



## PMS IN PRACTICE

**An effective protocol for balancing hormones**

## A GUIDE TO PROBIOTICS

**Experts sort fact from fiction in this ever-evolving market**



## JOINT HEALTH SCIENCE

**In-depth advice on the role of nutrition and the joints**



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# Welcome



As Nutritional Therapy students or post-graduates moving into industry or practice, you will be fully aware of the importance of education, of continuing to expand your knowledge base and to further your understanding of new and emerging areas of research.

As a magazine, education is at the heart of what we do (indeed, by reading *Nutrition I-Mag*, you can even secure CPD points) and we are now approaching one of the most exciting times of the year in the conference

calendar – that of the IHCAN Summit.

Taking place on June 29 at 155 Bishopsgate, London, the summit is an expanded version of the popular IHCAN Conference series, allowing for a

greater number of speakers, more delegates to allow for more networking and a vastly expanded exhibition area, where we will welcome more than 50 brands – representing the biggest IHCAN Summit to date. Find out more about speakers at this year's event by clicking here.

Space is almost sold out for this popular conference, so if you want to be there, don't delay in reserving your place. Visit [www.ihcansummit.co.uk](http://www.ihcansummit.co.uk) or call the team on 01279 816300 – and we look forward to see many of you on the day.

We also bring you details of further educational opportunities this issue with our directory of CPD events taking place in the coming weeks. In addition, we have more events in the popular IHCAN webinar series. Click here to find out more.

Rachel

RACHEL SYMONDS, EDITOR

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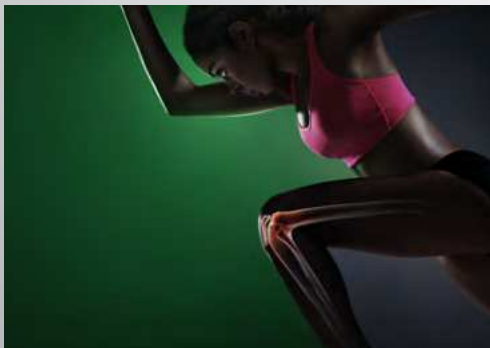
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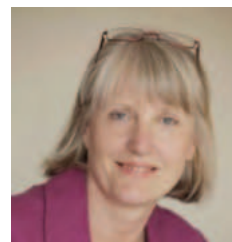
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Frankie Brogan

Frankie Brogan has spent more than 10 years working in the nutrition and wellness industry, including clinics, private consultancy and health stores and his areas of expertise include nutritional supplements/nutraceuticals. As an Associate Registered Nutritionist (AfN), Frankie takes an ethical, practical and evidence-based approach to nutrition and wellness. He is Senior Nutritionist at Pharma Nord.



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Dr Marilyn Glenville PhD is the UK's leading nutritionist specialising in women's health. She is the former President of the Food and Health Forum at the Royal Society of Medicine, a registered nutritionist, psychologist, author and popular broadcaster. For over 30 years, Dr Glenville, has studied and practiced nutritional medicine, specialising in the natural approach to female hormone problems.



Aicacia Young

Aicacia Young, RDN is a Registered Dietitian Nutritionist in Austin, Texas. After receiving her undergraduate degree in traditional nutrition, Aicacia worked in the field of Functional Medicine, where she was trained by a functional MD to help patients from all over the USA treat and reverse their various autoimmune conditions through diet and supplementation. Aicacia now serves as the Director of Scientific Affairs at Microbiome Labs, where she stays up-to-date with the latest research concerning the gut microbiome.



Dr Elisabeth Philipps

Dr Elisabeth Philipps DPhil BSc (Hons) BSc Nut Med FNTF is a renowned nutritional consultant and experienced speaker. She has years of clinical experience running her own private practice, alongside managing practitioner training for Nutrigold and delivering corporate client wellbeing programmes around the country. She is regularly sought after to provide expert opinion for the media, appearing on national health radio and in the national press.



# News bites

A round-up of the news from the natural health industry.

## Queen's Award confirmed for Wren Laboratories

**W**ren Laboratories, the company behind OptiBac Probiotics, has announced it has been secured The Queen's Award for Enterprise 2019 in the international trade category.

The Queen's Awards celebrate the best of British business and recognise companies who are making an outstanding contribution to enterprise, and for Wren, it was awarded in recognition of its impressive international growth.

The company joins an impressive list of organisations which have previously been honoured in this way, including Dyson, JCB, Jaguar and Land Rover.

Instituted by Royal Warrant in 1965 and considered the UK's most prestigious business awards, each entry is judged by a specialist panel that makes a recommendation to the Prime Minister's Advisory Committee. The Queen then decides the winners, which each receive an official grant of appointment and an

invitation to a celebratory reception at Buckingham Palace.

Founded in 2004 and based near Andover in Hampshire, Wren Laboratories specialises in probiotics and the range include many of the world's most researched strains of friendly bacteria. As well as to many export markets across Europe and further afield such as the USA, China and Vietnam, the company has seen its overseas sales rise an impressive 350 per cent between 2016 and 2018.

Jalal Janmohamed, Managing Director, commented: "We are honoured to receive this incredible accolade. It is testament to the great local talent working for our business, our continued investment

in quality probiotics and our unfaltering commitment to educate on the benefits of friendly bacteria across the globe. Our highly skilled teams of nutritionists and experts have helped make probiotics accessible to millions. Thank you to everyone who has supported our business both here and overseas, we look forward to bringing probiotics to millions more in the years to come."



## Practitioners reminded of forthcoming chronic disease lecture

Metabolic impact on chronic disease is the subject of a forthcoming seminar for nutritional therapists.

The event is being held on May 15 at Old Trafford, in Manchester, as part of the spring 2019 BioCare conference series.

Four pioneering experts in the field of nutrition and metabolism will be talking at the seminar, outlining the key role metabolic dysfunction plays in the development of chronic disease.

Dr Abbi Lulsegged (BSc MBBS MRCP FRCP) is a Consultant Physician with specialist interest in endocrinology and diabetes and will be speaking on the impact of blood glucose and diabetes.

The topic of endocrine disrupting chemicals will be addressed by Dr Rachel Nicoll (PhD, MSc, Dip ION), a medical researcher employed in both Umea University, Sweden and Helsinki University, Finland.

Alessandro Ferretti (Dip ION mBANT NTCC CNHC) has practised Nutritional Therapy for over 15 years and is a regular lecturer at UK Nutrition and Naturopathic colleges, as well as lecturing internationally on the subject of ketogenic diet and human performance. His topic takes on the theme of the inflammatory cascade.

Finally, 'Endocrine dysfunction and chronic disease – a naturopathic perspective' is the theme of the lecture being presented by Dr Roderick Lane (ND), a leading Naturopath, lecturer and author, who has been practising natural medicine for the last 35 years, specialising in endocrine issues and fertility.

Tickets cost £70 and can be bought at [www.biocare.co.uk/education](http://www.biocare.co.uk/education)

## EU campaign launched to promote food safety

A new campaign created by a coalition of organisations has been announced in a bid to promote the EU's food safety system.

The European Food Safety Authority (EFSA), EU Member States and the European Commission have teamed for #EUandMyFood, with the aim being to remind EU citizens how we all benefit from the European food safety system that was created in 2002 under the General Food Law.

On the launch of the campaign, EFSA Executive Director, Bernhard Url, explained: "I'm a passionate believer in the European integration project. As we head into the European elections in May, it's timely to remind ourselves how the EU makes a positive impact on our daily lives, often without us realising it. For EFSA and our partners in the EU Member States and at the European Commission, our contribution is food safety."

"EUandMyFood is about having safe and nutritious food in Europe that we can trust. It's about having respect for the health of our animals and how we treat them. And it's about being responsible for our environment – the soil, water and air – which sustain the food and feed crops that we and our animals, respectively, eat."

Jointly promoted by EFSA and national food safety authorities in EU Member States with the support of the European Commission's Health and Food Safety Directorate General, a series of short films, animations and a website have been created, in all 24 official EU languages, that recaps how EU citizens benefit from the highest food safety standards in the world.

## Lack of understanding among consumers regarding health claims identified

A new study has raised concern at a lack of understanding among consumers around what health claims are.

The Nutrition and Health Claims Regulation (NHCR) aims to provide consumer protection whilst supporting future innovation and fair competition within the EU food industry. However, consumers' interpretation of health claims is less well understood and so researchers, writing in the journal, *Nutrients*, set out to examine the levels of understanding, explaining that the plethora of nutrition and health claims appearing on food products in Europe has been seen as a cause for concern due to the lack of harmonised approach to the substantiation of such claims and their potential to mislead the consumer.

Looking at countries that included the UK, Germany, The Netherlands, Slovenia and Spain, the researchers found that there is a lack of evidence on the extent to which consumers are able to understand claims defined by this regulatory framework. Utilising the Multiple Sort Procedure (MSP), the study was said to provide useful insight into how consumers make sense of claims and how claims may be optimised to enhance appropriate consumer understanding. They suggest consumers may not consciously differentiate between a nutrition claim and a health claim in the way that regulatory experts do and provide insight into where this might occur. A consumer-derived typology of health-related claims based on three key dimensions is proposed: Familiarity with the nutrient, substance or food stated in the claim; statement type in terms of simplicity/complexity; and relevance of the claim, either personally or for a stated population group.

In conclusion, the researchers commented: "The results from this study suggest that consumers' ability to process health and nutrition claims is impacted by a range of factors, but primarily

whether the nutrient or substance is recognisable to them as being relevant or important to food or health in some way. When a claim refers to an unfamiliar nutrient, they appear to find the claim less understandable or credible.

"Also of importance in terms of consumer understanding and acceptance of health and nutrition claims is whether the claim is recognisable as being relevant for them as an individual or for other specific population groups, and this construct was clearly reflected in the free sort strategies utilised by many of the participants across all the countries."

They continued: "A number of participants across all the countries indicated that they would be unlikely to engage with the more detailed, complex claims when shopping."

Conversely, some participants expressed the desire for more information, or perhaps better clarity, with respect to the nutrition claims, particularly those related to fat and sugar.

"The outcomes of this research suggest important recommendations for improving the communication of healthier food choice. Our results demonstrate that consumers may not consciously differentiate between a nutrition claim and a health claim in the way that is expected by the NHCR regulation. Future research could seek to build on the outcomes of this study across a more representative population sample to explore more fully these important contextual factors and their impact on communication of appropriate healthier food choices. There is also potential to explore the outcomes of this research within the framework of expert theories, such as Meaningful Learning and other consumer information models to establish how well these consumer-derived constructs fit with these models. Further research is also needed to explore consumer understanding in more ecologically valid environments."



# THE ANCIENT HERB WITH MANY MODERN BENEFITS



## Why your clients should take ginkgo and how to help them choose a supplement

**I**t has been used as a herbal remedy for over 5,000 years, but ginkgo biloba also has decades of robust scientific research to back up its many potential benefits. These range from boosting circulation and mental function to supporting common conditions, including Raynaud's phenomenon and tinnitus. So, how does it work?

### GINKGO BILOBA IN ACTION

The ginkgo biloba tree produces characteristic fan-shaped leaves, which contain a range of biologically active compounds, including ginkgo flavone glycosides and terpene lactones. Together, these natural compounds demonstrate a range of benefits to human health, including antioxidant action (protecting cells from environmental pollution) and boosting blood flow to the extremities (such as hands, feet and even the brain).

So, what can ginkgo do for your clients?

### MEMORY AND BRAIN HEALTH

Taking care of mental health is vital for good quality of life, especially as we get older. Ginkgo biloba has been

investigated in various areas of brain health, including memory, concentration and age-related decline.

In one clinical trial featuring 333 people with dementia, those taking a standardised ginkgo biloba supplement for 24 weeks experienced improved cognitive functioning, decreased aggression, depression and anxiety<sup>1</sup>. In a similar study in those without a dementia diagnosis, a standardised ginkgo supplement taken daily over three months was able to improve cognitive function and reaction times compared to placebo<sup>2</sup>.

One of the main proposed actions for this benefit is that ginkgo is able to improve circulation to the brain, improving oxygen and nutrient delivery throughout the busy organ<sup>3</sup>.

Trials also demonstrate that ginkgo may show reliable potential in supporting memory. In one trial, standardised ginkgo biloba supplements were able to boost memory and mental processing speed in as little as six weeks versus placebo pills.

### TINNITUS

Tinnitus can be exceptionally irritating to the sufferer,

often characterised as hearing noises that aren't actually present in the environment. These noises include buzzing, humming, hissing or ringing. It's not clear what causes tinnitus but is believed to be multifactorial, with poor circulation to the ears being a possible cause.

Ginkgo biloba is traditionally used to relieve the symptoms of tinnitus and has shown to be an evidence-based treatment option when using a standardized supplement<sup>4</sup>.

### RAYNAUD'S – MORE THAN JUST COLD FEET

Thought to be caused by sensitive blood vessels that cause poor circulation to the extremities, Raynaud's phenomenon is typically characterised by cold and painful hands and feet, even at relatively mild temperatures.

Ginkgo biloba is traditionally used to relieve the symptoms of Raynaud's and has been shown to lower the number of attacks in clinical trials, versus placebo<sup>5</sup>. One proposed mechanism for this effect is ginkgo's ability to boost circulation and delivery of warm blood



to the hands and feet.

## HELP FOR TIRED LEGS

Various studies show that ginkgo biloba supplementation can reduce symptoms of intermittent claudication, a condition caused by poor circulation in the legs, which causes pain (especially in the calf) when walking.

A meta-analysis found that ginkgo biloba supplementation decreased the symptoms of these conditions, including the ability to walk greater distances without experiencing tired and painful legs<sup>6</sup>.

## THE POTENTIAL IN STROKE RECOVERY

Taken in combination with certain medicines, ginkgo biloba may support recovery after a stroke. A recent study demonstrated that the combination of aspirin and ginkgo biloba supplementation improved recovery rates of those who had suffered from an ischaemic stroke, versus placebo.

The major study involving 348 patients who had experienced an acute ischaemic stroke in the previous week took either aspirin (a common medicine advised after a stroke) or a combination of both aspirin and ginkgo biloba<sup>7</sup>.

## THE IMPORTANCE OF QUALITY

When it comes to herbal products, quality and safety go hand in hand.

There are two main ways to help ensure your ginkgo product is safety assured. Primarily, seeking a ginkgo product that holds a traditional herbal registration (THR) licence shows that the product has the necessary quality assurance and documentation level

to demonstrate safety. This is usually indicated with a THR symbol on the box.

Secondly, a ginkgo product produced under pharmaceutical control severely restricts the risk of contamination, as this is a strict level of quality assurance the product has to go through.

## STANDARDISING

Ginkgo has many herbal components in each leaf, but not all of them have an impact on health. A standardised ginkgo extract ensures that the highly effective flavone glycosides and terpene lactones are at a level which in clinical trials, has demonstrated to be beneficial to health. Non-standardised ginkgo products are cheaper but also unlikely to compare to the ginkgo used in most studies.

## ANTIOXIDANT POTENTIAL

As a key benefit from ginkgo biloba, it's important to secure an extract with a high antioxidant ability for clinical effect.

## CONCLUSION

Ginkgo biloba can be an incredibly effective herbal option for many conditions, with research showing benefits in brain health, Raynaud's, tinnitus and circulatory support.

To get the best out of the supplement, it's important to consider a THR licensed and standardised product that shows a dedication to high levels of quality assurance and a formula shown to deliver its many potential benefits.

• References available on request.

# Help from head to toe

- ✓ Only Licensed ginkgo biloba available on the UK market
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- ✓ Raynaud's syndrome symptoms\*
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# In Research

*Nutrition I-Mag* rounds up the latest research studies in the nutrition world.

## Researchers in genetic study discover how gut bacteria keeps us healthy

An international team of scientists led by the University of Glasgow has published new advances in our understanding of the role of our gut bacteria.

Described as breakthrough findings, the team of researchers say they have found a new advance in how bacteria in our gut can provide positive health benefits.

