MAST CELL ACTION

Supplements for MCAS

Nourishing Health and Happiness with MCAS

Trusted Information Creator™
Patient Information Forum



Registered Charity Number 1164917

Disclaimers

Trigger warning - this document is about food and contains images of food.

We recognise that many of the images in this guide contain foods that are restricted on low histamine diets. The images are from stock photos and do not exactly reflect a low histamine diet. We have done our best to reduce references to high-histamine foods wherever possible.

Everyone with MCAS is different, and this is general information, not tailored to your individual needs. This resource is intended to be used alongside support from a qualified health professional. Please seek advice from your medical practitioner or dietitian for specific dietary guidance.

We hope you will be confident to adapt the guidance and recipes for your circumstances, and swap out foods that you are not able to tolerate for others that you are.

This sheet is designed for adults with Mast Cell Activation Syndrome. The nutritional needs of children and teenagers will differ, and the nutritional needs of individuals with specific medical conditions will vary.

If your diet is very limited and you feel that you are struggling to get enough nutrients in your diet or have a specific medical condition that may have specific dietary needs, then please ensure you seek individualised dietary advice from a dietitian with experience in this area.

This resource is designed to support, not replace, tailored advice from your medical team.

For more information about low histamine diets and other dietary adjustments, please see our Self-Management Toolkit HERE

Introduction

Why Does Diet Matter?

Diet plays a really important role in helping those with MCAS, but can also be one of the trickiest areas to navigate, as those with MCAS often have dietary triggers.

What you eat can directly influence mast cell behaviour and histamine levels in the body.

Common Dietary Challenges with MCAS

People with MCAS often face considerable challenges with food, including:

- Food sensitivities and intolerances: MCAS can cause reactivity to a wide range of foods.
- Variable and evolving triggers: Food triggers can change over time or vary based on other factors such as stress, hormone levels, illness, or environmental exposures.
- Digestive issues: Symptoms like bloating, nausea, abdominal pain, and altered bowel habits are common and may require additional dietary adjustments.
- Nutritional adequacy: Due to multiple food restrictions, maintaining a balanced, nutrient-rich diet can be difficult without careful planning.

Supplements for MCAS

Disclaimer

Before using this resource, please remember that the information provided is general and cannot be tailored to individual needs.

Any decisions regarding supplements and vitamins should always be made under the guidance of a healthcare professional.

It's important to understand that there is no universal list of supplements for MCAS, as each person's needs and reactions can vary widely.



Supplements and MCAS

People try supplements for various reasons. However, currently, there is limited scientific evidence to support the effectiveness of many of these supplements.

Many of the supplements commonly recommended for use in MCAS have limited human trials supporting their use. Most of the studies we have were either test tube (in vitro) studies or animal studies (1)

However, in certain circumstances, individual nutritional supplements may be recommended by a health professional.

In the pages below, Dietitian Chloe Hall has provided information on some of the key supplements that we have more research on, which may be able to help support us with MCAS.

This sheet will cover:

- Why those with MCAS may consider supplements.
- Key Considerations
- Supplements that may be considered in MCAS
- Supplementing Safely

1. Harris CI, Nasar B, Finnerty CC. Nutritional Implications of Mast Cell Diseases. J Acad Nutr Diet. 2024.

HELPFUL TIP
Source supplements with the least ingredients, and as few fillers, colourings etc as possible.



Why Consider Supplements

Those living with MCAS often consider supplements to address particular needs, such as:

1. Nutritional Deficiencies: If your diet is restricted because of food triggers, you might not be getting enough of certain nutrients, which can lead to deficiencies. This risk may be higher if you have gastrointestinal conditions that affect nutrient absorption or if you experience increased nutrient loss, such as through heavy menstrual bleeding. Supplements can help prevent or correct these deficiencies, which, if left untreated, could worsen your symptoms.

2. Dietary Gaps: People following specific diets, such as vegan or vegetarian, may require supplements like vitamin B12 and iodine, which can be more difficult to obtain from plant-based foods. For those with MCAS, additional dietary restrictions (such as low histamine or dairy-free diets) may increase the need for further supplementation to ensure nutritional balance.

3. Symptom Management: Specific supplements may help to manage symptoms. For instance, magnesium oxide or citrate can aid with constipation.

4. Mast Cell Stabilisation: Many seek supplements that might help stabilise mast cells as a non-medication approach. The effectiveness of these supplements varies, and this page will look at the research supporting their use.



Key Considerations With Supplements

It's really important to approach supplements with the same caution as medications, especially in MCAS.

