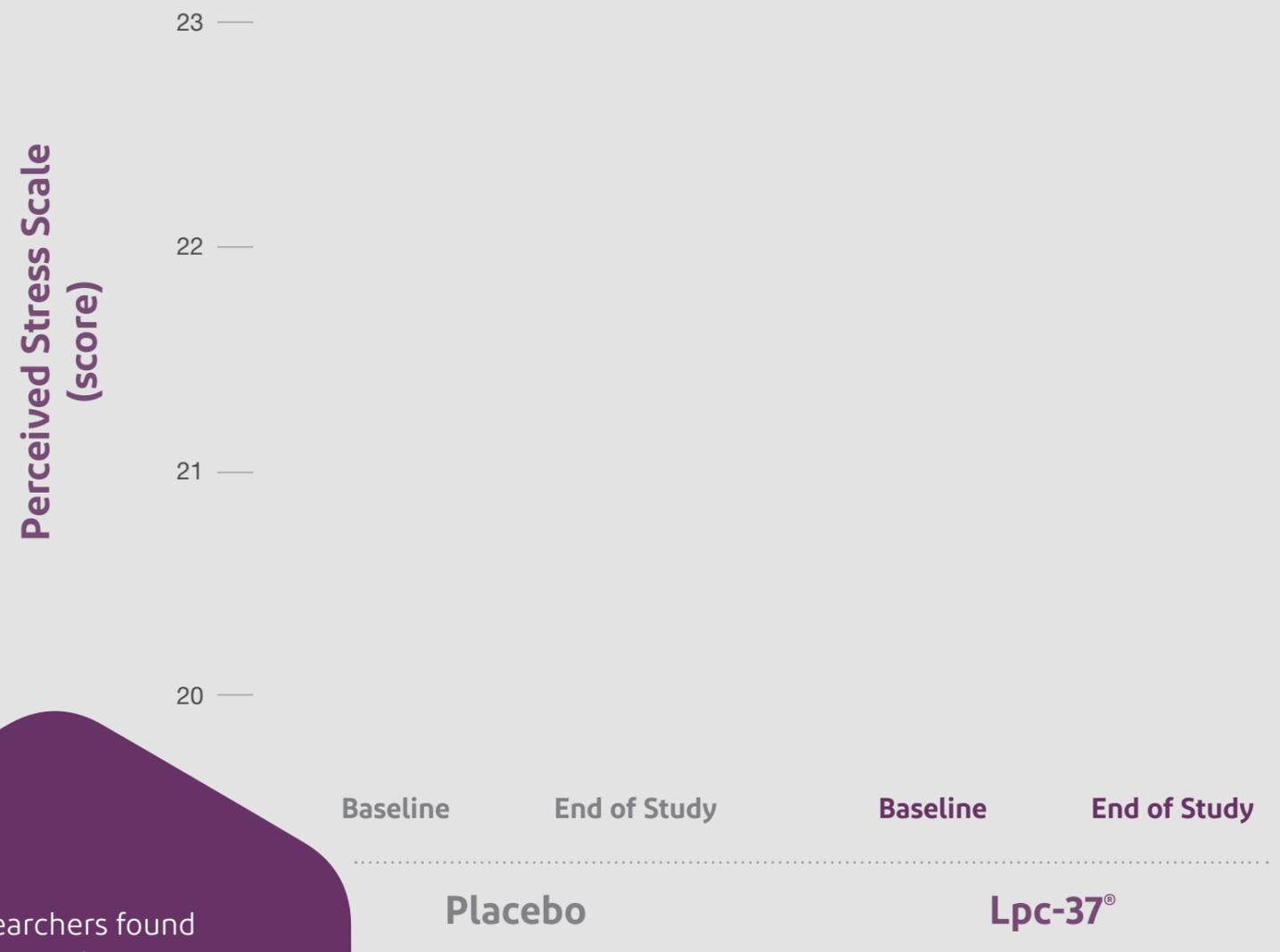
Participants' mood, stress, anxiety and biomarkers of stress were measured at baseline and at the end of the study; participants' sleep quality, mood and well-being were also measured throughout the study using a custom-designed online daily diary. At the end of the study, following the five-week intervention, participants completed the Trier Social Stress Test - considered the most valid and reliable laboratory stress test in humans. During the test, they were faced with multiple acute stressors, such as completing an interview and a mental arithmetic test under stressful conditions.

