

Gut Health Supplement Fact Sheet

for Healthcare Professionals

This fact sheet outlines evidence from scientific research on the nutrients used as ingredients in this product and, as such, is intended only for use by qualified healthcare professionals. All ingredients are linked to specific health benefits published in well recognised, peer-reviewed medical and research journals, details of which are provided. The Gut Health formula combines a range of quality ingredients that contribute to a healthier digestive system and microbiome and in turn a healthier body. With both prebiotics and probiotics, digestive enzymes, amino acids, flavonoids and a range of botanicals, it's a unique and comprehensive formulation for strengthening and maintaining a healthy gut, specifically targeting gastrointestinal function, integrity and immunity.

Positive Science People Gut Health is a comprehensive and affordable formula, developed for high patient compliance.

Aloe Vera

Aloe Vera has been used for over 5000 years by Egyptian, Indian, Chinese and European cultures for a range of ailments. It contains over 70 biologically active components, known for their antioxidant, anti-inflammatory and immune-enhancing properties. In a randomised, double blind, placebo-controlled trial¹ involving patients with Ulcerative Colitis (an inflammatory bowel condition), Aloe Vera supplementation led to a reduction in disease activity, and clinical improvement (including remission), in significantly more patients compared to a placebo.

Apple Pectin

Apple pectin is a prebiotic fibre that has been shown to selectively stimulate the growth of beneficial bacteria in the gut. In fact, a recent study found² that, when compared to Inulin - one of the most widely recognized and researched prebiotic fibres - Apple pectin stimulated a significantly greater diversity of gut bacteria. Prebiotics are types of fibres that remain intact through the digestive tract and are selectively fermented by gut bacteria, to confer health benefits to the host. Prebiotics have demonstrated³ wide ranging benefits in gastrointestinal disorders, obesity, cardiovascular disorders, immunity, and the enhanced GI absorption of certain minerals.

Bromelain

Bromelain is a group of enzymes found in the fruit and stem of the pineapple plant. It has attracted growing interest for its well-recognized anti-inflammatory, anti-microbial, analgesic (pain-relieving) and wound healing properties. In a 2017 review⁴, authors concluded that Bromelain equals non-steroidal inflammatory drugs as an anti-inflammatory agent, with fewer side effects.

Chamomile

Chamomile is one of the most ancient medicinal herbs, and contains 120 bioactive compounds⁵, of which 36 flavonoids. It is known for its anti-inflammatory, antispasmodic, and anti-cancer properties, among others. A 2016 review⁶ associated Chamomile with a wide range of benefits, including in gastrointestinal disorders and Ulcerative Colitis.

A more recent systematic review⁷ of randomized controlled trials also found significant improvements in Generalised Anxiety Disorder and sleep quality during Chamomile supplementation vs. placebo.

Fenugreek

Fenugreek, a well-known plant, commonly used as a condiment or spice, is also known for its diverse range of phytochemicals, including saponins, polyphenols, flavonoids and more. It has been shown to confer anti-inflammatory, anti-oxidant, anti-diabetic, anti-cancer and anti-hyperlipidaemic benefits, according to a recent review⁸.

It also contains galactomannan, a prebiotic fibre shown to enhance the growth of good bacteria, according to a recent study⁹.



Ginger

Ginger has been used for thousands of years for its anti-inflammatory, antioxidant, anti-tumour and anti-ulcer properties. According to a recent systematic review¹⁰, it has demonstrated significant improvements in pregnancy-related nausea, functional dyspepsia, gastrointestinal motility and gastric emptying, as well as chemotherapy-induced¹¹ nausea and vomiting.

Ginger also exerts prebiotic potential to increase beneficial bacteria in the gastrointestinal tract (including *Bifidobacterium* spp and *Lactobacillus* spp), as demonstrated in a recent study¹². This makes for a perfect pairing with the *Bifidobacteria* and *Lactobacillus* probiotics found in this gut health formulation.

L-Glutamine

Glutamine is the most abundant amino acid in the human body, however, during catabolic conditions, such as sepsis, injury, surgery or intense physical activity, it can become conditionally essential, as its availability is compromised. It plays numerous important roles, including in energy metabolism, immunity, intestinal integrity, and the production of important proteins, antioxidants and neurotransmitters.

In the gastrointestinal tract specifically, glutamine¹³ is involved in the maintenance of normal intestinal tissue integrity, normal functioning of tight junctions (which create a protective barrier), down-regulation of inflammatory markers, and modulation of gut bacteria

Liquorice Root

Liquorice root contains a number of bioactive¹⁴ constituents, including flavonoids, isoflavones and chalcones, known for their anti-inflammatory, anti-microbial, anti-tumour and antioxidant capacities.