Overdosing on supplements, like vitamin D, can be fatal, though rare. Therefore, understanding safe dosages is essential. Always read the label and speak to a healthcare professional where possible, for detailed information on safe dosages and usage.

Key Considerations When Taking Supplements

- Whenever possible, try to get nutrients from food due to the additional health benefits food provides. Supplements should bridge gaps only when necessary, particularly in restrictive diets.
- Assess whether a supplement might do more harm than good. Consider past reactions, the quality of the supplement, and if it's in a safe dosage.
- Start one supplement at a time to monitor reactions or benefits. Introducing multiple supplements simultaneously can make it difficult to identify which one is effective.
- Choose reputable brands and ensure supplements are tested by credible sources. Avoid fillers and binders that might trigger reactions.
- Ensure the supplement form is effective and bioavailable, meaning the body can absorb and use it efficiently.



Supplements for MCAS

Vitamin C

What is it?

Vitamin C is an essential water-soluble vitamin found in most fruits and vegetables. It is a potential antioxidant that can support the immune system and help in a reduction of inflammation (1).

Why supplement?

Some people with MCAS worry about getting enough Vitamin C because common sources like citrus fruits or tomatoes may not be well tolerated. In these cases, it's important to explore alternative food sources or consider supplementation. While Vitamin C is often mentioned as a mast cell stabiliser, there is currently very limited human evidence to confirm this effect (1).

Can I just get it from food?

Yes, if you are able to eat a varied diet with plenty of plant-based foods. If you are on a restricted diet, then it may be more difficult.

Foods that are high in Vitamin C include broccoli, peppers, dark green leafy vegetables, cherries, papaya, etc. In the typical UK diet, we get a lot of our vitamin C from potatoes.

(1). Harris CI, Nasar B, Finnerty CC. Nutritional Implications of Mast Cell Diseases. J Acad Nutr Diet. 2024.

HELPFUL TIP
Onboard supplements very slowly and gradually, starting with very small doses.



Supplements for MCAS

Vitamin D

What is it?
A fat-soluble vitamin and hormone

Why Supplement?
Vitamin D helps to support healthy bones and teeth and protect muscle strength. (1) It has been suggested that vitamin D deficiency can activate mast cells and that vitamin D is necessary for mast cell stabilisation. (2)

How much?
Adults who are at higher risk of low vitamin D levels (see list to the right) are advised to consider taking a daily supplement containing 10 micrograms of Vitamin D, especially during autumn and winter months.

Can I just get it from food?
It's unlikely that you'll get sufficient Vitamin D from food alone. Most of our Vitamin D is produced in the skin when it's exposed to sunlight, especially between March and October.

Groups at risk of low Vitamin D

- those who are pregnant or breastfeeding
- people over 65 years old
- people with darker skin tones – people of Asian, African, Afro-Caribbean, and Middle Eastern descent – living in the UK or other northern climates
- if you always cover most of your skin when you are outside
- if you live further North, there is less sunlight for you to make vitamin D
- anyone who spends very little time outside during the summer
- if the air is quite polluted.

(1) Association BD. Vitamin D [Available from: https://www.bda.uk.com/resource/vitamin-d.html.
(2). Mehrani Y, Morovati S, Tieu S, Karimi N, Javadi H, Vanderkamp S, et al. Vitamin D Influences the Activity of Mast Cells in Allergic Manifestations and Potentiates Their Effector Functions against Pathogens. Cells. 2023;12(18):2271.



Supplements for MCAS

Omega-3 fatty acids

What are they?

Omega-3 fatty acids are essential polyunsaturated fats that play a crucial role in brain function, heart health, and inflammation regulation.

Why Supplement?

Omega-3 has been shown to have anti-inflammatory properties and supports brain and heart health. (1, 2) Omega-3 fatty acids are limited on the low histamine diet due to the exclusion of oily fish.

How much?

Choose a supplement that provides you with the same daily amount provided by eating one to two portions of fish per week (about 450mg EPA and DHA per daily adult dose). (3) Check the Vitamin A content of the supplement- You should not have more than 1.5mg vitamin A (1500ug) a day from food and supplements combined. Don't take supplements containing vitamin A if you are pregnant or planning to become pregnant.

What type?

Fish oil doesn't contain histamine, so omega-3 fish oil supplements are ok to take while on a low histamine diet. If you are on a plant-based diet, an algae supplement is an appropriate alternative.

Can I just get it through food?