Using the validated, self-report Perceived Stress Scale, researchers measured participants' perceived stress levels at baseline and at the end of the study.

 Click on each bar of the graph to the right to reveal the results of the study.

Results: Researchers found that following the five-week intervention, perceived stress was statistically significantly reduced in those participants taking Lpc-37[®] compared to those taking placebo (n=112, p=0.048).

P=0.048



Adapted from Patterson et al. 2020.³

Consumer confirmed

To investigate consumer perception of *L. paracasei* Lpc-37[®], researchers conducted an in-home use test. They randomly divided 190 healthy yet stressed consumers into two groups and instructed them to take one capsule of either 17B CFU of Lpc-37[®] or a placebo every day for eight weeks.

Participants completed a line scale to assess stress and anxiety levels and a Likert scale to assess their stress and mental focus at baseline, after four weeks, and at the end of the study, after eight weeks of intervention.

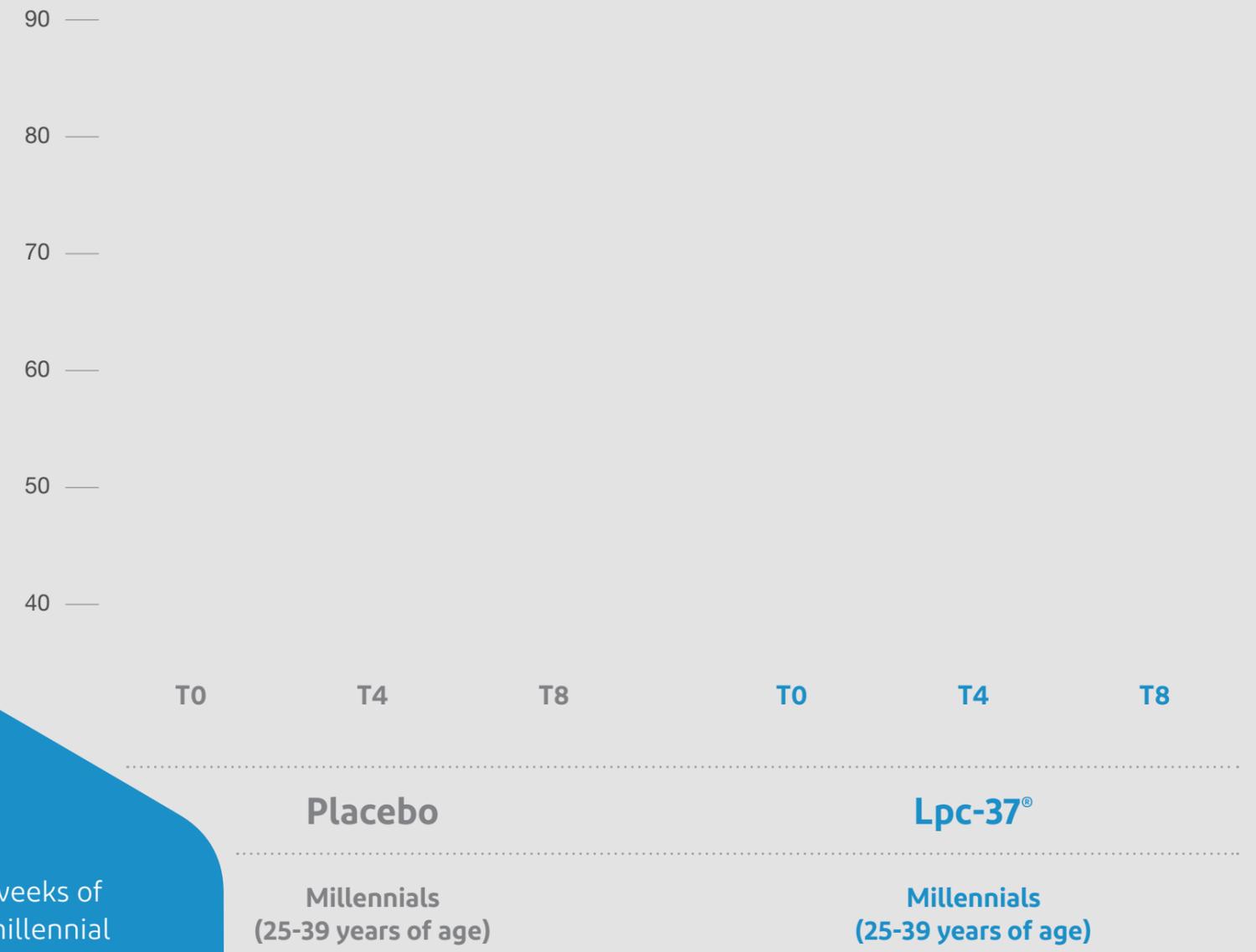
Reaffirming the results of the clinical trial, the results from the in-home use test demonstrated a strong trend that those consumers taking Lpc-37[®] every day for eight weeks had less stress and anxiety levels at the end of the study (T8) than those taking placebo (n=190; p=0.056), with this result becoming statistically significant in the millennial sub-group (25-39 years of age; p=0.025).