The study, published in *Nature Chemical Biology*, provides evidence that it may be possible to design drugs that will mimic these positive health benefits in a way that might be used to treat diseases such as type 2 diabetes.

Scientists think one possibility is that gut bacteria, by fermenting starches in food such as oats and pulses (like beans and chickpeas), produce compounds called short chain fatty acids (SCFAs). One of these SCFA's is acetic acid, the main component of vinegar. Once produced, these SCFAs activate specific receptor proteins in our body and these receptors, once activated, can provide health benefits.

In the four-year study, the Glasgow team used a combination of genetics and pharmacology to ask if one of these receptor proteins – called short chain free fatty acid receptor 2 (FFA2) – when activated selectively by drugs generated responses in the body that underpin the health benefits of gut bacteria.

Andrew Tobin, Professor of Molecular Pharmacology at the University's Institute of Molecular Cell & Systems Biology, commented: "Through a clever genetic trick, we have been able to determine firstly, that the levels of glucose in our blood and fat in our bodies can be controlled by gut bacteria. This is done via a specific receptor protein in our body, and we believe that the positive health benefits of gut bacteria can be mimicked by drugs that activate this receptor protein."

The scientists believe that not only can FFA2, which is normally activated by acetic acid generated by gut bacteria, control these key processes important for our health and wellbeing but, importantly, that this receptor protein could be a target for new drugs in diseases where our response to food intake is dysfunctional, such as in type 2 diabetes.

"This is a major advance in our understanding of how our bodies respond to food and how the bacteria in our gut provide health benefits," Professor Tobin added. "Our study not only advances our basic understanding of how the gut microbiome works in health and wellbeing but also provides the framework to design drugs that can mimic the health benefits of the gut microbiome."

"Whereas many people are trying to capture

the health benefits of the gut microbiome through probiotics, our study indicates that we can bypass the bacteria in our gut and directly target our bodies' receptors with drugs that mimic the gut bacteria to provide health benefits in diseases such as type 2 diabetes."

The work was funded by the Biotechnology and Biosciences Research Council (BBSRC) and the Medical Research Council (MRC).



## Power of green tea in new study

A laboratory study has confirmed the calming benefits of green tea.

Researchers writing in the *Journal of Medicinal Food* explained how they investigated whether the contents of a cup of green tea could have specific calming properties after a stressful experience.

The in vivo study was carried out to try to understand whether components of green tea can help with post-traumatic stress disorder (PTSD). In particular, the antioxidant polyphenol found in green tea, a catechin, known as epigallocatechin-3-gallate (EGCG), has been shown to help relieve symptoms of anxiety and depression.

The study found that a single prolonged stress event caused an impairment in cognitive function. However, when EGCG was given daily for 14 days after stress, the impairment improved. Based on their findings, the authors proposed that EGCG could play a useful therapeutic role for people suffering post-traumatic stress disorder.

Commenting on the study, Dr Carrie Ruxton, from the Tea Advisory Panel (TAP), noted: "The presence of natural polyphenols, such as the antioxidant EGCG present in green tea, plus those seen in black tea, have been linked with a number of beneficial effects, including heart health, gut health and even weight management. This new study shows that EGCG also has the potential to ameliorate some of the harmful consequences after experiencing a highly stressful situation."



## Mobile apps may better help people manage health, research finds

Our modern, technology-driven society may help us to better manage our health, according to researchers, who have found that mobile apps can improve nutrition in those with chronic diseases.

Researchers, writing in the *Journal of The Academy of Nutrition and Dietetics*, explained that while dietary interventions are effective prevention and treatment strategies for chronic diseases, they require extensive commitment, time, and resources, reporting that dietary mobile apps have gained popularity and are thus being incorporated into dietary management.

The researchers assessed the effects of the use of dietary mobile apps on nutritional outcomes in adults with chronic diseases through a systematic review following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines using MEDLINE, PubMed, Embase, and CINAHL

databases.

Intervention studies evaluating the nutritional outcomes of dietary apps, published in English between January 1, 2007 and November 15, 2017 were included.

Nutritional outcomes, categorised as food-/nutrition-related, anthropometric measurements, pertinent clinical/biochemical data, and nutrition-focused physical findings, were extracted from the included intervention studies.

Pooled estimates showed a significantly greater decrease in weight, waist circumference and energy intake when an app was used compared to control.

"The findings of this systematic review and meta-analysis indicate that dietary mobile apps are effective self-monitoring tools, and that their use results in positive effects on measured nutritional outcomes in chronic diseases, especially weight loss," the study concluded.



## Prebiotics in the young found to be important during cold season

New research has suggested that children supplemented with prebiotic inulin-type fructans can support them during the cold season.

The researchers investigated healthy children aged three to six and the impact of supplementing during the cold season with a prebiotic inulin-type fructans product with shorter and longer fructan chains.

The results have been published in the journal, *Beneficial Microbes*, with the

resulted in a selective modulation of the gut microbiota composition. It was found that relative abundance of *Bifidobacterium* was significantly higher in the prebiotic group, compared to the control group and this effect was found for all three enterotypes. Antibiotic administration decreased the relative abundance of *Bifidobacterium* in both groups. Nonetheless, children of the prebiotic group receiving antibiotic treatment displayed significantly higher levels of



researchers reporting that these beneficial effects may be connected to the specific modulation of children's gut microbiota.

The study was a randomised, placebo-controlled trial with 258 healthy children who consumed 6g a day of prebiotic inulin-type fructans or maltodextrin. During the course of the study, faecal samples were collected and subject to targeted qPCR analysis and phylogenetic profiling by multiplexed high throughput sequencing of the prokaryotic 16S rRNA gene PCR amplicons.

The microbiota composition of the cohort could be clustered into three distinct constellations (enterotypes). Prebiotic intake

*Bifidobacterium* than children receiving the placebo control.

In conclusion, the researchers commented: "Prebiotic supplementation induced specific changes in the gut microbiota composition of children aged three to six years. Moreover, it attenuated antibiotic-induced disturbances in the gut microbiota composition as shown by higher relative abundance of *bifidobacteria* at the end of the antibiotic treatment in the prebiotic group. With the previously reported benefits on immune function, the study contributes to the evidence on the immune-modulating effects of prebiotics through gut microbiota modifications."

# New to market

*Nutrition I-Mag* brings you the latest product developments in the nutrition world.

## BETTERYOU UNVEILS WORLD FIRST WITH VEGAN SPRAY

Targeted for those following a plant-based diet, the world's first vegan oral spray has been developed by BetterYou.

Vegan Health Oral Spray has been formulated with four nutrients that are considered to be lacking in a plant-based diet. These are vegan certified vitamin D3 at an optimum strength of 3000IU, 6µg of vitamin B12, 5mg of highly bioavailable ferric EDTA iron, and 150µg of iodine.

Boasting a natural mixed berry flavour, it is designed to be absorbed through the inner lining of the mouth, bypassing primary processing by the digestive system, providing a convenient and effective alternative to tablets and capsules.



It is also the first product from the BetterYou range that is contained in a bottle made from 70 per cent Ocean Waste Plastic. Recovered from the Indian Ocean, the Caribbean Sea and the Philippine Sea, along with 30 per cent post-consumer recycling (PCR), it is also 100 per cent recyclable.

## ENHANCING DIGESTION

G&G Vitamins continues to expand its portfolio with the creation of a further gut-targeted product.

Digesta Enhance is a unique formula that has been developed to enhance the body's complex digestive system and includes digestive enzymes and bitters.

It is made with a blend of natural ingredients, including lipase, protease, peppermint leaf, fennel seed, bromelain, papain and ginger extract.



## ENZYMEDICA DEVELOPS RANGE WITH OMEGA GUT BLEND

Aqua-Biome has been developed by the experts at Enzymedica to support the microbiome.

Made with the highest amount of DPA of any fish oil products on the market, Enzymedica says the supplement brings a new understanding of the ideal omega3 DPA-EPA-DHA ratio.

Enzymedica, in conjunction with Dr Michael Murray, has developed the long-awaited innovation to this market, and is the first fish oil to be certified by The Clean Label Project and Friends of the Sea.

Using TMET technology during processing, Aqua-Biome supplements have a higher ratio of DPA omega oil than other omega products. The body converts this master omega to either EPA or DHA depending on individual needs.



## HTC EXPANDS RANGE OF PRODUCTS

The range at supplements supplier, HTC Health, has developed with the addition of a selection of new products.

The UK wholesaler of health supplements has announced the addition of 30 new lines, categorised within an easy to digest stocklist available online on its website. In the new layout, practitioners can view the whole portfolio split by the main health benefit, making it simple to navigate through the list of products.

By adding many new individual vitamins and minerals, such as vitamins from group B, natural vitamin E, potassium and zinc tablets, as well as offering some unique mixes of ever popular compound formulas, including cod liver oil with multivitamins and the likes of fish oil with coenzyme Q10, HTC Health allows practitioners to broaden their ranges and make it easier for them to find their place within the busy VMS market.

Among the new additions is several new eye care lines, including vegan lutein soft capsules and a new Hair, Skin and Nails gummy.

# BANTNews

The latest developments from the leading professional body for Registered Nutritional Therapists, BANT.



## NUTRITION RECOMMENDATIONS IN THE AGE OF CLIMATE CHANGE

**E**ven before the publication of the *Food in the Anthropocene: The EAT-Lancet Commission on Healthy Diets from Sustainable Food Systems* (Willett, 2019), debate has been growing on how humans should eat better, not only for health, but also to protect our fragile planet. The urgency of the issue, both in terms of the growing obesity and chronic illness crisis, and the climate change catastrophe, has resulted in strong partisan opinions on both sides of the story.

In nutrition terms, to coin a Dr Chatterjee phrase, BANT Registered Nutritional Therapists and Nutritionists are 'diet agnostics' and, with this in mind, BANT has researched this issue from a 'non-partisan' view to provide information considering all sides relating to human nutrition and agriculture and the environment.

Humans are metabolically and physiologically omnivores (Mann, 2018) and, therefore, need the nutrients provided within animal protein – either by consumption of the animal protein itself or via adequate supplementation, to thrive. This is a scientific fact. The premise that humans have to change their ways in order to protect their planet is also a scientific

fact. What needs to be examined is how to reconcile the two.

Undeniably, it is now urgent for us to consider ways to provide food for the growing population, estimated at nearly 10bn by 2050, while still protecting our fragile planet. The UN Agenda for Sustainable Development 2030 (United Nations, 2015) includes three agriculture and nutrition related goals and whilst these were agreed in 2015, the plan has, since then, been mired in a quagmire. This lack of resolution translates into lack of action (McNeil, 2019). To coin a phrase, the UN and its members are fiddling about considering which hose to buy when their house is already burning.

In very simplistic terms, because there are many, many variants and shades of belief, there are two main camps. Camp one is the 'productionist' approach, which considers that by making agriculture more productive and efficient by use of fertilisers, machinery and industrialised farms, the goals of feeding the poor and sustainability will be met.

The other main camp states that large-scale, chemical based farming is damaging the planet and thus unsustainable. They follow the suggestions of IDDDRI published report, which

advocates that it is possible to transition to agro-ecology that will allow European farms to feed the population by using organic farming practices (Poux and Aubert, 2019).

In this mix comes other arguments, such as the meat versus plant-based vision of agriculture. Research such as the *EAT-Lancet* report (Willett, 2019) and a report published from The Food Climate Research Network (FCRN, 2017) support a drastic reduction in meat consumption and thus production, and advocate for a mainly plant-based diet. On the other hand, The Sustainable Trust (2017) argues for a move away from intensive farming, particularly mono-crop or mono-livestock farming and a return to a more traditional livestock/crop rotation.

Here are BANT's top tips for nutrition in the age of climate change:

■ **Follow a reductarian diet:** The Western diet encourages the consumption of animal-based protein multiple times a day. As Registered Nutritional Therapists know, this isn't necessary for health and is clearly detrimental to the planet. Consider eating three portions of animal protein per week (including oily fish,



eggs and dairy), which would cover most micronutrient needs (vitamin B12, omega 3, iodine and iron). Remember, a portion of animal protein is about the size of a pack of playing cards.

■ **When meat is consumed**, try to avoid intensively farmed meat. Grass-fed ruminants from a local farm would be the ideal environmentally.

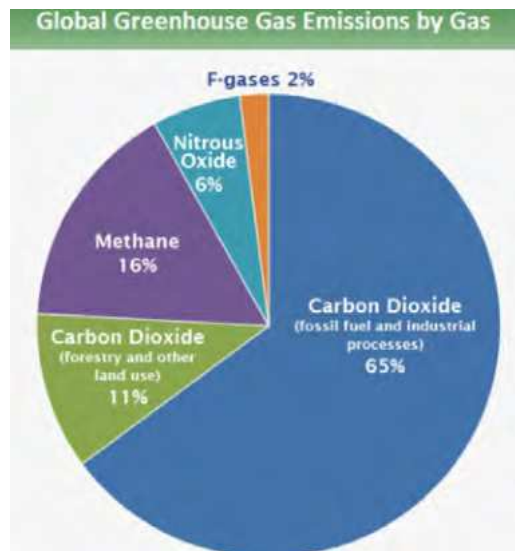
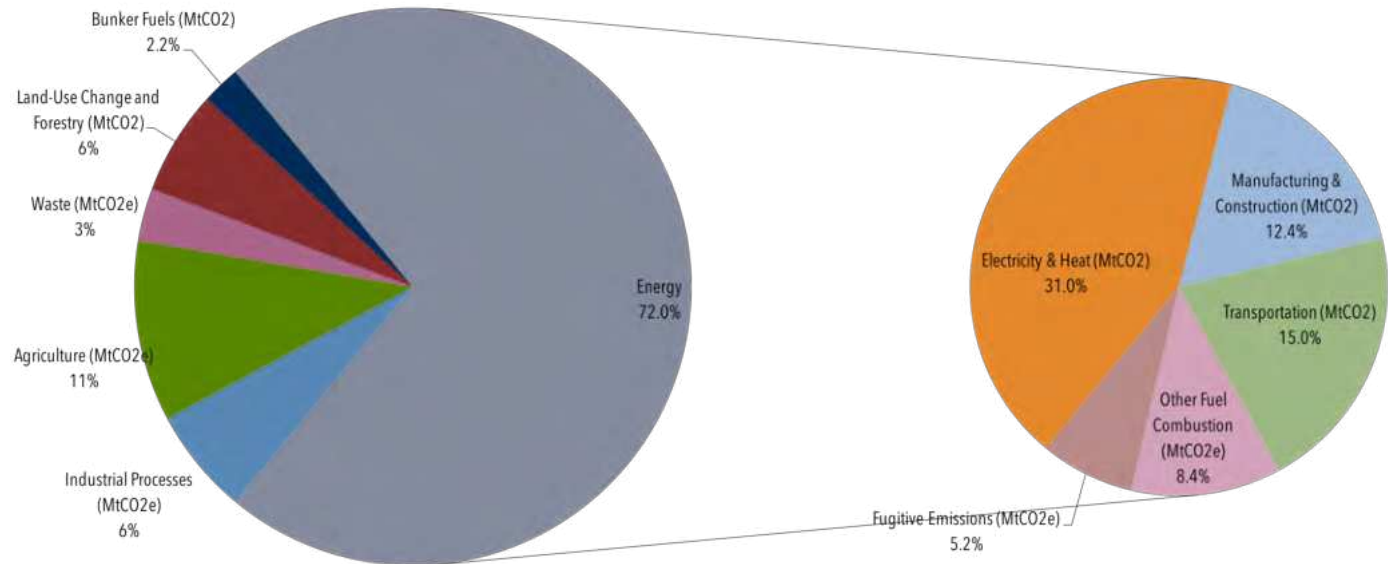
■ **Many cultures versus monocultures**: Eat a variety of plant products, not just the main staples of maize, potatoes, rice and soybeans. The improved variety will result in a greater microbiome diversity, which research has shown may improve health (Singh et al., 2017) and diverse agriculture is also better for the environment (Mariotte et al., 2018). Go organic at least some of the time. Pesticides, growth agents and antibiotic use in agriculture is a relatively new concept, introduced post the Second World War. Organic versus modern agriculture is a whole topic for itself but avoiding a cocktail of chemicals with every mouthful and allowing the natural biodiversity of the soil evolve are key arguments (Gonzalez et al., 2019).