You could include 1 or 2 of the following daily instead to get enough omega-3 on a low histamine diet:

- 1 tbsp ground linseed/flaxseed
- 6 walnut halves
- 1 tbsp chia seeds
- 2 tbsp shelled hemp seeds (4)

(1.) Gutiérrez S, Svahn SL, Johansson ME. Effects of Omega-3 Fatty Acids on Immune Cells. Int J Mol Sci. 2019;20(20).
(2.) Calder PC. Marine omega-3 fatty acids and inflammatory processes: Effects, mechanisms, and clinical relevance. Biochimica et Biophysica Acta (BBA) - Molecular and Cell Biology of Lipids. 2015;1851(4):469-84.
(3.) Association BD. [Available from: https://www.bda.uk.com/resource/omega-3.html.
(4.) Society TV. Omega-3 [Available from: https://www.vegansociety.com/resources/nutrition-and-health/nutrients/omega-3-fat.



Supplements for MCAS

Quercetin & Luteolin

What are they?

They are naturally occurring compounds, flavonoids, found in fruits and vegetables like onions and garlic. They can act as antioxidants and have anti-inflammatory properties. (1)

Why Supplement?

Some research has suggested that both luteolin and quercetin appear as effective as cromolyn sodium at reducing the release of chemical mediators, including histamine, leukotrienes, and prostaglandin D2. (2) We need more independent studies that aren't funded by supplement companies. (1)

Can I get it from food?

You can obtain Quercetin and Luteolin naturally in foods by consuming a wide range of plant-based foods; however, the amount consumed in food may not be sufficient to achieve therapeutic doses. Further research is needed to determine whether this is the case.

How much?

Quercetin is generally considered as safe, and no common side effects have yet been found in doses of up to 1 to 2g each day. (3, 4) Safety data on Luteolin are lacking, as is guidance on the most effective dosage. (5) Consumption of flavonoids should be kept under 1-2g per day, in total, as they can have an impact on the liver at higher doses. (6)

(1.) Harris CI, Nasar B, Finnerty CC. Nutritional Implications of Mast Cell Diseases. J Acad Nutr Diet. 2024.
(2.) Weng Z, Zhang B, Asadi S, Sismanopoulos N, Butcher A, Fu X, et al. Quercetin is more effective than cromolyn in blocking human mast cell cytokine release and inhibits contact dermatitis and photosensitivity in humans. PLoS One. 2012;7(3):e33805.
(3.) Examine. Quercetin 2025 [Available from: https://examine.com/supplements/quercetin/?show_conditions=true#dosage-information.
(4.) Okamoto T. Safety of quercetin for clinical application (Review). Int J Mol Med. 2005;16(2):275-8.
(5.) Ntalouka F, Tsirivakou A. Luteolin: A promising natural agent in the management of pain in chronic conditions. Front Pain Res (Lausanne). 2023;4:1114428.
(6.) Ross JA, Kasum CM. Dietary flavonoids: bioavailability, metabolic effects, and safety. Annu Rev Nutr. 2002;22:19-34.



Supplements for MCAS

Palmithoylethanolamide (PEA)

What is it?

A chemical made from fat, which is found in egg yolks and peanuts, as well as being produced by our own bodies. (1) It is thought to affect the way food moves through our gut and positively influence gut bacteria, as well as having anti-inflammatory and antioxidant effects. (2)

Why supplement?

It is thought to downregulate mast cell receptors. (3) It may also reduce pain due to various conditions, which may be helpful for some people with MCAS. (4) We need further studies done in people with MCAS, however.

Can I just get it from food?

You can get this in foods such as eggs and peanuts; however, it is unknown whether this dose would be enough to get the benefits discussed above.

How much?

Doses of 600mg once to twice a day have commonly been used in studies. No clear recommendations exist for the duration of PEA use, and we need more studies on long-term use of this supplement. (5)

1.) Brankovic´ M, Gmizic´ T, Dukic´ M, Zdravkovic´ M, Daskalovic´ B, Mrda D, et al. Therapeutic Potential of Palmitoylethanolamide in Gastrointestinal Disorders. Antioxidants (Basel). 2024;13(5).

(2.) Pirozzi C, Coretti L, Opallo N, Bove M, Annunziata C, Comella F, et al. Palmitoylethanolamide counteracts high-fat diet-induced gut dysfunction by reprogramming microbiota composition and affecting tryptophan metabolism. Front Nutr. 2023;10:1143004.