Liquorice has also been shown to reduce *H.Pylori*, gastric load and dyspepsia, according to a review¹⁵ of clinical studies using liquorice and its bioactive constituents

We use Deglycyrrhizinated Licorice (DGL) in our product to avoid any side effects, especially in regards to blood pressure.

Marshmallow Root

Marshmallow root has been used for centuries to soothe upper-gastrointestinal complaints such as an irritated mouth or throat, dry cough, and mild stomach or gut discomfort. It has been shown to form a protective layer and exert anti-inflammatory and anti-oxidative effects on inflamed mucosa, according to a recent study¹⁶.

MSM (Methylsulfonylmethane)

MSM is a naturally occurring compound found in a range of foods and drinks, including fruits, vegetables, grains, tea and coffee. It has been shown¹⁷ to modulate the immune response through its anti-inflammatory and antioxidant properties. These properties are also believed to have a protective effect¹⁸ on the gastrointestinal mucosa (lining), by reducing oxidative stress, and expression of gastrointestinal pro-inflammatory cytokines

Milk Thistle

Milk Thistle has been used for centuries, traditionally for the treatment of liver and biliary tract disorders. More recently, Milk



Thistle has also been investigated in several other therapeutic areas, showing significant improvements in blood lipid profile in dyslipidemia, and blood glucose control in diabetes, mediated through its antioxidant and anti-inflammatory properties, according to a recent review¹⁹.

Probiotics

Probiotic supplementation has been found to be effective in a range of gastrointestinal disorders including travelers' diarrhoea and antibiotic associated diarrhoea, as well as irritable bowel syndrome and inflammatory bowel diseases. There is also a growing body of research investigating the benefits of probiotics in cardiovascular disease, obesity, chronic inflammatory conditions, and even mental health.

Lactobacillus Acidophilus, *Lactobacillus Casei* and *Bifidobacterium Bifidum* are some of the best known and widely researched probiotics, with proven efficacy in antibiotic associated diarrhoea²⁰ and travelers' diarrhoea. They have been shown to improve gut barrier function and GI symptoms²¹ in athletes under intense GI stress from training and competition.

Quercetin

Quercetin is a natural flavonoid, commonly found in fruits and vegetables, also known for its potent anti-inflammatory and antioxidant properties.

A review²² of its effects on gastrointestinal integrity demonstrated that Quercetin enhances gastrointestinal barrier function, by supporting the assembly and expression of tight junction proteins in the gut, leading to decreased intestinal permeability.

Stinging Nettle

Stinging Nettle extract has been widely used since ancient times to treat various ailments. In fact, Ancient Egyptians used it to treat arthritis and lower back pain. It contains²³ a range of vitamins and phytochemicals known for their antioxidant properties.

Stinging Nettle is especially recognised for its anti-inflammatory properties, recently demonstrated in a 2021 randomised, placebo-controlled crossover trial of veterans with Gulf War Illness (GWI) - a non-specific chronic inflammatory condition leading to symptoms such as diarrhea, fatigue, pain and cognitive impairment. Stinging Nettle supplementation led to a significant reduction²⁴ in GWI symptoms, while other botanical extracts did not.

Zinc-L-Carnosine

Zinc-L-Carnosine is a potent antioxidant that has been shown to protect the gastrointestinal mucosa, restore gastric lining, and improve GI disorders, according to a 2020 review²⁵. Indeed, based on their analysis, the authors concluded that “evidence supports the safety and efficacy of ZnC for the maintenance, prevention, and treatment of the mucosal lining and other epithelial tissues.”

Nutritional Information

Serving Size: 4 Capsules. Servings Per Container: 30.

	Amount Per Serving
L-Glutamine	500mg
L-Carnosine	27.6mg
MSM (Methyl Sulphonyl Methane)	200mg
Bromelain	50mg
Quercetin	50mg
Apple Pectin	250mg
Aloe Vera (inner leaf, organic)	10g
Ginger Root	500mg
Deglycyrrhizinated Liquorice (DGL) Root Extract	250mg
Slippery Elm Powder (organic)	200mg
Marshmallow Root Powder	100mg
Fenugreek Seed Powder	100mg
Milk Thistle Seed Powder (organic)	50mg
Chamomile Flower Powder (organic)	100mg
Nettle Leaf	200mg
<i>Bifidobacterium Bifidum</i>	0.8 billion CFU
<i>Lactobacillus Acidophilus</i>	0.7 billion CFU
<i>Lactobacillus Casei</i>	0.8 billion CFU