■ **Eat less and less often**: It is in the interests of food manufacturers to encourage customers to eat more (Steenhuis & Poelman, 2017) and more often (Sadeghirad et al., 2016) and they actively plan for it as part of their marketing. Increasing amounts of research relating to intermittent fasting actually highlights that going back to the old-fashioned three meals a day (or even two) is actually much better for health (Manoogian & Panda, 2017).

■ **Go local as food transport** is linked to greater global greenhouse emissions. Support local producers by purchasing local and save carbon miles at the same time.

■ **Eat seasonally**: Forcing fruits and vegetables to grow out of season and quickly requires many more resources than eating seasonally.

■ **Avoid plastic packaging** and if you can't avoid it, then recycle. Avoidance is always better as actual recycling percentages of plastic still remain low at this time and once plastic is in the environment it degrades into microplastics, which are then found in our water and our soil (Royer et al., 2018; World Economic Forum, 2017).



# Join us at the 2019 IHCAN Summit

Be sure to secure your place at the leading educational event of the year, the IHCAN Summit.

**S**aturday, June 29 is the date for the renowned IHCAN Summit and expo and now is the time to ensure your place is secured, with space selling fast.

The annual summit brings together the same industry-leading, innovative education that can be found at the IHCAN Conferences but on a bigger scale, and held in a modern, larger venue, 155 Bishopsgate, London.

Naturopathic physician, Dr David Brady, ND, the fibromyalgia and chronic fatigue expert, is one of the keynote speakers, alongside Dr Tom O'Bryan, who will be returning to London due to phenomenal demand to present on a topic of his choice. There are more speakers to be confirmed, so it is set to be a fantastic series of talks.

The unique set up of the day ensures that delegates don't miss any presentations and still have time to visit

the 55-plus exhibitor stands and network with fellow practitioners. Attendance of the seminars will earn delegates a total of 5.5 CPD hours.

In addition, there will be a three-course healthy, gluten free buffet lunch and refreshments available for every visitor throughout the day, while delegates will also be treated to a free goody bag, live recipe demos from exhibitors, and a free sample of nutritional goodies, courtesy of The Natural Dispensary.

Confirmed exhibitors include Bio-Kult, CytoPlan, doTerra, HealthAid, New Roots Europe, Nutri Advanced, Rio Health, The Natural Dispensary, TMC Ventures, OptiBac Probiotics, Zyto and many more, so it really is a day not to be missed.

Early-bird tickets for the summit cost only £65 until June 10. Book online at [www.ihcansummit.co.uk](http://www.ihcansummit.co.uk) or call the team on 01279 810080.



Integrative Healthcare and Applied Nutrition  
**IHCAN** 2019  
29 June 2019, London summit

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## Still to come in the IHCAN Conference series

Following the success of the two IHCAN Conferences hosted in March, the rest of the series is set to be just as exciting.

The conference on May 11 is already sold out as we welcome naturopath Ben Brown and Dr Allison Siebecker, who is regarded as the natural medicine authority on small intestinal bacterial overgrowth (SIBO). She will be presenting on 'SIBO, IBS and beyond: Getting the gut better with first- and second-line therapies.'

On September 14, Dr Dale Bredesen will reveal the latest iteration of his nutrition-based, personalised, precision medicine approach that has succeeded in reversing cognitive decline and further steps needed to make Alzheimer's a rare disease.

To be added to the waiting list for this sold out event, visit [www.ihcanconferences.co.uk](http://www.ihcanconferences.co.uk)

To end the series, on November 23, Patrick Holford will be joining Dr Elisabeth Philipps for the day as they individually present on the topic of 'Two approaches to gut, brain and immunity: CBD and the Hybrid Diet for repair and regeneration'.

## BOOK YOUR PLACE

You can book your place for the IHCAN Summit at the early bird price of £65 until June 10.

Visit [www.ihcansummit.co.uk](http://www.ihcansummit.co.uk) or call 01279 810080.



Integrative Healthcare and Applied Nutrition

**IHCAN** 2019  
29 June 2019, London summit

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# The UK's largest INTEGRATIVE HEALTHCARE EVENT

Back for 2019, the IHCAN Summit brings you the same industry-leading, innovative education you are used to from the IHCAN Conferences but on a bigger scale, in a modern, larger venue.



Tom O'Bryan



Dr David Unwin



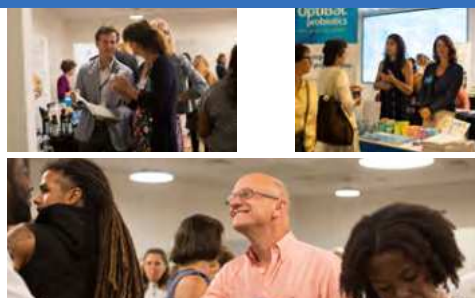
Dr David Brady



Early-bird  
booking  
now open

## Book your ticket to enjoy:

- ▶ Three expert speakers
- ▶ 5.5 CPD hours
- ▶ 50 + of the industry's leading suppliers
- ▶ Exclusive show-only deals and discounts
- ▶ A free healthy, gluten-free buffet lunch and refreshments all day
- ▶ Live recipe demos
- ▶ Free smoothie upon arrival
- ▶ Free goody bag
- ▶ A free sample box of nutritional goodies from The Natural Dispensary



Early-bird tickets cost only £65 (inc.VAT) until 10 June. Book online at [www.ihcansummit.co.uk](http://www.ihcansummit.co.uk) or telephone 01279 810080.



# NUTRITIONAL THERAPY FOR JOINT HEALTH

The practitioner recommended response to supporting clients and their musculoskeletal health.

**T**he expert consensus is that joint pain – in the main, arthritic related complaints – are among the most common issues you are likely to see in clinic. This shouldn't come as a surprise when you consider that arthritis alone is known to affect some 10m people in the UK – and is rising.

"Based on the available statistics, more and more people are suffering with conditions affecting their joints. Because most arthritic conditions are chronic and degenerative, it is really important to support your joints nutritionally as soon as you spot the first signs of damage or inflammation," Marta Anhelush, Clinical Nutrition Manager at



BioCare, advised.

"Arthritis is actually an umbrella term for different musculoskeletal conditions. They include osteoarthritis, rheumatoid arthritis and gout. Osteoarthritis is by far the most common type. In 2013, for example, over eight million people were treated for osteoarthritis.<sup>1</sup> On the other hand, rheumatoid arthritis is an auto-immune condition, in which your immune system attacks your joints. It is much rarer, although, like most other auto-immune conditions, the numbers of cases are on the rise. Most types of arthritis share common characteristics; chronic inflammation, pain, swelling, stiffness, reduced mobility and progressive destruction of joint tissue."

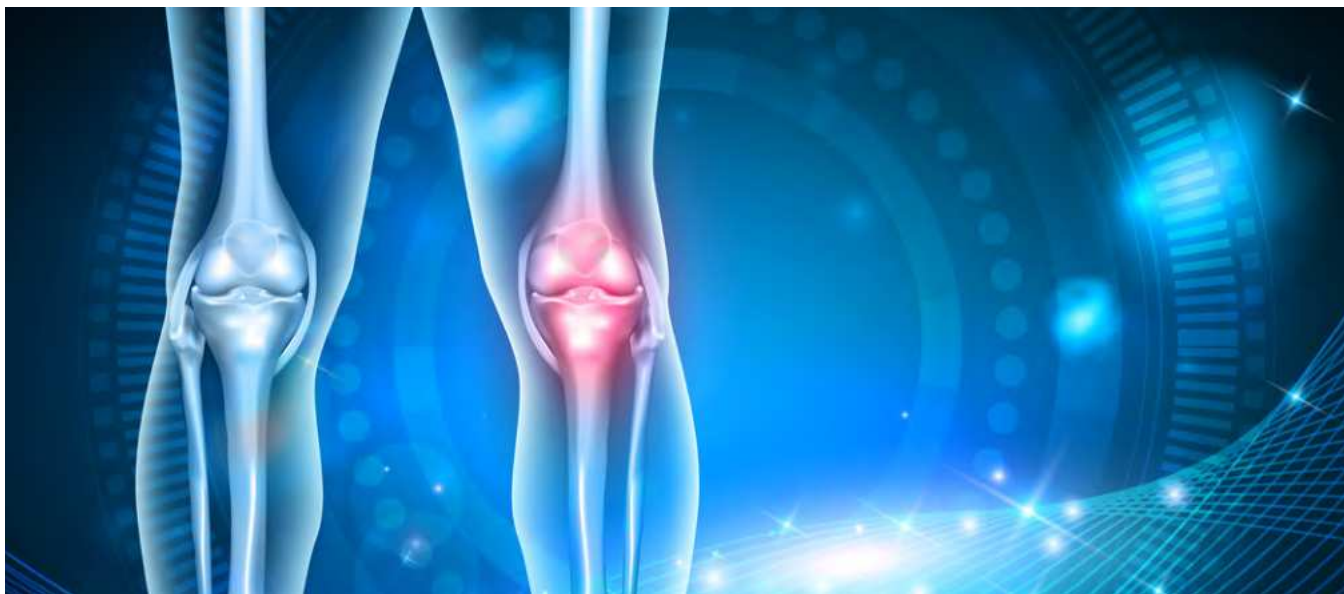
Keeley Berry, Nutritional Expert and New Product Development Executive at BetterYou, added: "Arthritis is the most common cause of joint pain, affecting over 10m people in the UK alone. It is a regular misconception that arthritis only occurs as we get older, it can affect people of all ages, including children, with approximately 15,000 children and young people being affected by the condition.

"Peak bone mineral density is reached during your mid-20s. After the age of 35, bone loss increases gradually as part of the natural ageing process, meaning prevention of bone density loss is essential and people should be proactive from an early age."

Alice Bradshaw, Head of Nutrition at Terranova, advised: "Practitioners are likely to see a range of joint related issues, ranging from inflammation, pain and stiffness, sports injuries and age-related joint degeneration. Conditions affecting the joints can be linked to long-term dietary choices, auto-immune conditions, lifestyle factors and even genetic factors. Sports injuries, whether recent or historical, can cause poor joint health and, of course, ageing is a common factor."

## JOINT DEGRADATION

One of the most common signs you have an arthritic



condition is when your joints degrade.

Anhelush advised: "Joint degradation is characterised by inadequate synthesis of collagen and glycosaminoglycan to renew tissue in the face of degradation caused by physical stress, trauma, autoimmunity or ageing. Oxidative stress and inflammation are also upregulated, creating further breakdown. The result is weak, damaged or inflamed tissues, with restricted or painful movement. However, there are a particular number of nutrients that play a significant role in maintaining healthy joints, in particular, vitamin D, vitamin C, zinc, magnesium and copper, which act as cofactors for collagen production, for example."

Salma Dawood, Technical Assistant at Viridian Nutrition, continued: "Commonly prevalent in the elderly population, arthritis causes joint pain, swelling, discomfort and stiffness. Arthritic symptoms may also occur in younger populations, particularly in athletes that do not allow for recovery of joints after intense training," she explained.

Berry added: "For the older population, most causes of joint pain are associated with inflammation and arthritic conditions. Other common joint related issues are aches, pains, stiffness and injury-related swelling that is often sustained during exercise."

There are various contributory factors that need to be considered when you look at the health of a person's joints, some being more modifiable than others.

"Low level of physical activity and being overweight are key factors that increase our risk of developing a chronic joint condition and may also predispose us to injuries. Well-developed and strong muscles are also important to cushion and support our joints," commented Anhelush.

"Vitamin D is such an important nutrient and helps to regulate over 200 genes, a lot of which govern the function of our immune system, inflammation, as well as DNA replication and repair. Statistics show that up to 25 per cent of the general UK population may be deficient in vitamin D.<sup>2</sup> Individuals with rheumatoid arthritis, in particular, may benefit from increased

dietary and supplementary intake to help them manage their symptoms.<sup>3</sup> And a typical Western diet, high in processed food, caffeine and sugar, poor quality meat, and low in vegetables or an excessively high protein diet, can create an acidic environment, which can lead to more inflammation in the body."

## EATING FOR JOINTS

Joints can cause us pain, especially in the case of arthritic conditions, because they experience inflammation, and so it makes sense that any dietary regime should be focused on anti-inflammatory foods.

"Nutritionally, it is vital to consume an anti-inflammatory diet that is rich in fruit and vegetables and healthy fats to reduce inflammation. As inflammation is the root of osteoarthritis, optimal nutrition can play a significant role at targeting these symptoms," Dawood confirmed. "Eating an anti-inflammatory diet has been shown to improve joint health and reduce the onset of arthritic symptoms. This includes a diet rich in omega 3 fatty acids, for example, from fish or marine algae and colourful fruit and vegetables. Omega 3 fatty acids can reduce inflammation, while fruits and vegetables may neutralise harmful free radicals that can lead to diseases such as arthritis."

And Anhelush advised: "Inflammation is what causes pain and swelling and if it's chronic, it can significantly propagate joint degradation and inhibit natural healing processes. To reduce inflammation, include plenty of anti-inflammatory foods in your diet. These include oily fish (mackerel, sardines, wild salmon), which contain high levels of omega 3 fats EPA and DHA, herbs and spices, especially turmeric, ginger, cinnamon, rosemary, sage, and fruit and vegetables, particularly green leafy and cruciferous vegetables and berries."

Bradshaw continued: "The protocol for keeping joints healthy is the same protocol for supporting whole body health. Good nutrition and hydration, along with regular exercise will support healthy joints, while a poor quality diet, coupled with habits such as smoking, drinking



excess alcohol and inadequate exercise are all factors which will predispose a person to joint health issues. A practitioner is also likely to look at the gut health of the client as an unbalanced microbiome, intestinal permeability and food intolerances are all conditions which encourage systemic inflammation.

"Foods tend to either encourage or dampen inflammation. A diet high in pro-inflammatory foods such as refined carbohydrates, excess sugar, poor quality oils and processed foods will exacerbate any joint related health issues, whereas omega 3 fats (from oily fish or flaxseeds) and a diet which is rich in plant foods will support health joints.

"Encouraging clients to adopt an anti-inflammatory diet will go a long way to ease symptoms. Specifically, adding foods such as ginger, turmeric, walnuts, olive oil,

berries, oily fish or flaxseeds and plenty of vegetables can help to bring relief. Practitioners may also help clients to discover if there are any foods that they are personally reacting to which may be contributing to joint issues. Removing these can sometimes bring remarkably quick relief where there is pain and inflammation."

Other dietary advice includes cutting back on processed foods.

"It's important to focus on real, unprocessed ingredients, especially vegetables and good sources of protein, such as organic and free range meat and wild fish. Aim for seven portions of vegetables a day, ideally of different colours to provide a range of nutrients and antioxidants. Some people may also be sensitive or intolerant to a variety of foods, which can aggravate their arthritis. If you have rheumatoid arthritis in particular, it is commonly advised to avoid gluten-containing foods, as well as dairy," Anhelush advised.

"In addition, dietary lectins (found in grains and legumes) have been implicated in the damage to the gut wall observed in those with rheumatoid arthritis. Some people also react to solanine from nightshade vegetables (tomatoes, peppers, potatoes, aubergines and chilli). Although the evidence seems to be anecdotal, many people report improvement of symptoms after following a nightshade free diet."

Berry highlighted why the older we get, the greater the consideration for our joint health.

"Nutrition becomes more and more important for joint health as we age. As we get older, our production of hydrochloric acid reduces and this, in turn, reduces our ability to break down and absorb the nutrients from our food, therefore, supplementation is needed. The fact is that some nutrients are better supplemented via methods alternative to traditional digestive routes, so the key is to find the route into the bloodstream as quickly as possible."