(3.) Cremon C, Stanghellini V, Barbaro MR, Cogliandro RF, Bellacosa L, Santos J, et al. Randomised clinical trial: the analgesic properties of dietary supplementation with palmitoylethanolamide and polydatin in irritable bowel syndrome. Aliment Pharmacol Ther. 2017;45(7):909-22.

(4.) Viña I, López-Moreno M. Meta-Analysis of Palmitoylethanolamide in Pain Management: Addressing Literature Gaps and Enhancing Understanding. Nutr Rev. 2025.

(5.) Lang-Illievich K, Klivinyi C, Lasser C, Brenna CTA, Szilagyi IS, Bornemann-Cimenti H. Palmitoylethanolamide in the Treatment of Chronic Pain: A Systematic Review and Meta-Analysis of Double-Blind Randomized Controlled Trials. Nutrients. 2023;15(6).



Supplements for MCAS

Probiotics

What are they?

Probiotics are live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. (1) Many people with MCAS will trial probiotics for various reasons, including to help with their gut symptoms.

Why Supplement?

Those with MCAS may consider taking probiotics for several reasons:

1. Gut Symptoms; There are no specific recommendations for Healthcare Professionals to follow when it comes to advising probiotics for those with MCAS. However, some of those with MCAS will also have other conditions, such as Irritable Bowel Syndrome (IBS), where there is guidance in terms of how long to recommend probiotics for and which strains of bacteria may help symptoms.
2. To help support their gut health with the goal to reduce MCAS symptoms; Histamine is a chemical that is used to send signals in our gut. (2) Probiotics do have the potential to regulate histamine levels; however, research in this area is in the early stages, and currently, we have no studies that look at probiotic use in MCAS. (3)

Can I just get it from food?

You can consume probiotics in fermented foods like sauerkraut, kombucha, yoghurt, etc. However, these foods tend to be high in histamine, and many people with MCAS struggle to tolerate them.

HELPFUL TIP
Don't avoid foods unnecessarily – it might not be a problem for you. Everyone with MCAS has different triggers.