CFU = Colony Forming Units

Ingredients: L-Glutamine, Capsule Shell (Hydroxypropyl Methylcellulose), Bulking Agent (Stoneground Brown Rice Flour), Liquorice Root Extract, Apple Pectin, Methyl Sulphonyl Methane, Slippery Elm Bark Powder, Marshmallow Root Powder, Nettle Leaf Extract, Fenugreek Seed Powder, Chamomile Flower Powder, Aloe Vera Powder, Quercetin, Milk Thistle Seed Powder, Bromelain, Zinc Carnosine, Ginger Root Extract, *Bifidobacterium Bifidum*, *Lactobacillus Acidophilus*, *Lactobacillus Casei*.

For more information on Positive Science People’s Joint Care formula, please contact:

Sandra Witzel

Founder & Director
sandra@positivesciencepeople.uk

Rachel Redman

Registered Dietitian
rachel@positivesciencepeople.uk

References

1. Langmead, L., Feakins, R.M., Goldthorpe, S., Holt, H., Tsironi, E., De Silva, A., Jewell, D.P. and Rampton, D.S. (2004), Randomized, double-blind, placebo-controlled trial of oral aloe vera gel for active ulcerative colitis. *Alimentary Pharmacology & Therapeutics*, 19: 739-747. <https://doi.org/10.1111/j.1365-2036.2004.01902.x>
2. Chung WS, Walker AW, Louis P, Parkhill J, Vermeiren J, Bosscher D, Duncan SH, Flint HJ. Modulation of the human gut microbiota by dietary fibres occurs at the species level. *BMC Biol.* 2016 Jan 11;14:3. doi: 10.1186/s12915-015-0224-3. PMID: 26754945; PMCID: PMC4709873.
3. Pandey KR, Naik SR, Vakili BV. Probiotics, prebiotics and synbiotics- a review. *J Food Sci Technol.* 2015 Dec;52(12):7577-87. doi: 10.1007/s13197-015-1921-1. Epub 2015 Jul 22. PMID: 26604335; PMCID: PMC4648921.
4. Muhammad ZA, Ahmad T. Therapeutic uses of pineapple-extracted bromelain in surgical care - A review. *J Pak Med Assoc.* 2017 Jan;67(1):121-125. PMID: 28065968.
5. Srivastava JK, Shankar E, Gupta S. Chamomile: A herbal medicine of the past with bright future. *Mol Med Rep.* 2010;3(6):895-901. doi:10.3892/mmr.2010.377
6. Miraj S, Alesaeidi S. A systematic review study of therapeutic effects of *Matricaria recuita* chamomile (chamomile). *Electron Physician.* 2016 Sep 20;8(9):3024-3031. doi: 10.19082/3024. PMID: 27790360; PMCID: PMC5074766.
7. Hieu, TH, Dibas, M, Surya Dila, KA, et al. Therapeutic efficacy and safety of chamomile for state anxiety, generalized anxiety disorder, insomnia, and sleep quality: A systematic review and meta-analysis of randomized trials and quasi-randomized trials. *Phytotherapy Research.* 2019; 33: 1604– 1615. <https://doi.org/10.1002/ptr.6349>
8. Nagulapalli Venkata KC, Swaroop A, Bagchi D, Bishayee A. A small plant with big benefits: Fenugreek (*Trigonella foenum-graecum* Linn.) for disease prevention and health promotion. *Mol Nutr Food Res.* 2017 Jun;61(6). doi: 10.1002/mnfr.201600950. Epub 2017 Apr 27. PMID: 28266134.
9. Majeed, M, Majeed, S, Nagabhushanam, K, et al. Galactomannan from *Trigonella foenum-graecum* L. seed: Prebiotic application and its fermentation by the probiotic *Bacillus coagulans* strain MTCC 5856. *Food Sci Nutr.* 2018; 6: 666– 673. <https://doi.org/10.1002/fsn3.606>
10. Nikkhah Bodagh, M, Maleki, I, Hekmatdoost, A. Ginger in gastrointestinal disorders: A systematic review of clinical trials. *Food Sci Nutr.* 2019; 7: 96– 108. <https://doi.org/10.1002/fsn3.807>
11. Marx W, Ried K, McCarthy AL, Vitetta L, Sali A, McKavanagh D, Isenring L. Ginger-Mechanism of action in chemotherapy-induced nausea and vomiting: A review. *Crit Rev Food Sci Nutr.* 2017 Jan 2;57(1):141-146. doi: 10.1080/10408398.2013.865590. PMID: 25848702.