She continued: "In terms of food and lifestyle factors, evidence suggests that the earlier we start to eat well and become conscious of the nutritional importance



of our diets, the longer we continue that path. A diet high in dark green vegetables, wholegrains and nuts is beneficial. In addition to calcium, magnesium, vitamin D and vitamin K, it's important to have a diet rich in vitamin C. This helps the body to make collagen, which forms cartilage, tendons and ligaments. Other important nutrients include carotenoid antioxidants, which can help to reduce cartilage breakdown and anthocyanins which reduce inflammatory chemicals."

## JOINT SUPPORT

There are likely to be many clients who could benefit from a programme of supplementation, depending on the condition and severity.

The most common you would recommend includes:

■ **Vitamin D:** "Low serum levels of vitamin D3 have been found inversely correlated with rheumatoid arthritis. Increased intake of vitamin D is associated with a lower risk of rheumatoid arthritis and significant clinical improvement, likely related to its immunomodulating potential.<sup>4</sup> Ideally check your levels and supplement accordingly with a well absorbed, emulsified form of vitamin D," Anhelush advised.

■ **Magnesium:** Berry explained: "Magnesium is an essential mineral to support bone health. Magnesium stimulates the activity of cells critical to bone formation, with magnesium deficient bones being larger, more brittle and susceptible to fracture. Also, without the presence of magnesium, calcium cannot be transported to the bones and can lead to the hardening of the arteries, osteoporosis and bone fractures."

■ **Glucosamine:** According to Anhelush: "Glucosamine hydrochloride shows improvement of pain in people with rheumatoid arthritis,<sup>5</sup> while chondroitin sulphate increases cartilage volume,<sup>6</sup> reduces pain,<sup>7</sup> duration of morning stiffness, and paracetamol use.<sup>8</sup> In one study, chondroitin in combination with glucosamine reduced OA symptoms of pain and stiffness from the second week of use.<sup>9</sup> MSM is a source of sulphur, and involved in pain control and tissue building. Excellent results

have been reported for pain relief in those with arthritis who took MSM.<sup>10</sup> MSM in combination with glucosamine showed even better efficacy in reducing pain and swelling, and function than individual agents<sup>11</sup>."

■ **Turmeric:** "One nutraceutical that has a long history in Ayurvedic medicine is turmeric, often used for the treatment of inflammatory conditions due to its potent curcumin content. Research has shown that curcumin molecules can interact with numerous molecular targets involved in inflammation and can pose as an alternative therapeutic treatment. One of its mechanisms involves blocking of the inflammatory cytokines to dampen down the inflammatory response," Berry highlighted.

■ **Essential fats:** "Supplementation with fish oils can significantly reduce the production of inflammatory molecules in the body<sup>12</sup> and has been shown to reduce joint stiffness<sup>13</sup> and pain.<sup>14</sup> Fish oil also increases collagen synthesis<sup>15</sup>," Anhelush advised.

■ **Calcium:** "As we naturally age, bones can become weaker due to a lack of calcium, which can cause extra strain on our joints to keep us mobile. Alongside vitamins K and D, calcium is one of the key nutrients that aids bone health. K2 and D3 are critical for calcium metabolism, as they both work together to ensure that calcium is directed out of the arteries and into the bones. Without enough of these vital vitamins, calcification within the arteries can occur," Berry explained.

■ **Gut support:** "Impaired protein digestion due to low stomach acid or enzymes could increase the impact of dietary allergens (gluten, dairy) by increasing the likelihood of immune reactions.<sup>16</sup> Probiotics including *Lactobacillus acidophilus*<sup>17</sup> and *salivarius*<sup>18</sup>, can reduce inflammatory markers and balance the immune system. Increase your fibre intake to feed the beneficial bacteria in the gut," Anhelush advised.

■ **Amino acids:** Berry pointed out: "The food we eat is vital for making sure our body functions at its best and provides us with essential amino acids that help to make collagen. For example, arginine is an amino



acid that is important for this process to ensure we have healthy, strong bones. Joint cartilage formation also requires the amino acid methionine as it produces sulphur. Studies have shown that cartilage in healthy individuals contains around three times more sulphur than those with arthritis."

And Bradshaw continued: "Incorporating nutritional and botanical supplements will be essential to get quick and effective results too. There are many supplements that have been shown to mediate inflammatory responses. These include vitamin D, omega 3 essential fatty acids, quercetin, boswellia, MSM, ginger, turmeric, tart cherry and many others. Many nutritional supplements combine two or more of these so it's not always necessary to take multiple individual supplements."

"Proteolytic enzymes are also worth considering in a joint health protocol. These are essentially digestive enzymes that break down dietary protein, however, when taken away from food, they enter the bloodstream, breaking down foreign proteins that are responsible for inflammation."

## THE NEED FOR ACTIVITY

Physical exercise is absolutely crucial for everyone, and for many health reasons, but when it comes to the joints, extra consideration should be taken.

Exercise is important – 'use it or lose it' is very apt here. The greater use of a joint will ease stiffness and helps to encourage maintenance. Non-use sends the wrong signals to the body and stems nutrient flow to that area," Berry advised.

Anhelush added: "Resistance training (weights, resistance bands) is very effective at strengthening bone,<sup>19</sup> increasing muscle tissue and aiding weight loss, hence reducing the overall pressure on the joints and promoting healthy and strong tissue that's more resilient to everyday wear and tear."

But Anhelush also raised the importance of being aware of the right exercise.

"Stepping away from arthritis, as part of a healthy lifestyle, more people are trying to engage in exercise – the likes of Parkruns or even marathons have never been so popular. We must remember that exercise, and especially distance running, can be very taxing on your joints. So, first of all, don't overdo it and remember to give your body rest post-exercise, and second of all, make sure that you include plenty of protein and joint-supporting nutrients in your diet on a daily basis. If you are serious about your exercise and frequently engage in competitions, consider supplementation, especially glucosamine, vitamin C and fish oils to give your body that extra bit of support to maximise your performance and prevent excessive tissue damage."

Interestingly, as part of this, excess stress can also take their toll on the joints.

Dawood commented: "Managing stress and anxiety is critical to overall health and preventing joint conditions. Additionally, controlling weight can reduce the strain on your joints, as obesity is a risk factor for osteoarthritis."



## EVIDENCE BASE

Research confirming the lifestyle and dietary connection when it comes to poor joint health is expanding all the time.

Anhelush highlighted: "The most recent, and comprehensive meta-analysis on supplements in osteoarthritis was done in 2010 and covered 54 studies and over 16,000 participants. It demonstrated significant effects in pain relief, reduced joint narrowing, and function compared to placebo, and without the digestive side effects caused by the anti-inflammatory medication, celecoxib.<sup>20</sup> More importantly, it is probably the first study of that calibre that confirmed that using glucosamine together with chondroitin is much more effective than using glucosamine on its own."

"Another supplement that has received a lot of attention in the recent years is collagen. A double-blind clinical trial investigating collagen hydrolysate supplementation identified significant improvement on supplementation with knee osteoarthritis, with supplementation improving joint comfort and reducing pain.<sup>21</sup> Marine collagen displays high bioavailability thanks to its high resemblance to human collagen and small molecular size, making them easy to transport across gut membrane<sup>22,23,24</sup>."

Dawood pointed towards the latest research into specific supplements and the joints.

"There is a plethora of recent evidence that suggests a potential use for omega 3 fatty acids, boswellia, and turmeric on optimising joint health. Also known as frankincense, boswellia may help reduce cartilage loss by lowering the inflammatory response. Turmeric, rich in curcuminoids, may also reduce joint-related issues such as swelling and pain," she commented.

# A PMS MANAGEMENT PLAN

*Nutrition I-Mag* offers an effective programme to help female clients manage symptoms of PMS.

The majority of women will experience symptoms of premenstrual syndrome (PMS) to some degree, some to the extent it will disrupt their day-to-day lives. Given the length of time that a woman experiences a menstrual cycle, it is clearly an area of great concern to a large portion of the female population, globally.

"Most women – indeed over 90 per cent – has suffered some level of PMS, including bloating, headaches and moodiness.<sup>(1)</sup> Factors which have been shown to increase the risk of PMS include a high level of stress or anxiety,<sup>(3)</sup> family history of depression,<sup>(4)</sup> and a personal history of post-natal depression<sup>(5)</sup>," Jenny Logan, Nutritional Therapist and Technical Training Manager at Natures Aid, advised.

And Helen Ford, Head of Nutrition at the Natural Health Practice, continued: "Fifteen years ago, doctors claimed that PMS did not exist. Today, it's one of the most common conditions suffered by women, with symptoms that can be anything from mildly inconvenient to positively debilitating. PMS is estimated



to affect 70 to 90 per cent of women and 30 to 40 per cent of women are believed to have symptoms severe enough to interfere with their daily lives."

And Claire Barnes, Nutritional Therapist and Technical Advisor at ADM Protexin, which has the Bio-Kult and Lepicol brands in its portfolio, pointed out: "Percentage figures for PMS vary widely; in Europe it is reported to be 4.1 per cent<sup>1</sup> whilst others suggest the symptoms occur in 95 per cent of women of reproductive age.<sup>2</sup> Of these women, about five per cent will experience more severe and debilitating symptoms,<sup>2</sup> now referred to as PMDD (Premenstrual Dysphoric Disorder).

"Interestingly, PMS appears to be more common in cultures and religions which perceive menstruation as being insanitary. Wherever religion has a positive attitude toward menstruation, positive feelings, and less anxiety and stress are observed. A woman's religion, therefore, can extremely affect her menstrual distress.<sup>1</sup> This indicates how psychological responses to menstruation could lead to PMS symptoms."

Vanessa Hitch, Naturopath, B.Sc.(CompMed), Adv Dip.



Nat, from Bio-Practica, also pointed out: “PMS can affect women during their reproductive or menstruating years from the time they start menstruation until it stops at menopause. On average, women in their 30s are most likely to suffer from PMS, however, women in their 40s are also prone to PMS and it can happen at any age during the reproductive years.”

## DIFFERENT TYPES OF PMS

If we look at what PMS actually is, Barnes commented: “Understanding the condition of PMS has both intrigued and confused scientists since ancient times. In fact, Hippocrates (over 2,000 years ago) was the first person to propose that behavioural changes were associated with the menstrual cycle.<sup>1</sup>

“PMS refers to a monthly recurrence of a combination of physical, psychological and behavioral changes in the luteal phase of the menstrual cycle.<sup>1</sup> The actual cause is still unknown and is likely to involve numerous factors, such as genetics, changes in levels of sex hormones and neurotransmitters, environmental factors, depression, migraine and lack of social and emotional support.<sup>1</sup>

“It has also been hypothesised that the immune system is suppressed in the luteal phase, giving pathogens the opportunity to increase their activities,

which in turn leads to development of PMS symptoms.<sup>1</sup> This theory is supported by the general improvement in symptoms seen in women taking antibiotics at this time.<sup>1</sup> Potentially, this could suggest that the gut microbiome could play a role in reducing the development of PMS symptoms through inhibition of pathogens and supporting the immune system.”

Ford added that PMS is, in fact, a set of symptoms that attracts differing opinions.

There has been an enormous amount of research into PMS and an equally enormous amount of confusion in terms of its cause and treatment. It is assumed that PMS has an effect on a woman’s general health by giving her any number of 150 different symptoms. But what if the situation is really the other way round? In other words, what if that woman’s general health is what’s causing PMS to manifest itself?” she questioned.

“If a woman has not been eating well, maybe lacking in certain vitamins and minerals, not exercising, suffering from stress and generally feeling run down, it is very possible that her body’s ability to produce the right balance of hormones and to utilise those hormones properly, each cycle will be seriously compromised (Tschudin S t al, 2010, Prevalence and predictors of premenstrual syndrome and premenstrual

dysphoric disorder in a population-based sample, Arch Women’s Mental Health, 13, 6, 485-94).”

Logan added: “The pool of symptoms that can be suffered is very wide and the combination and severity of symptoms will vary not just from woman to woman, but in some cases month to month. The symptoms can be split into two groups – physical and emotional.

“Physical symptoms will include<sup>(6)</sup> swollen and tender breasts, constipation and/or diarrhoea, bloating, cramping, headaches or migraine, backache and clumsiness. Emotional symptoms could include<sup>(6)</sup> irritability and anger, lethargy, sleep issues, food cravings, memory and/or issues with focus, anxiety and/or feelings of depression, mood swings and reduced libido. These symptoms can be very mild, but they can also become extreme, affecting quality of life. There are some women who suffer from PMDD (premenstrual dysphoric disorder). PMDD can make it difficult to work, socialise and have healthy relationships. In some cases, it can also lead to suicidal thoughts.”

Ford continued: “The personality changes associated with this time of the month can be very severe. Indeed, some women describe a ‘Jekyll and Hyde’ change, in which they literally become a different person pre-menstrually. There is a severe form and thankfully rare



form of PMS known as PMDD (pre-menstrual dysphoric disorder)."

We tend to just use the term PMS as an umbrella for a host of related symptoms, but interestingly, there are different types of PMS.

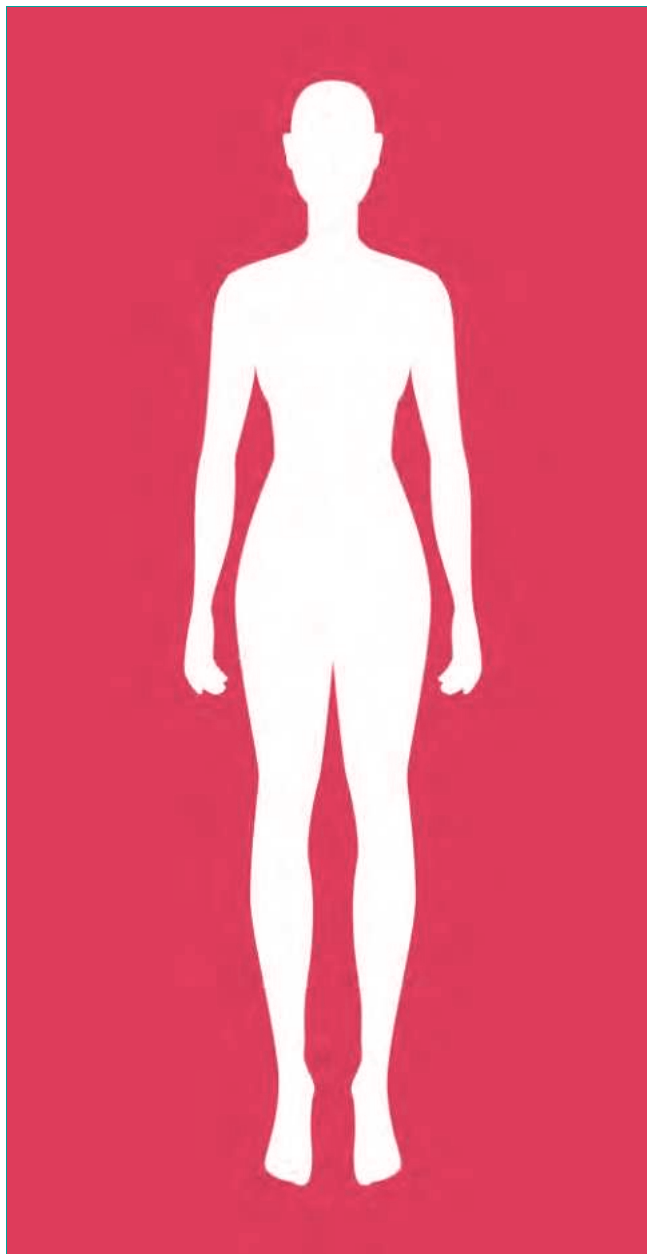
Hitch explained: "Symptoms usually vary in their type and severity for each woman. The causes are multifactorial and can be divided into five main areas and women may experience predominantly one or more of these PMS types:

■ **PMS Type-A symptoms include:** Anxiety, insomnia, irritability and mood swings. Usually brought about by elevated oestrogen and lowered progesterone levels. This is the most common form. Reducing dairy and sugar intake and considering natural medicines such as chaste tree (*Vitex agnus castus*), which support natural progesterone and hormonal balance, can help.