P=0.025

 Click on each bar of the graph to the right to reveal the millennial sub-group results of the study.

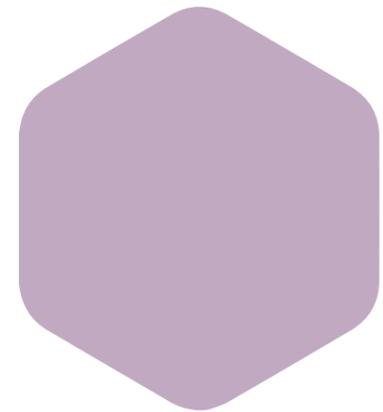
Results: After eight weeks of taking Lpc-37[®], the millennial sub-group reported an 18% decrease in stress/anxiety levels from baseline to the end of the study, around 5% lower than that reported by the placebo group.

Stress/Anxiety Levels
(line scale)





Howaru CALM



Choose less stress, Choose HOWARU® Calm

If you're looking to develop a brain health product that helps your customers address their perceived stress levels and promote a relaxed state of mind, HOWARU® Calm may be the perfect fit.

Lpc-37® was investigated in the clinical trial under the guidelines of Good Clinical Practice to ensure ethical and scientific quality standards were maintained throughout the study. Manufactured in the U.S., HOWARU® Calm can be formulated into nutritional food and beverage formats, as well as traditional supplement formats – such as tablets and capsules – to address consumer's perceived stress efficiently and easily. You can add it to your existing products to supplement their benefits or develop new brain health specific products for your portfolio.



To learn more
about incorporating
HOWARU® Calm into
your portfolio, visit
howaru.com/calm

Our HOWARU® promise

As a global leader in probiotics, we offer the broadest range of clinically-studied probiotics. Backed by our extensive portfolio, strong consumer insights, as well as global support and services to deliver unmatched value, you can be confident in partnering with us.

Our signature strains are:

- Formulated and evaluated to ensure viability through end of shelf life
- Tested for toxicity to confirm safety for human consumption
- FDA evaluated and accepted without objection
- Clinically studied for safety and efficacy
- Manufactured in the U.S. under FDA Good Manufacturing Practices

Let us equip you with the clinical efficacy, safety and product quality needed to ensure you and your customers have a positive experience with every dose. Our global and regional application experts will collaborate with you to formulate the perfect product, while our robust regulatory team will help you navigate local requirements. For your end-product, leverage our marketing support and industry insights to help you successfully position your product to consumers.

We're with you every step of the way. We're confident that, with our help, you can create a product that leaves consumers feeling relaxed and ready to tackle their day.