12. Lu QY, Summanen PH, Lee RP, Huang J, Henning SM, Heber D, Finegold SM, Li Z. Prebiotic Potential and Chemical Composition of Seven Culinary Spice Extracts. *J Food Sci.* 2017 Aug;82(8):1807-1813. doi: 10.1111/1750-3841.13792. Epub 2017 Jul 5. PMID: 28678344; PMCID: PMC5600121.
13. Perna S, Alalwan TA, Alaali Z, Alnashaba T, Gasparri C, Infantino V, Hammad L, Riva A, Petrangolini G, Allegrini P, Rondanelli M. The Role of Glutamine in the Complex Interaction between Gut Microbiota and Health: A Narrative Review. *International Journal of Molecular Sciences.* 2019; 20(20):5232. <https://doi.org/10.3390/ijms20205232>
14. Asl MN, Hosseinzadeh H. Review of pharmacological effects of *Glycyrrhiza* sp. and its bioactive compounds. *Phytother Res.* 2008 Jun;22(6):709-24. doi: 10.1002/ptr.2362. PMID: 18446848; PMCID: PMC1767813.
15. Hosseinzadeh, H., and Nassiri-Asl, M. (2015) Pharmacological Effects of *Glycyrrhiza* spp. and Its Bioactive Constituents: Update and Review. *Phytother. Res.*, 29: 1868– 1886. doi: 10.1002/ptr.5487.
16. Bonaterra GA, Bronischewski K, Hunold P, Schwarzbach H, Heinrich EU, Fink C, Aziz-Kalbhenn H, Müller J, Kinscherf R. Anti-inflammatory and Anti-oxidative Effects of *Phytohostil*® and Root Extract of *Althaea officinalis* L. on Macrophages in vitro. *Front Pharmacol.* 2020 Mar 17;11:290. doi: 10.3389/fphar.2020.00290. PMID: 32256361; PMCID: PMC7090173.
17. Butawan M, Benjamin RL, Bloomer RJ. Methylsulfonylmethane: Applications and Safety of a Novel Dietary Supplement. *Nutrients.* 2017;9(3):290. Published 2017 Mar 16. doi:10.3390/nu9030290
18. Amirshahrokhi K, Khalili AR. Methylsulfonylmethane is effective against gastric mucosal injury. *Eur J Pharmacol.* 2017 Sep 15;811:240-248. doi: 10.1016/j.ejphar.2017.06.034. Epub 2017 Jun 28. PMID: 28666801.
19. Tajmohammadi A, Razavi BM, Hosseinzadeh H. *Silybum marianum* (milk thistle) and its main constituent, silymarin, as a potential therapeutic plant in metabolic syndrome: A review. *Phytother Res.* 2018 Oct;32(10):1933-1949. doi: 10.1002/ptr.6153. Epub 2018 Jul 17. PMID: 30015401.
20. Sniffen JC, McFarland LV, Evans CT, Goldstein EJC. Choosing an appropriate probiotic product for your patient: An evidence-based practical guide. *PLoS One.* 2018 Dec 26;13(12):e0209205. doi: 10.1371/journal.pone.0209205. PMID: 30586435; PMCID: PMC6306248.
21. Miles MP. Probiotics and Gut Health in Athletes. *Curr Nutr Rep.* 2020 Sep;9(3):129-136. doi: 10.1007/s13668-020-00316-2. PMID: 32451960.
22. Suzuki T, Hara H. Role of flavonoids in intestinal tight junction regulation. *J Nutr Biochem.* 2011 May;22(5):401-8. doi: 10.1016/j.jnutbio.2010.08.001. Epub 2010 Dec 16. PMID: 21167699.
23. Kregiel D, Pawlikowska E, Antolak H. *Urtica* spp.: Ordinary Plants with Extraordinary Properties. *Molecules.* 2018;23(7):1664. Published 2018 Jul 9. doi:10.3390/molecules23071664
24. Younger, J.; Donovan, E.K.; Hodgins, K.S.; Ness, T.J. A Placebo-Controlled, Pseudo-Randomized, Crossover Trial of Botanical Agents for Gulf War Illness: Reishi Mushroom (*Ganoderma lucidum*), Stinging Nettle (*Urtica dioica*), and Epimedium (*Epimedium sagittatum*). *Int. J. Environ. Res. Public Health* 2021, 18, 3671. <https://doi.org/10.3390/ijerph18073671>
25. Hewlings S, Kalman D. A Review of Zinc-L-Carnosine and Its Positive Effects on Oral Mucositis, Taste Disorders, and Gastrointestinal Disorders. *Nutrients.* 2020; 12(3):665. <https://doi.org/10.3390/nu12030665>