■ **PMS Type-C symptoms include:** Carbohydrate and chocolate cravings, dizziness, fatigue, headaches and sometimes vertigo. PMS-C is characterised by low serum magnesium levels and possibly higher insulin in the first half of the cycle. PMS-C can be helped by supplementing with a high dose magnesium citrate and making sure blood sugar levels remain stable throughout the cycle.

■ **PMS Type-D symptoms include:** Brain fog, confusion, depression, teariness and memory loss. Often an underlying imbalance includes low oestrogen and possibly low serotonin. Exercise, good quality sleep and a diet high in fresh fruits and vegetables and nutrients can help. If the symptoms of depression become severe, they may need to seek medical advice.

■ **PMS Type-H symptoms include:** Fluid retention (hyperhidrosis), weight gain, breast swelling, breast tenderness and abdominal bloating. PMS-H is often caused by elevated serum aldosterone, which cause



fluid retention. Taking magnesium, potassium and fluid-balancing supplements such as vitamin B6 and chaste tree can help. In addition, avoiding coffee and salt may also improve symptoms.

■ **PMS Type-P symptoms include:** Pain, inflammation, discomfort and swelling in the days leading up to menstruation and painful cramping for the first one to two days of the menstrual period. Magnesium can help greatly when taken throughout the month and then in higher doses if cramping occurs. It will help to relax the muscles and ease the pain."

And keep in mind that women can be pre-disposed to suffering with PMS due to a range of lifestyle factors.

"Women are most likely to experience PMS symptoms when they are stressed, have low or deficient magnesium, they have hormonal imbalance, such as excess oestrogen and or insufficient progesterone in the second half of their cycle, and are consuming lots of coffee, alcohol and sugary junk foods," Hitch explained

Margaux Vigneron, Nutritionist at HealthAid, continued: "The only direct known cause is the one genetically inherited; if a woman has family members who already had this syndrome, she is more likely to suffer from PMS. Another risk factor may be a deficiency in certain vitamins and minerals, such as vitamin B6, calcium and magnesium. It has also been shown that women with a BMI higher than 30 are three times more likely to have PMS than those with a normal weight. Smokers are twice as likely to have severe PMS symptoms compared to non-smokers."

## THE DIETARY EFFECT

Let's now look closer at the impact our nutritional status has not only on if a woman suffers with PMS, but to what degree.

"Diets low in magnesium (green leafy vegetables, nuts and seeds) have been shown to increase all PMS symptoms. Women who are magnesium deficient are much more likely to suffer from PMS. In addition, red blood cell magnesium levels were 31 per cent lower in women with PMS compared to healthy pre-menopausal women," Hitch advised.

"Excess intake of caffeine, alcohol, salt and simple sugars have also been shown to increase PMS symptoms. Reducing or avoiding dairy may benefit some forms of PMS and might be helpful for hormonal acne. Non-dairy calcium-rich foods, such as nuts, seeds, legumes and eggs, will ensure sufficient dietary calcium. Generally avoiding toxins in the diet and environment and improving the body's own liver and kidney detoxification processes can greatly help lift the body's burden of exogenous hormones (also known as endocrine disruptors)."

Vigneron added: "High levels of sugar in the diet shifts levels of the hormones, oestrogen and progesterone, which can also decrease levels of serotonin in the brain and this may affect a woman's mood and trigger PMS symptoms."

Logan placed the focus on essential fats, noting they are crucial for women.

"Many people are failing to consume enough omega 3 fats in their daily diet, and this can have an impact on PMS, as low levels of these essential fatty acids are linked to increased levels of inflammation, which will in turn aggravate the physical symptoms. Low levels of EPA and DHA have also been linked to an increased risk of depression, anxiety and poor concentration. This again will aggravate the emotional symptoms associated with PMS," she explained.

Bear in mind certain nutrients too which, if levels are too low, can lead to raised risk of symptoms.

"Calcium and vitamin D are thought to be potentially imbalanced in those who struggle with PMS. Studies suggest blood calcium and vitamin D levels are lower in women with PMS than in others and that calcium supplementation may reduce symptom severity <sup>(7)</sup>," Logan advised. "B vitamins have also been widely studied and accepted as being supportive for those suffering with PMS. Vitamin B6 has an EFSA approved health claim for supporting hormonal balance. A case-control study was conducted over a period of 10 years. The researchers found that higher intakes of dietary thiamine and riboflavin for approximately two to four years was associated with a significantly lower incidence of PMS <sup>(8)</sup>."

Iron too plays a critical role in many aspects of women's health.

"Many women are at risk of iron deficiency. As well as its vital role in the formation of red blood cells and oxygen transport, it is also involved in the synthesis of serotonin. A case-control study was also carried out over 10 years assessing the impact of iron on PMS. This study found that high intake of non-heme iron through supplements or plant sources was associated with a lower risk of PMS <sup>(9)</sup>," Logan suggested.

Barnes continued: "Certain foods such as sugar, caffeine, alcohol, refined processed foods and dairy have been linked to the symptoms of PMS. A study looking specifically at carbohydrate and fibre intake in the Nurses' Health Study II cohort (2018) found that high intake of the sugar maltose (commonly found in beer, chocolate bars and cereals) was positively associated with PMS risk <sup>4</sup>."

"The Nurses Cohort Study (2018) noted that females experiencing PMS had lower intakes of vitamin D (from food sources) and calcium. <sup>4</sup> Another study by Bianco et al (2014) found an association of PMS with lower intakes





of fibre, complex carbohydrates, calcium, magnesium and vitamin B6.<sup>9</sup> A study of 62 university students (32 PMS cases and 31 controls) found lower serum levels of calcium and magnesium in PMS participants in comparison to healthy controls.<sup>10</sup> Although they found no difference in vitamin D levels between the groups, all the individuals had low serum vitamin D. Lower dietary intakes of calcium and potassium were also noted in the PMS group.”

Barnes also pointed towards the importance of the gut microbiome to be considered in relation to women and hormone balance.

“The gut microbiome can be linked to many of the symptoms of PMS, such as bloating,<sup>5</sup> migraine<sup>6</sup> and mood<sup>7</sup>. The gut microbiome may also play an important role in detoxification,<sup>8</sup> eliminating excess hormones and toxins from the body. A poor diet will lead to dysbiosis, which could potentially exacerbate PMS symptoms. Similarly, if inadequate amounts of fibre and water are being consumed, the body’s elimination systems could suffer, leading to toxins and excess hormones remaining in the body for longer,” she explained.

“To date, there are very limited studies and research into how the gut microbiome could affect PMS, however, it is likely that dysbiosis (an imbalance of the gut microbiome) will have an impact on the development of PMS symptoms, given that antibiotics appear to help PMS sufferers. Therefore, ensuring daily consumption of fermented foods, such as sauerkraut, kefir and kimchi could help to ensure a diverse gut microbiome and reduce pathogenic strains. Alternatively, taking a daily multi-strain live bacteria supplement could help to keep the gut microbiome balanced and reduce some of the symptoms associated with PMS.”

## ADDRESSING HORMONE BALANCE

The general consensus among experts is that hormone imbalance is linked to some important nutritional deficiencies.

“Premenstrual syndrome (PMS) is usually triggered by a hormonal imbalance in the second half of a women’s cycle after ovulation. It can begin one to two weeks prior to the menstrual period, with symptoms becoming more intense in the days leading up to the period and for the first one day after it has started,” Hitch explained.

“I look at five key factors in treating the underlying cause of hormonal imbalance and PMS: Directly balancing their hormonal status – do they have oestrogen excess and or progesterone deficiency?; reducing stress – we know stress greatly affects mood and hormonal production; improving liver clearance of hormones – particular endocrine disrupting toxins and excess oestrogen; correcting individual nutritional imbalances – often magnesium, zinc, selenium, vitamin B6, vitamin E and iodine; supporting anti-inflammatory pathways – chronic inflammation is an underlying cause of PMS and many other hormonal conditions.

“When a woman’s hormones are balanced, she feels energetic, motivated and strong. This all starts with balanced nutrition, a healthy lifestyle and finding the underlying causes of hormonal imbalance.”

So, what is the course of action to ascertain this?

Hitch advised: “In clinic, I see many women with hormonal imbalances. I regularly test their nutrient status and they often present with nutrient deficiencies in magnesium, calcium, iodine, potassium and zinc. They are also often low in B group vitamins and omega 3 fatty acids. I find once their individual nutrient deficiencies have been corrected and they start eating a healthy

whole food diet with plenty of water, rest and exercise, their symptoms are greatly improved.”

Ford advised: “The key deficiencies we associate with PMS are vitamin B6, magnesium, zinc, chromium and essential fatty acids. The B6 and magnesium are important for ‘calming’ the nervous system and helping support the emotional symptoms of irritability, anxiety and depression. While the zinc, chromium and essential fats are important for balancing blood sugar and helping with hormone production and balance.”

## PMS PROGRAMME

In terms of the most important considerations for you as a practicing Nutritional Therapist to make when supporting a client with PMS, there is a whole raft of recommendations you can make.

“Discussing their symptoms and discerning which PMS type category their symptoms predominantly fall into (often more than one) can be really helpful in designing an individualised treatment program. More importantly, knowing the main PMS type will give key insights into the possible underlying causes. For example, if their symptoms are predominantly PMS Type-P (pain), we know their main issue is underlying inflammation,” Hitch advised.

“Using magnesium, curcuminoids (from turmeric), omega 3 oils and an anti-inflammatory diet plan will really help their inflammation status and, therefore, reduce symptoms. Most women I find can benefit from using a high dose magnesium citrate supplement. I also check their nutrient status and often supplement with zinc and vitamin B6 to support fluid levels and as a hormonal cofactor. Vitamin E also supports healthy progesterone and is anti-inflammatory and antioxidant. Iodine can be useful for breast tenderness, however, I

**"The aim is not to look at all the different symptoms but to work on the overall lifestyle to ensure optimum health and wellbeing.**

**This means making sure that the woman is eating well, correcting any vitamin and mineral deficiencies, getting enough sleep, reducing stress levels and using nutrients that have been shown to help with PMS"**

check their iodine level first."

And Logan continued: "As a Nutritional Therapist, we will naturally look at the impact of diet and lifestyle on any condition a client may present with. This is equally important in those suffering with PMS. Nutritional deficiencies and poor diet and lifestyle choices will have an impact on the severity of the complaint.

"B vitamins and magnesium will undoubtedly be helpful, as will the inclusion of oily fish, wholegrains and vegetables. One supplement to consider for additional support is agnus castus. This herb is a traditional herbal remedy used for the relief of PMS symptoms and has been reported as being very helpful.

"Agnus castus, also known as chasteberry, is a fruit of the chaste tree found mainly in central Asia and the Mediterranean. Studies have indicated that agnus castus can stimulate the pituitary gland to produce luteinising hormone, which signals the ovaries to produce progesterone, thereby normalising the ratio of progesterone to oestrogen and relieving PMS-related symptoms, such as bloating, irritability, and depression. A randomised controlled trial of 170 women showed a 50 per cent decrease in PMS symptoms, including

irritability, mood swings, anger, headache, and breast tenderness with of chasteberry vs placebo<sup>(11)</sup>.

"The Traditional Herbal Medicinal Products Directive (THMPD) classified agnus castus as a herbal medicine and dictates the level which can be used in a supplement. Most products on the market provide only 5mg extract – this is a level below that indicated in clinical trials, which used a 20mg extract. However, a whole herb product 400mg dried agnus castus is also permitted – this would be the same as a 20mg extract, matching the clinical evidence. Therefore, if using an agnus castus supplement look for one with that 400mg."

As would be expected from a nutritional therapy perspective, Ford advised that a whole and holistic approach should be taken.

"The aim is not to look at all the different symptoms but to work on the overall lifestyle to ensure optimum health and wellbeing. This means making sure that the woman is eating well, correcting any vitamin and mineral deficiencies, getting enough sleep, reducing stress levels and using nutrients that have been shown to help with PMS," she explained.

"Of all the different dietary changes, balancing blood sugar is one of the most crucial for eliminating PMS. It has been found that the higher the added sugar content of the diet, the more severe the pre-menstrual symptoms. Alcohol should also be eliminated or drastically reduced in order to support liver function so that it can detoxify and excrete hormones efficiently. Apart from nutrition, exercise is important to eliminate PMS symptoms. Exercise releases brain chemicals called 'endorphins', which help us to feel happier, more alert and calmer."

Lifestyle factors must also be taken into consideration, especially with regard to stress.

"Stress inevitably worsens PMS symptoms; it is important for women to aim to reduce their levels of stress during this period. Women need to take time out for themselves during the luteal phase of their menstrual cycle to reduce the severity of their symptoms; mindfulness, yoga, breathing exercises, taking a bath or getting a massage could all help," Barnes recommended.

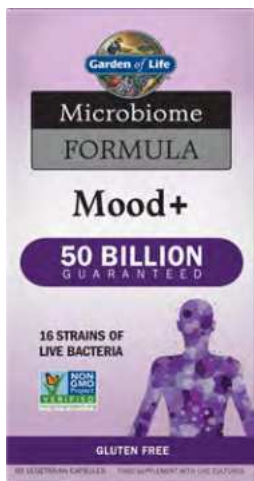
"Importantly, don't suffer in silence, talking through these symptoms with an understanding and supportive friend, family member or colleague could help. Studies have shown that individuals who conceal their feelings while dealing with unpleasant thoughts were more physically and mentally sensitive, irritable, depressed, and vulnerable, but those who embraced such events and considered them as natural happenings learnt that they needed more rest in such situations.<sup>11</sup> Exercise is known to help eliminate excess hormones from the body, however, over-exercise may lead to increased stress. So, whilst exercise is important to reduce PMS symptoms, it is also important not to over-exert your body at this time."



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NATUROPATHIC NUTRITION ASSOCIATION

# THE POTENTIAL OF PROBIOTICS

The uses of probiotics in terms of their impact on health is vast and with research growing, our panel of microbiome experts explain how best to advise in this area.

**A**n ever-increasing body research is emerging to confirm the importance of probiotic supplements as a beneficial approach when it comes to many health issues. Whether we relate it to the digestive system, immunity, skin health, candida control or brain health, the evidence is strong.

In terms of its use in practice, you will undoubtedly see clients where it is obvious that their microbiome is out of balance and a probiotic supplement is required. But there are likely to be other cases where this isn't obviously clear, and in both instances, there is much to consider in terms of recommending strains and levels that are needed, making this guide to probiotics a key read for all students.

## CONDITION SPECIFIC

As already highlighted, an unbalanced microbiome can

be at the root of many health-related issues.

Jenny Logan, Nutritional Therapist and Technical Training Manager at Natures Aid, advised: "The jobs of the microbiome include:

- Helps with weight regulation – our microbes play a role in how much energy is extracted from our food and can even influence in the foods we choose to eat.<sup>(2)</sup>
- Protects against invaders – good bacteria help to keep unfriendly bacteria and pathogens under control.
- Regulates the immune system – the number and type of good bacteria within our microbiome can affect the number and type of infections, allergies and inflammatory responses we have.<sup>(3)</sup>
- Aids digestion and produce important metabolites – including fatty acids and B vitamins.<sup>(4)</sup>
- Supports proper elimination – gut flora imbalances





can lead to constipation, diarrhoea and IBS.<sup>(5)</sup>

■ Helps to regulate skin health – good bacteria can help keep skin infections and acne at bay.<sup>(6)</sup>

■ Supports intimate health – the vagina is also home to a wealth of bacteria, which it needs to stay healthy.<sup>(7)</sup>

■ Influences mood, memory and brain function – the gut talks to the brain and good bacteria are needed to produce many of our 'happy chemicals'.<sup>(8)</sup>

IBS-diarrhoea type (IBS-D) is a well-studied area, and it's widely accepted how important probiotics are in this area.