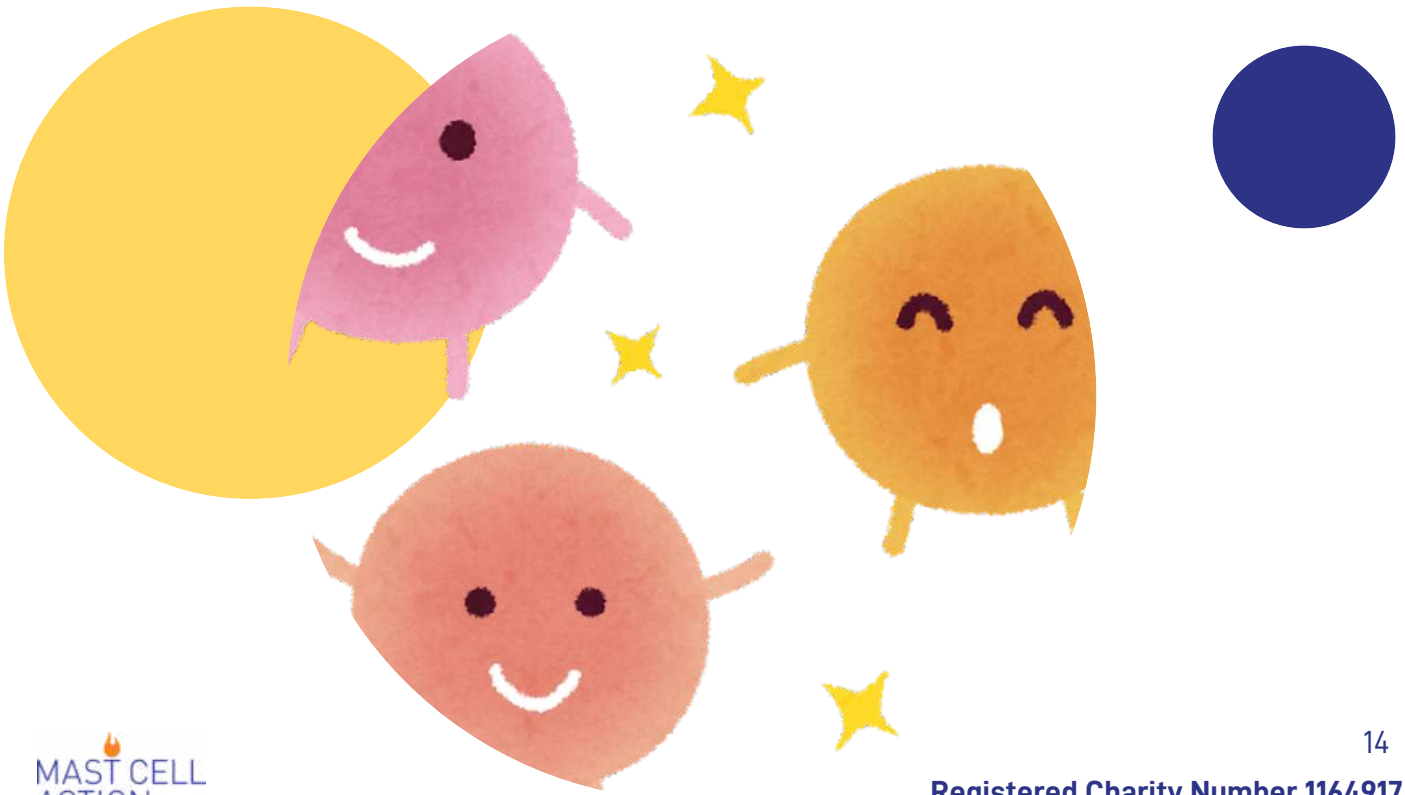
Supplements for MCAS

Probiotics Continued

Things to consider when taking probiotics with MCAS

- The efficacy of probiotics is both strain-specific and disease-specific, so we need to choose a probiotic that has evidence that the particular strain in it can help that particular symptom or disease. (4)
- Probiotics have the potential to reduce inflammation and allergic responses, but they can also sometimes worsen symptoms - so selecting the right type is very important (3).
- Some bacterial strains release histamine and not all bacterial strains have been tested in terms of histamine release. (5, 6)

(1.)Group FWw. Probiotics in food Health and nutritional properties and guidelines for evaluation. 2001
(2.) Krell T, Gavira JA, Velando F, Fernández M, Roca A, Monteagudo-Cascales E, et al. Histamine: A Bacterial Signal Molecule. Int J Mol Sci. 2021;22(12).
(3.) Harris CI, Nasar B, Finnerty CC. Nutritional Implications of Mast Cell Diseases. J Acad Nutr Diet. 2024.
(4.) McFarland LV, Evans CT, Goldstein EJC. Strain-Specificity and Disease-Specificity of Probiotic Efficacy: A Systematic Review and Meta-Analysis. Front Med (Lausanne). 2018;5:124.
(5.) Hrubisko M, Danis R, Huorka M, Wawruch M. Histamine Intolerance-The More We Know the Less We Know. A Review. Nutrients. 2021;13(7).
(6.) Stuivenberg G, Daisley B, Akouris P, Reid G. In vitro assessment of histamine and lactate production by a multi-strain synbiotic. J Food Sci Technol. 2022;59(9):3419-27.



Supplementing Safely

When thinking about supplements for MCAS, it's important to understand that some people may react to them. Often, it's not the active ingredient itself but the fillers, colourings, and additives - known as excipients - or the capsule itself, that can trigger reactions.

Try and source supplements with as few ingredients as possible, and try it in very small doses to begin with. If you struggle with tablets, explore different formats, such as sprays, topical, liquids, etc.

Please note: everyone with MCAS is different, and no one reacts the same way to supplements. Therefore, even though a supplement may appear to be 'clean', it does not mean that it is 'safe' for you. You may still react to it.

There is no one-size-fits-all approach with MCAS, and as with anything new you introduce, it involves a process of careful trial and error to find what works best for you.

It is advised that, due to the variety of formulations available on the market, you always check the label to review ingredients and avoid any potential additives that could cause or trigger any kind of adverse reaction.

Always seek medical advice from your health care professional before onboarding any supplements and ensure they have prior knowledge of your medical history and any individual needs in order to help you decide when to add more supplements.

Always proceed with any new supplement with extreme caution, and try it in very low doses to begin with, to see how your body responds to it.

If you notice an increase in symptoms after starting any new supplement, discontinue use immediately and seek medical advice.



Thank you

This work has been made possible by an award from Postcode Places Trust, a grant-giving charity funded entirely by players of People's Postcode Lottery.

Supported by players of PEOPLE'S POSTCODE LOTTERY

Awarded funds from POSTCODE PLACES TRUST

Special Thanks to:

Chloe Hall, The Calm Gut Dietician

Elanna Barrett - Artwork
Precious Osawe - Editing

We are also very grateful to members of the Mast Cell Action Community for their input and feedback on this document.