"The 14 strains in Bio-Kult Advanced were used in the largest-ever double-blind randomised controlled trial of probiotics in IBS-D patients ever-conducted.<sup>12</sup> The study in 400 people found that Bio-Kult significantly improved overall IBS symptom severity. Abdominal pain and frequency reduced by an average of 69 per cent and 34 per cent of participants were completely symptom free at the end of the four-month trial. Significantly, though, as well as relieving IBS-D symptoms, it was also shown to markedly improve all aspects of quality of life. This includes psychological issues such as anxiety about health, depression, lack of enjoyment of life, and feelings of having to avoid stressful situations," Nutritional Therapist, Claire Barnes, Technical Advisor at ADM Protexin, which has the Bio-Kult brand.

An emerging area of research focuses on the beneficial effects of consuming probiotics in relation to migraines.

Barnes continued: "The same probiotic was used in an eight-10 week randomised, double-blind, placebo-controlled trial on migraine sufferers.<sup>13</sup> Bio-Kult was found to significantly decrease migraine frequency and intensity, in both episodic and chronic migraine compared to placebo. In addition, the use of abortive medication and Migraine Disability Assessment Score (MIDAS) were significantly reduced compared to placebo. The attack duration was also significantly

reduced in the chronic migraine group."

## FACTORS AFFECTING THE MICROBIOME

There is no one size fits all approach when it comes to a person's microbiome and why it may not be functioning properly; so many different factors are involved from individual to individual.

"The microbiome lives both within and on our bodies and consists of mostly bacteria but also viruses, fungi and protozoa. Given the number of functions of the human microbiome, experts now refer to the microbiome as a virtual organ in the body.<sup>1</sup> It is estimated that we have the same number of human cells as we do microbial cells in our bodies.<sup>2</sup> In view of the varying functions and size of the microbiome, it is clear that our own microbiomes are vital in our overall health," explained Barnes.

"The largest microbiome in the human body lives within the gut, which contains approximately 100 trillion micro-organisms.<sup>1</sup> The role of the gut microbiome involves competitively inhibiting pathogenic microbes, increasing nutrients, such as through the production of short-chain-fatty-acids (SCFAs), vitamin synthesis and improving the absorption of nutrients, maintaining the intestinal epithelial cells,<sup>3</sup> supporting the immune system<sup>4</sup> and assisting with detoxification<sup>5</sup>.

Logan added: "Living in the gut of every human being is over 100 trillion bacteria. These bacteria form what is known as the microbiome and they have a tremendous impact on our health and wellbeing, influencing not just our digestion but many other areas as well. The human microbiome is a small, but incredibly complex ecosystem, containing hundreds of different competing and co-existing species. In fact, our own cells, are outnumbered 10 to one by the cells and microbes which live in us and on us. These 100 trillion bacteria forming the microbiome contain 4.4m





genes compared to a human's, 21,000<sup>[1]</sup>.

"Many people may find the idea of all these bacteria living in us and on us disgusting and uncomfortable, however, it is not possible to be a healthy human being if we do not have a healthy microbiome, so important are they to many functions within our body."

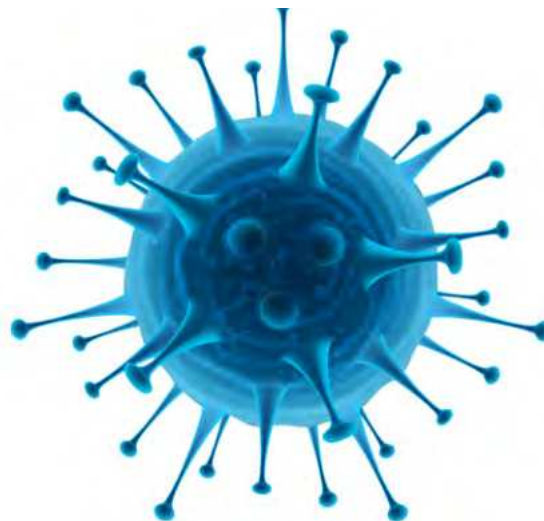
Dr Elisabeth Philipps PhD, Nutritional Therapist and Technical and Education Consultant at Nutrigold, highlighted the breadth of the microbiome.

"Our microbiome includes the microbes that find their home not only in the gastrointestinal (GI) tract, but also on the skin, respiratory tract, urogenital tract, and even the brain. These microbes predominantly consist of bacteria, although non-bacterial organisms such as viruses and fungi are also represented. The term 'microbiome' refers not only to the microbiota and their habitat but also the collective genomes of the microbes, known as the 'metagenome'.<sup>[4]</sup> Although some references estimate that the 100 trillion organisms comprising the human microbiome represent 10 times the number of cells in the human body,<sup>[5]</sup> a recent paper suggests that the ratio of microbes to human cells is closer to 1.3:1.<sup>[6]</sup> Regardless, both of these estimates reflect a substantial microbial population, whose function impacts not only the interfacing epithelial tissues, but also the function of our body within.

"By far, the largest population of these microbes is found in the GI tract, which is home to nearly 1,013 to 1,014 microorganisms that represent between 500 to 1,000 unique bacterial species."<sup>[7],[8]</sup>

So, what factors actually affect its function?

Logan advised: "The good bacteria of our microbiome can be killed off by many things, including antibiotics, the Pill or HRT, a high sugar diet, stress, artificial sweeteners and processed foods. With all these things considered, it is not surprising that scientists are now of the opinion that a lack of the right type of bacteria is having a massive effect on the



health of the nation."

Logan paid particular attention to the impact antibiotics can have.

"It has long been known that antibiotics can wipe out the protective good bacteria as well as the bad, with studies showing that using a probiotic supplement alongside antibiotics can help to prevent antibiotic associated diarrhoea," she advised.

"Recent research has indicated that the negative effects of antibiotics on our gut flora could last for up to a year. A study carried out in the UK and Sweden checked people's oral and gut biomes directly after a one-week course of antibiotics. They then checked the same people at one, two, four and 12 months post treatment. Generally, whilst the oral microbiome recovered quite quickly, some of the bacteria in the gut suffered a crushing blow.<sup>(9)</sup> Anyone who has taken antibiotics in their life – which will be the majority of the population – will have potentially a disordered microbiome."

Aicacia Young, Registered Dietitian Nutritionist and writing on behalf of Microbiome Labs, added: "The gut microbiome is a vast ecosystem of trillions of bacteria, viruses, fungi, and protozoa that exists within the digestive tract of mammals. The gut microbiome

can enhance digestion, protect against toxins, boost the immune system, regulate metabolism, influence mental health, improve skin health. and so much more. Factors that can negatively impact the gut microbiome include antibiotics, lack of sleep, stress of any kind, overuse of NSAIDs, overconsumption of alcohol, artificial sweeteners, pesticides like RoundUp, and frequent flying."

Barnes continued: "Aside from the alterations to the infant's microbiome, many factors of modern living can further have an effect on our microbiomes and potentially lead to dysbiosis (a persistent imbalance of the gut microbial community). Both animal and human studies have shown that diet can have a profound influence on the composition and function of the gut microbiome.<sup>10</sup>

"If you consider that the digestive tract is actually external to the body, the gut epithelial barrier has an extremely important role to play in ensuring we can absorb the nutrients from our food effectively, whilst also keeping out pathogens, by-products and undigested proteins. Our commensal gut microbiome helps to competitively inhibit the growth of potentially pathogenic bacteria. If given the chance to thrive, these harmful bacteria can increase inflammation in the gut and particularly along the epithelial lining leading to intestinal permeability (leaky gut). A damaged epithelial lining will result in a heightened immune response and potentially increasing inflammation throughout the body<sup>11</sup>."

And Philipps highlighted the role of probiotics and the brain.

"We're also beginning to realise that the intestinal tract is communicating with the brain, through what's called the gut-brain axis. Stress, for instance, can negatively impact the healthy bacteria in the gastrointestinal tract. The gut microbiota, in turn, modulates the stress response through the vagus nerve,<sup>[4]</sup> which goes all the way from the gut to the

brain. So, although the microbiota can be negatively impacted by stress, it also can positively impact stress and mood, which is a whole new mechanism of action we now are beginning to understand. And then, there is the female genitourinary tract, which also has its own population of probiotic bacteria that positively affect genitourinary tract health, possibly even helping to prevent sexually transmitted infections such as HIV.”<sup>[5]</sup>

She continued: “A reduction in in gut microbiota diversity is not only seen with obesity,<sup>[16]</sup> but also in the process of ageing,<sup>[17]</sup> particularly with early frailty, poor diet and stressful lifestyles and the use of multiple medications, especially antibiotics and stomach acid reducing medications, such as PPIs.<sup>[18], [19]</sup> Reduced diversity can contribute to the increased representation of pathogens, as well as a decline in the healthy immune system response to infections. In children, a healthy and diverse gut microbiome is important for reducing infection and may help reduce the occurrence of common paediatric conditions. Reduced gut microbiota diversity in children has been shown to be associated with allergic disease, asthma and inflammatory bowel disease.”<sup>[25], [26], [27]</sup>

## ASSESSING BACTERIA BALANCE

There are some critical assessments to be made when working with clients who are in need of a better balance of bacteria.

“Certainly, there are the common signs of gastrointestinal dysfunction, such as irregular bowel motility, food intolerances, bloating and absorption issues. However, aside of these digestive complaints, there is the potential that all disease could begin in the gut. Therefore, any inflammatory condition in the body, such as arthritis or psoriasis, could be attributed to the gut microbiome. A particularly interesting growing area of research is the gut-brain axis. With a better understanding of the link between the brain

and the gut microbiome, any client presenting with mood disorders may likely indicate dysbiosis in the gut also,” Barnes advised.

Young continued: “Any sign of chronic disease or inflammation is a sign of gut dysbiosis; allergies, food sensitivities, brain fog, digestive issues, hormonal dysfunction, skin issues, mood disorders, and more.”

And Logan pointed out: “Because the microbiome plays such a vital role in the healthy function of the body, if we have low levels of good bacteria, this could impact skin health, mental wellbeing, intimate health, bowel function, immunity, inflammation and even the ability to lose weight.”

Penny Shaw, Nutritional Therapist at G&G, advised: “Symptoms related to poor digestion are bloating, gas, constipation or diarrhoea, acid reflux, undigested food in stool. Additionally, it can be hormonal irregularity, acne or other skin complaints. Due to the gut brain axis, imbalanced bacteria can be connected to anxiety and depression.”

And what are the best mechanisms to assess this?

“The development of food allergies or intolerances can indicate leaky gut. Leaky gut is linked with low levels of the right type of bacteria, which are required to keep the intestinal barrier intact. Recurrent intimate infection such as thrush or bacterial vaginosis are known as signs of a bacterial imbalance in the vagina. It is also known that those with irritable bowel tend to have a less stable microbiome than healthy individuals,” Logan advised.

“Low immunity and increased inflammation could be another sign, as the good bacteria of the microbiome are vital to healthy immune function. The possibility of issues within the balance of bacteria should also be considered in those presenting with skin disorders, as the immune system, inflammation and the skin's microbiome all come into play in the aggravation of these issues.

“Finally, mental health issues could also suggest

issues within the microbiome, the bacteria in the gut are responsible for the production of serotonin, GABA and dopamine. Low levels of these neurotransmitters have been linked to anxiety and depression, and research has indicated that taking *lactobacillus* and *bifidobacterial* can help to improve symptoms of depression and anxiety. So, in conclusion – whatever the client is presenting, be aware that their bacteria could be influencing the issue.”

## ADEQUATE LEVELS

Re-establishing a healthy microbiota is multi-faceted, and, of course, does not just involve supplementation, given the breadth of factors that are involved.

Fermented foods are a great place to start in that respect.

“Before the invention of fridges and freezers, people had to preserve their food through fermentation. Whilst many communities continued the tradition of eating fermented foods, unfortunately, they were removed from the ‘western diet’. We are now seeing a resurgence of fermented foods, such as sauerkraut, kefir, kombucha and kimchi and for individuals who are consuming fermented foods daily, they may not need to also consume probiotic supplements,” Barnes advised.

Taking a probiotic supplement is undoubtedly important.

“Anyone with nutritional deficiencies, digestive disorders, who has taken antibiotics, or had an upset stomach should take a probiotic. Those who have been stressed or followed a high sugar diet or eaten a lot of processed foods, people with skin disorders or issues with mental performance, as well as those with intimate infections or food intolerances could all benefit from taking a probiotic,” Logan explained.

Philipps continued: “Mothers can take probiotics to epigenetically support growing foetus (research suggests 44 per cent reduction in atopic disease) and

also when breastfeeding. Children can take probiotics to support immune system. Everyone should take antibiotics during and after courses of antibiotics. Healthy adults with good diet and low stress may find that diet alone (high fibre to support production of short chain fatty acids (SCFAs) by gut bacteria) is enough but when travelling or going into hospital, probiotics can support gut health and have even been shown to reduce *C. difficile* hospital acquired infections. Probiotics should be used in the elderly as the population of gut bacteria are known to decline and this has been suggested to be associated with cognitive decline and neuroinflammation, including conditions such as Alzheimer's disease.

"One of the great things about probiotics is they can be used as an adjunct to standard treatments. Take *Helicobacter pylori* infection, for instance. The standard triple-drug treatment for *H. pylori* [the bacterium associated with gastric ulcers] is very tough on people and recurrence rates are really high. As a result of the drugs, the healthy bacteria in the gastrointestinal tract are reduced by as much as 80 per cent. But if we administer probiotics during the treatment period, it cuts the loss of 'good' bacteria considerably, and if patients continue to use probiotics afterwards, they tend to bounce back more quickly."<sup>[39][40]</sup>

Let's then look at the strain that you need to address specific health concerns.

Logan advised:

■ **"For mental performance:** A study was carried out providing a combination of *Lactobacillus acidophilus*, *Lactobacillus casei* and *Bifidobacterium bifidum* (two billion of each), or a dummy pill, over eight weeks. The patients who had received the probiotic combination had significantly decreased total scores on the Beck Depression Inventory. In addition, they had significant decreases in systemic inflammation."<sup>(10, 11)</sup>

■ **For intimate female health:** The vagina of a healthy women should contain high levels of *Lactobacillus* and some *Bifidobacteria*. Based on the bacteria found in the vagina of a healthy premenopausal woman, studies have been carried out using a combination providing *Lactobacillus plantarum*, *Lactobacillus rhamnosus* and *Bifidobacterium lactis* (a total 15 billion) to assess the effect of these bacteria on the treatment of thrush and BV. The results were these three bacteria when included in an oral supplement were able to colonise the vagina and proliferate, providing a healthy pH, preventing and treating BV. This combination also exerts an antimicrobial action, displacing and excluding candida, thereby treating and preventing thrush. The studies prove that a combination of all three bacteria was more effective than using individual strains; 95 per cent of the women who used a supplement providing *L. plantarum*, *L. rhamnosus* and *B. lactis* reported relief from itching, burning discharge and dryness."<sup>(12)</sup>

■ **For skin health:** A combination of *L. plantarum*, *L. reuteri* and *L. rhamnosus* has been shown to work together to reduce the numbers of the following skin pathogens:<sup>(13)</sup> *Staphylococcus aureus* – a bacteria linked to skin infections, pimples, boils and cellulitis; *pseudomonas aeruginosa* – thought to be responsible for skin inflammation, infection and dermatitis; *propionibacterium acnes* – the bacteria linked to the development of acne and oily skin; *staphylococcus epidermis* – an opportunistic bacterium which has been linked to the worsening of all skin conditions. This combination of *L. plantarum*, *L. reuteri* and *L. rhamnosus* has also been shown to be effective in reducing inflammation and improving the healing of the skin in conditions like acne, eczema, rosacea and dermatitis."<sup>(13)</sup>

Philipps continued: "Good results with the probiotic

combination of *Lactobacillus acidophilus* DDS -1 and *B. lactis* UABLA-12 have been seen in clinical trials in settings of atopic dermatitis and respiratory tract health. In children ranging from one to three years in age, the combination was shown to significantly improve eczema symptoms and reduce the need for topical hydrocortisone cream."<sup>[28]</sup> It also reduced the time to recovery from acute respiratory tract infections as well as symptom severity and the need for medications."<sup>[29][30]</sup>

"*Saccharomyces boulardii* is a probiotic, non-colonising yeast species closely related to Brewer's yeast and not related to the yeast group to which *Candida* belongs. Soon after supplementation begins, *S. boulardii* 'blooms' and quickly becomes established in the gut, where it can produce lactic acid and some B vitamins. Both extensive studies and clinical use suggest it can help displace unfriendly yeast species in the GI tract. It has also been shown to increase levels of secretory IgA. During its use, friendly probiotic bacteria are able to colonise in the GI tract, supporting a healthy micro-ecology. When *Saccharomyces boulardii* supplementation is stopped, it is then eliminated from the gut. *S. boulardii* has been used in Europe after antibiotic use to support normal gastrointestinal tract function."

Young added: "The next-generation probiotics contain spore-forming strains of *Bacillus* that are also naturally found in a healthy human gut but uniquely designed to survive digestion. *Bacillus* probiotics are much more effective at colonising and reconditioning the gut in order to crowd out pathogens and restore a healthy balance to the gut microbiome."

Barnes offered perspective when it comes to a multi-strain formula.

"Whilst much of the evidence for probiotics is strain specific, it is important to bear in mind that probiotic strains work synergistically together and that taking



a multi-strain probiotic could be more effective throughout the gastrointestinal tract than taking one or two specific strains<sup>14</sup>," she advised. "Certain bacteria reside in certain areas of the digestive tract. For example, *Lactobacilli* species prefer the environment of the small intestines, whereas *Bifidobacterium* are more abundant in the large intestine. Therefore, taking a multi-strain probiotic containing different genus and species are likely to have more benefits throughout the digestive system. Look for a multi-strain that contains not only different strains but also from different species and genera. The genera or genus is generally the first name given when listing a probiotic strain, for example *Lactobacillus*, *Bifidobacterium* or *Streptococcus* secondly it should state the species level, such as *acidophilus* or *bifidum* and thirdly the strain, such as PXN 35."

Quality must be brought into consideration.

Logan explained: "It is important to remember that you have 100 trillion good bacteria inside you, so if you want to change the balance of your microbiome you need to take a supplement which is providing a high bacterial count per capsule. For a broad-spectrum product, this would mean looking for a product which provides anything from 30 billion CFU per capsule up to 100 billion. When using good bacteria in this way, we do not need to use such high doses – we are not trying to change the whole nature of the biome, simply top up certain strains of bacteria, so 10-15 billion will be enough.

"It is also important to consider the source of your good bacteria. Many products on the market are sourced from dairy products. These are not the exact bacteria we would naturally find in the human biome. Nor will these products be suitable for vegans or those with any kind of dairy intolerance. Look for a certified vegan product, with proven bile and gastric acid resistance – then you should be sourcing a product

which has been sourced from human strains and is suitable for all who may wish to use it."

Philipps advised: "Delayed time release capsules have been shown, in an in vivo human clinical trial, to begin disintegrating at 45 minutes, with complete release of the ingredients approximately 20 minutes later in the intestines for the majority of the subjects. These plant-based, vegetarian capsules are acid-resistant without the need for film coatings and are phthalate free."

For Young, there are certain checks to perform when recommending a brand.

"It's important to look for probiotics that have undergone third party DNA verification because many probiotics on the market do not meet label claims. Sometimes the supplements with 250+ billion CFU of *Lactobacillus* can cause more harm than good to the gut microbiome. Additionally, any probiotic that needs to be refrigerated (because it can't survive room temperature) is likely too weak to survive digestion or make a lasting difference in the gut. Spore-forming *Bacillus* strains like *Bacillus clausii*, *B. indicus*, *B. subtilis*, *B. coagulans*, and *B. licheniformis* have been well-studied for their abilities to effectively recondition the gut microbiome, produce vitamins and enzymes, modulate the immune system, and reduce intestinal inflammation."

## RESEARCH FOCUS

Probiotics and their role in health is a well-studied area and is growing all the time. So, what is the latest research telling us?

Philipps advised: "Another area with considerable research in the realm of probiotics is female genitourinary tract health. Conditions like bacterial vaginosis would probably be at the top of the list,<sup>[34]</sup> as well as prevention of recurrent urinary tract infections.<sup>[35]</sup> We're finding that probiotics taken

orally can actually populate the vagina and produce significant effects,<sup>[36],[37]</sup> which is amazing. Also, studies now suggest that routine use of probiotics can reduce the incidence of upper respiratory tract infections, at least in adults.<sup>[38]</sup> There is a lot more research emerging on other conditions as well."

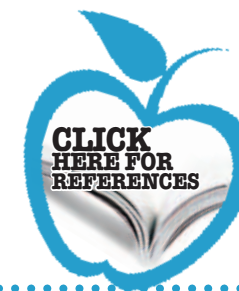
Young highlighted research identifying new strains.

"Some up-and-coming bacterial strains to keep an eye on include *Faecalibacterium prausnitzii* and *Akkermansia muciniphila*. Emerging research indicates that *F. prausnitzii* is very low in patients with inflammatory bowel conditions like Crohn's disease and ulcerative colitis. For this reason, *F. prausnitzii* is coming to be seen as a major anti-inflammatory bacteria in the gut. *A. muciniphila* appears to be very low in obese patients with metabolic syndrome and diabetes and can dictate overall metabolism. However, both of these bacteria are anaerobic, meaning that they cannot survive in oxygen-rich environments. This makes it very difficult to supplement with these bacterial strains orally, but it is possible to increase their abundance from within the gut with *Bacillus* spores and non-digestible oligosaccharides like fructo-oligosaccharides, galacto-oligosaccharides, and xylo-oligosaccharides that act as targeted prebiotics."



# EXPERT ADVICE

Our panel of nutritional experts offer readers advice on dealing with a variety of issues.



# Q

Enhanced-bioavailability curcumin is very popular, but is it really more effective?

**BENJAMIN BROWN ADVISED:** Enhanced bioavailability turmeric is paradoxically both marketing myth, and clinically important; the trick is to know which. And importantly, turmeric without bioavailability enhancers may sometimes be a better choice.

Most phytochemicals have relatively low bioavailability. For example, blueberry polyphenols have a bioavailability of 0.2-1.1 per cent, similar to that of curcumin in turmeric, but that does not mean blueberries are not good for you or must be eaten with absorption enhancers.<sup>i</sup> The same is true of turmeric; despite the relatively low bioavailability of curcuminoids, they are still absorbed in small but significant amounts, and – in contrast to marketing hype – have been demonstrated to be clinically effective in several studies in which people used turmeric extract without bioavailability enhancers.

Importantly, clinical studies in inflammatory bowel disease have used curcumin extract, with no additives or bioavailability-enhancers. It is possible that the efficacy of formulations may vary by differing additives in the formulation, for example, binders, fillers, bioavailability-enhancers.<sup>ii</sup> In fact, additive free turmeric accumulates significant levels of curcumin in the gut mucosa, whereas bioavailability enhanced turmeric does not.<sup>iii,iiii</sup> Presumably, this difference would have an important impact on

clinical effects and imply that turmeric extract with no additives or bioavailability-enhancers would be the preferred choice for gastrointestinal health. In contrast, bioavailability-enhanced turmeric might be better for systemic effects, for example, brain, joints, or skin.

A good question to ask when considering a 'bioavailability-enhanced product' is has this product been shown to have better clinical effects? Surprisingly, some products have no studies assessing absorption in the first place, and no studies have compared formulations head-to-head on clinical outcomes. Clearly, not all bioavailability enhanced products are useful and it's hard to know which.

As an example of better bioavailability not living up to supposed benefits, turmeric extract complexed with polysorbate-80 to enhance bioavailability failed to alter blood lipids, inflammation or glucose so it's unclear if it is more effective, or effective at all.<sup>ii</sup> But other delivery systems might be better and the use of turmeric for psoriasis provides us with an interesting example. An early study assessing non-enhanced curcuminoids 4500mg daily for 16 weeks resulted in a low treatment response, which could have been a placebo effect.<sup>iii</sup> In contrast, a curcuminoid-phosphatidylcholine complex (Meriva) providing just 400mg of curcuminoids daily for 12 weeks significantly reduced symptom scores and

an inflammatory biomarker (IL-22) when compared to placebo.<sup>iii</sup> So, enhanced-bioavailability might be better, but clinical studies assessing disease outcomes are a much better guide than absorption studies, which may not translate to real-world benefits.

Next time you eat a few blueberries, or sprinkle some turmeric in your cooking, it might be a time to reflect that phytonutrients can have powerful effects despite 'low' absorption and at 'low' amounts. The commercial push for product differentiation based on claims of enhanced-bioavailability seems to have lost sight of that truth.

## THE EXPERT

Benjamin I. Brown, ND is a science writer and speaker, specialising in nutrition and functional medicine. He is author of *The Digestive Health Solution* second edition and contributes regularly to industry magazines and scientific journals. Ben is Contributing Editor of *IHCAN* magazine, Director of Clinical Education for Pure Encapsulations UK, and on the Advisory Board and Guest Lecturer at BCNH College of Nutrition and Health. Ben guest lectures at the Institute of Optimum Nutrition (ION) and the Centre for Nutrition Education & Lifestyle Management (CNELM). He hosts Positive Health Podcast.



**Q** I am seeing a rise in the number of vegan clients in clinic. In terms of assessing their nutritional needs, what are the most common deficiencies to consider?

**KEELY BERRY EXPLAINED:** It's vital for your clients to know what nutrients they get from the food groups they are cutting out or cutting back on before making these changes to their diet. When eliminating animal products, it's important to choose plant sources that are rich in the vitamins, minerals and macro nutrients that they're going to be missing out on. For example, animal products can be rich in protein, so replacing this with beans, lentils and chickpeas will help to bridge this gap. It can also be difficult to know what exactly is contained within our fruit and vegetables, and, with soils being over-farmed, we can be left at risk of deficiency.

When following a plant-based diet, the risk of iron, vitamin B12, iodine, calcium, fatty acids and vitamin D deficiency can be increased. Owing to a diet rich in wholegrains, vegans consume similar amounts of iron as omnivores, however, issues with the absorption of plant-based iron means that sufficiency must be prioritised. Iron intakes for those following a vegan diet should be increased by 80 per cent, according to research, and adult males and females should, therefore, achieve a recommended intake of 14mg per day and 33mg per day respectively.

As vitamin B12 is primarily found in meat, fish and some dairy products, vegetarians and vegans can often be deficient in this energy-boosting nutrient. A research review has suggested that vegans should consume 6µg of supplemental B12 per day, as unlike some B vitamins, B12 is not found in any plant food other than fortified cereals. Similarly, studies have shown that vegan diets can pose an elevated risk of iodine deficiency. This is because the amount of iodine found in vegan foods, such as cereals and grains, is inconsistent and depends on how much

iodine is in the soil the plant is grown in.

Another vitamin vital to human health is vitamin D; 80-90 per cent of our vitamin D stores are provided by the sun, with few foods providing meaningful quantities. Research has found that the vast majority of those following a plant-based diet have sub-optimal levels of vitamin D, with just 10 per cent of vegans having serum vitamin D concentration levels of >75 nmol/L, which is the level proposed by some researchers to be optimal.

Oral supplements can help to give a daily boost of important minerals and vitamins. Many conventional supplements, such as tablets and capsules, often use fillers such as magnesium stearate to bulk out their formulations – this comes from the fatty acid, stearic acid, which can be sourced from animals and fish. Therefore, supplementing using an oral spray is an ideal way to support good health, bridging any nutritional gaps. Intra-oral spray technology also overcomes digestive absorption issues, helping to get nutrients into the body in meaningful quantities.

## THE EXPERT

Keeley Berry, Nutritional Expert and NPD Executive at BetterYou, studied Biomedical Science at Sheffield Hallam University before starting her career as a Molecular Biologist, testing food products for the top 14 allergens to ensure they complied with EU law regulation and safety. Keeley is now a member of the new product development department at natural health company, BetterYou, developing new and innovative VMS supplements for the brand.





## Q What is the best protocol to strengthen the wall of the intestinal barrier as a solution to Leaky Gut syndrome?

### DR ETIENNE CALLEBOUT ADVISED:

The microbiome has become a topic of increasing importance and is now more relevant than ever, with a particular focus on the role of gut bacteria on both physical and mental health. Lectins, such as gluten (from beans, soy, nightshade, grains and wheat, especially wheat germ agglutinin etc.), stress, medications, pathogens and toxins such as ammonium and heavy metals contribute to the leakiness of the gut. When the connective tissue between epithelial tight junctions of the small intestine loosens, a knock-on effect can be felt throughout the body, including a leaky brain due to the gut being linked to the brain by the vagus nerve.

The release of histamine in the small intestinal tract will act as a first defence, whereby the wall of the small intestinal tract becomes inflamed. This inflammation acts as a barrier and reduces the amount of nutrition being absorbed by the body, whilst the loosened tight junctions allow for the passage of unchecked food particles, pathogens and lipopolysaccharides which would otherwise be modulated by zonulin and kept in the intestinal lumen. This is the beginning of a chain reaction.

With the absorption of unwanted substances now in the body, the immune system will react, and the more permeable the gut, the bigger the reaction. The immune system can be thrown out of balance and become sensitive to both good and bad substances, releasing more histamine throughout the body, which is then free to circulate and cause further inflammation at the site of

histamine receptors.

Due to the many histamine receptors in various parts of the body, an overload of histamine caused by a reaction from the immune system can present itself in many different ways, such as skin reactions, urticaria, asthma, and other histamine modulated symptoms. Opportunistic bugs such as candida, which release mycotoxins to spread, begin to thrive in the intestinal tract as the conditions become favourable for them. Bad bacteria, toxicity, immune reactions, gut dysbiosis, absorption issues and chronic fatigue are all signs that the gut, particularly the small intestine, has become leaky.

Thus, it can be said that the status of the immune system is reflected in the state of the small intestinal wall. In order to fix this mechanism something needs to be done to reduce inflammation in the wall of the small intestine. Given that it is histamine which causes the inflammation, the best starting point is eliminate histamine.

The active, patented ingredient MANC, a clean form of zeolite, is a negatively charged particle derived from volcanic ash, capable of binding to heavy metals, ammonium and more importantly for leaky gut syndrome, histamine. The size of the particle is optimised to ensure it isn't absorbed by the body and remains only in the digestive tract, allowing it to capture and eliminate substances in enterohepatic circulation that contribute to leaky gut consistently through reabsorption. It bypasses the stomach and releases the active ingredient in the

small intestine, where it is able to bind to histamine in the wall of the small intestine, thereby, reducing inflammation. This gives the epithelial tight junctions a chance to repair themselves and strengthens the integrity of the small intestinal wall.

Once the leaky gut starts to heal, the knock-on effect on the body is lessened, and other supplements may be added to further healing. It can, therefore, be seen as a base to the therapy – heal the leaky gut first, and tackling other health issues can become a lot easier.

### THE EXPERT

Dr Etienne Callebout M.D. D.T.M. & H.M.F. Hom. has been in medical practice for 30 years. Initially specialising in general practice and tropical medicine (India), his main area of focus is integrating classical taught orthodox medicine. He trained in homeopathy (London), acupuncture (Antwerp), naturopathic medicine (worldwide), Klinghart Academy, including neural therapy (Seattle, USA), Kelly/Gonzalez metabolic typing, a three-year course in Anti-Ageing (EURO MEDICOM), environmental medicine (AAEM, USA), voice dialogue (USA Dr Hal Stone), and Psych synthesis (Assagioli method). He also invented callilac (EU patented and produced in France), a natural product that reduces infections in cow's milk, so the farmers need to give less or no antibiotics to the cows.





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AVAILABLE THROUGH THE NATURAL DISPENSARY

# THE EVIDENCE-BASED BENEFITS OF BILOBA



Reynaud's syndrome, tinnitus, tired legs and memory issues could all be addressed by ginkgo biloba supplementation, but with massive variance in quality, choosing the correct one is important. Nutritionist, Frankie Brogan, examines the herb in greater detail.

**I**t has been used as a remedy for over 5,000 years, but ginkgo biloba also has decades of robust scientific research to back up its many potential benefits. These range from boosting circulation and mental function to supporting common conditions, including Reynaud's phenomenon and tinnitus.

Ginkgo makes it possible to improve the blood flow in the brain and other vessels around the body, supplying cells with more oxygen and nutrients. The ginkgo biloba tree produces characteristic fan-shaped leaves, which contain a range of biologically active compounds, including:

- Flavone-glycosides – compounds which demonstrate potent antioxidant activity, protecting tissues (especially brain tissue) from oxidative damage caused by environmental factors such as diet and pollution.

- Terpene lactones have a number of effects on the blood, including inhibiting platelet aggregation and blood clot formation.

These actions allow ginkgo biloba to benefit the cardiovascular system as a whole, promoting blood flow by dilating arteries, inhibiting the development of blood clots and protecting cells.

## MEMORY AND BRAIN HEALTH

Taking care of our mental health is vital for a good quality of life, especially as we get older. Ginkgo biloba has been investigated in various areas of brain health, including memory, concentration and age-related cognitive decline.

In one clinical trial featuring 333 people with dementia, those taking a standardised ginkgo biloba supplement for 24 weeks experienced improved cognitive functioning, decreased aggression, depression and anxiety<sup>1</sup>. In a similar study in those without a dementia diagnosis, a standardised ginkgo supplement taken daily over three months was able to improve cognitive function and reaction times compared to placebo<sup>2</sup>.

One of the main proposed actions for this benefit is that ginkgo is able to improve circulation to the brain, improving oxygen and

nutrient delivery throughout the busy organ<sup>3</sup>.

Trials also demonstrate that ginkgo may show reliable potential in supporting memory. In one trial, standardised ginkgo biloba supplements were able to boost memory and mental processing speed in as little as six weeks versus placebo pills.

## VERTIGO

Vertigo describes a potential symptom of various illnesses, such as migraines and inner ear infections. Affecting balance, a sufferer of vertigo can feel as if their surroundings are spinning.

While it may be classified as a balance issue, vertigo may also be caused by problems within the brain. Attacks can last for seconds or several days and may begin suddenly. Research has found, however, that standardised ginkgo biloba supplementation can help.

Similarly to how it works to support other brain issues, ginkgo biloba supplementation can improve blood flow to the brain and protect neurones from oxidative damage<sup>3</sup>, reducing the



symptoms of vertigo. Studies have also shown that ginkgo biloba can treat vertigo in a similar fashion to prescription medications, but is better tolerated.<sup>4</sup>

## TINNITUS

Tinnitus is often characterised as hearing noises that aren't actually present in the environment, such as ringing, which can be annoying or distressing to the sufferer. It's not clear what causes tinnitus, though there appear to be links with various other conditions such as diabetes, thyroid disorders, anxiety, depression and as a side effect of certain medications. Disrupted circulation to the ears is also cited as a possible cause.

Ginkgo biloba is traditionally used to relieve the symptoms of tinnitus and has shown to be an evidence-based treatment option when using a standardised supplement.<sup>5</sup>

## RAYNAUD'S SYNDROME

Thought to be caused by sensitive blood vessels that cause poor circulation to the extremities, Raynaud's phenomenon is typically characterised by cold and painful hands and feet, even at relatively mild temperatures.

Ginkgo biloba is traditionally used to relieve the symptoms of Raynaud's and has been shown to lower the number of attacks in clinical trials, versus placebo.<sup>6</sup> One proposed mechanism for this effect is ginkgo's ability to boost circulation and delivery of warm blood to the hands and feet.

Various studies show that ginkgo biloba supplementation can reduce symptoms of intermittent claudication, caused by poor circulation in the legs, which causes pain and tiredness (especially in the calf muscles) when walking.

Intermittent claudication is known as a symptom of peripheral arterial disease (PAD), a common condition usually caused by a build-up of fatty deposits (atheroma) in the walls of the leg vessels.

A meta-analysis found that ginkgo biloba supplementation decreased the symptoms of these conditions, including the ability to walk greater distances without experiencing tired and painful legs.<sup>7</sup>

## THE POTENTIAL IN STROKE RECOVERY

When taken in combination with certain medicines, ginkgo biloba

may support recovery after a stroke.

A recent study demonstrated that the combination of aspirin and ginkgo biloba supplementation improved recovery rates of those who had suffered from an ischaemic stroke, versus aspirin alone.

The major study involving 348 patients who had experienced an acute ischaemic stroke in the previous week took either aspirin (a common medicine advised after a stroke) or a combination of both aspirin and ginkgo biloba.<sup>8</sup>



## THR QUALITY VS FOOD QUALITY

When it comes to herbal products, quality and safety go hand in hand.

Various studies show that most herbal products can be easily contaminated<sup>9</sup>, especially with other herbs or compounds. A ginkgo product produced under pharmaceutical control severely restricts the risk of contamination, as this is a strict level of quality assurance the product has to go through. The vast majority of ginkgo products are produced under food quality assurance, however. These food grade supplements (known as food supplements) are not subject to the same manufacturing/legal scrutiny as pharmaceutical controlled products and so the same quality assurance cannot be made.

Another way of assuring a quality ginkgo biloba preparation is seeking one with a traditional herbal registration (THR). The THR scheme is overseen by the Medicines and Healthcare products Regulatory Agency (MHRA), which provides a framework in which manufacturers of high-quality herbal products can register their products, allowing them to carry the THR symbol for easy identification amongst consumers. The strict manufacturing and legal scrutiny required for a THR product act as an additional way of assuring high quality, licensed ginkgo products. Licensed

ginkgo preparations are also allowed to make restricted medicinal claims, which includes the traditional treatment of symptoms of Raynaud's syndrome and tinnitus.

Ginkgo has many herbal components in each leaf, but not all of them have an impact on health. A standardised ginkgo extract ensures that the highly effective flavone glycosides and terpene lactones are at a level which, in clinical trials, has demonstrated to be beneficial to health. Non-standardised ginkgo products are less expensive but also unlikely to compare to the ginkgo used in most studies.

It's also important to note that non-standardised preparations, such as a ginkgo leaf, may appear to be superior due to higher milligrams (mg) per capsule compared to a standardised extract, leading a consumer to believe it the better product. Without a firm guarantee of the content of active compounds, however, non-standardised ginkgo products may generate no noticeable health benefit.

As a key benefit from ginkgo biloba, it's important to secure an extract with a high antioxidant ability for clinical effect. A British study comparing the antioxidant activity in commercial ginkgo biloba preparations found that of 18 different preparations, the product with the highest activity was an extract standardised to glycoside and terpene lactone content and was produced under pharmaceutical control.<sup>10</sup>

Ginkgo biloba can be an incredibly effective herbal option for many conditions, with research showing benefits in brain health, Raynaud's, tinnitus and circulatory support. To get the best out of the supplement, it's important to consider a THR licensed and standardised product that shows a dedication to high levels of quality assurance and formula shown to deliver its many potential benefits.



Frankie Brogan has spent more than 10 years working in the nutrition and wellness industry, including clinics, private consultancy and health stores and his areas of expertise include nutritional supplements/nutraceuticals. As an Associate Registered Nutritionist (AfN), Frankie takes an ethical, practical and evidence-based approach to nutrition and wellness. He is Senior Nutritionist at Pharma Nord.

# The quality specialists

Family-run and with a passion for nutrition at its heart, **Specialist Supplements** is forging ahead with its advanced formulations and practitioner-focused business model. Rachel Symonds reports.

It was his history as a sportsman that first introduced Craig Garkov to sports nutrition products, and, in turn, motivated him to train as a nutritionist, having seen first-hand the effect that food and nutrients could have on the body.

Having then spent some time working for a supplement manufacturer during his training, Craig moved into practice, finding that the root of many of his clients' issues was the digestive system. He began creating personalised health programmes to support clients in both weight management and wellness, and, over time, Specialist Supplements was founded, with the aim being to provide bespoke formulas that would address people's health issues.

His approach and focus of correcting underlying digestive system issues first is how and why the Specialist Supplements range ended up including many supplements specific to the digestive system, such as digestive enzymes, the Candida and leaky gut specific blend, SPORegone, bowel cleansers with and without fibre content

(as fibre does not suit all customers), multi-strain and high strength probiotics, anti-parasitic formulas etc).

"We are passionate about the power of nature to heal, as well as the ability of the body to self-heal with the support of optimum nutrition. This ethos is reflected in our comprehensive range of herbal formulas, health foods and food form supplements, which are ideal for use in combination with practitioner treatments. We do not use artificial colours or sweeteners in our powders," Craig explained, adding: "We chose the company name, Specialist Supplements, for a reason – we have a bespoke range of products to suit virtually any health goal (including many unique, cutting-edge and complex blends) that aren't readily available on the highstreet."

It is for this reason that the business is thriving and is now a true family set-up; Craig is Managing Director, while wife, Bev, is a Director. With a background in modelling and agency management around the world, Bev brought her own unique set of skills to

the establishment and growth of the business. While primarily involved in day-to-day management and oversight of operations in partnership with Craig, she leads research on product trends, as well as the financial management of the business. Together, they have made Specialist Supplements what it is today. Their daughter, Dani, joined the company as Head of Marketing in 2011 and Dani's husband, Sam, came onboard in 2012.

"We created a range of supplements that was able to answer a growing consumer demand at the time. This was based on our unique insight into, and take on, how to approach long term inability for people to lose weight until digestive issues have been addressed. Coupled with our close links with local health practitioners in the early days of the business, this approach allowed us to fill a very particular gap in the market at the time," Craig explained.

"Our focus was on creating specialist formulas that incorporated





tailored blends of ingredients, which worked synergistically to achieve specific health goals.”

## A NUTRITIONAL EDUCATION

Going back to the beginning, Craig had a successful early career in power sports in the 1980s, which required both dedication and knowledge in nutrition and supplements to provide the edge in recovery and recuperation and it was this interest that led him into the field of nutrition.

Having worked for a large food supplements manufacturer for a number of years and after completing his training, he started off in gyms and health clubs, helping customers by devising personalised exercise, diet and supplement programs.

“This form of personalised health program was still in its infancy in the 1980s, and, therefore, it was a learning curve in the early stages as everyone is so unique and their bodies obviously react

differently to dietary, supplement and exercise changes,” Craig recalled.

What he did find all those years ago was that clients suffered most from digestive problems, with many not realising it was the root cause of many of their health issues and inability to lose weight. And so, he finetuned his approach to weight loss and began personalising his advice; everyone would start with a basic Clean Meal Plan, which eliminated most processed and frequently consumed foods. During the weekly consultations, the log sheets would be analysed, and foods added or removed, based on the customer’s comments after each meal.

He explained: “The number of calories, protein, carbohydrates and fats were not even discussed during the first four weeks as the aim was to determine which foods were causing problems for the specific client. In actual fact, I did not provide a calorie-restricted diet to his overweight clients, but started correcting the underlying

problems causing their inability to lose bodyfat weight – it was the beginning of his customised approach to weight loss and improved health, that still forms the basis of Specialist Supplements’ formulations some 25 years later.”

Specialist Supplements started off as The Slimming & Nutrition Consultancy, back in 1995, in Bournemouth, Dorset, as Craig’s main client base was made up of people who wanted to lose weight as their primary health goal.

Impressively, due to his success in helping so many people not only to lose weight, but feel better overall, a number of GP surgeries in the area started sending their patients to him.

In terms of the business expertise, in addition to Craig’s nutritional expertise, Bev has always had an interest in healthy eating.

“With a very rare and severe garlic allergy (yes, the bulb that is meant to be good for you in many ways, but will cause her an



anaphylactic attack), she too has always had a natural interest in healthy eating, nutrients and the effect that both have on the body and mind,” he explained.

Meanwhile, Dani, having trained as a solicitor and then practising for eight years, jumped at the chance to join the family business.

Craig added: “Having grown up in a household dedicated to health and fitness, with a deep understanding of nutrition, it seemed a completely natural step to bring her own unique set of skills to Specialist Supplements. Now running the legal, branding and marketing portion of the business, as well as the retail side, she is passionate about helping others to enter or grow their own ventures in this industry.”

Sam, meanwhile, has a background in marketing, print and publishing for some of the largest brands in the UK, and has a natural eye for design and insight into SEO and software development. He runs the web and design teams at Specialist Supplements, creating personalised websites for customers requiring an online presence and designing marketing materials.

## FORMULATION FOCUS

It was natural business progression and customer demand that led Craig to specialise in digestive system-based issues, such as leaky gut, Candida, constipation, halitosis, skin complaints etc. Using his years of experience and his nutritionist’s background, he formulated a small range of specialist formulas, aimed at local natural health practitioners, clinics and stores.

He was also fortunate enough to have met Thomas Bartram, who was also based in Bournemouth, a well-known Medical Herbalist who wrote the *Encyclopaedia of Herbal Medicine*.

“I consulted with this lovely, clever and wise herbalist on many occasions when formulating specific supplements with herbs and will be eternally grateful for his guidance and advice,” Craig explained.

In 2006, Craig and Bev relocated to beautiful mid-Wales and the business has grown exponentially from there, now supplying a comprehensive range of specialist products to customers from a variety of backgrounds, and across the world, including to

practitioners through The Natural Dispensary. The range is currently at around 40 products, with the majority relating to digestive health, including herbal bowel cleansers, fibre blends, practitioner-strength multi-strain probiotics, digestive aids, cleanse and detox products, leaky gut and anti-Candida supplements, fluid retention blends, alkalising supplements etc. There is also a Soil Association organic range.

The fastest growing product is its superfoods powder blend, GreeNourish Complete.

“This is our flagship organic and vegan product, boasting 35 foods and seven bio-active enzymes. It contains greens, fruits, berries, vegetables, herbs, seeds, broken cell wall chlorella and four types of mushroom. It is high in dietary fibre, which keeps the bowel working well, and has enough vitamin C per serving for an approved EFSA health claim on immunity,” Craig explained.

When you look in greater detail at the formulation, Craig emphasises that from the beginning, quality was a primary concern, with importance placed on sourcing high quality ingredients, organic if possible, and avoiding the use of artificial fillers, binders etc wherever reasonably possible.

“Ensuring the products were made in the UK, and that the ingredients were sourced direct from the manufacturers (and not raw material traders with limited documentation) gave us added peace of mind,” Craig explained, adding: “With my background in nutrition, I saw it as essential to formulate products that were as close to their original food form as possible, allowing the body to derive maximum benefits.”

When making any formulations, the team tends to use multiple food-based ingredients in a single formulation, giving the supplements broader application and greater efficacy. Unlike most standard highstreet stores, which tend to offer single-ingredient products, Specialist Supplements carefully formulates with ingredients that work in synergy and/or promote multiple beneficial outcomes.

There is also a clear focus on free from that support a number of lifestyle diets, such as vegetarian, vegan, dairy free, gluten free, kosher and organic.



"We also always seek to combine the best that natural health wisdom and nutritional science have to offer. The vast majority of our supplements are formulated with nutrients that have the backing of EFSA approved health claims and are suitable for vegans and vegetarians," Craig added.

## PRACTITIONER SUPPORT

Not only does Specialist Supplements offer a comprehensive range of cutting-edge, quality-assured (ISO 9001 and GMP) market-ready products, it also provides a range of tailored add-on services, including a branded own label range, a branded e-commerce website featuring the products, and personalised marketing materials.

Craig explained: "We are a full-service company. By dealing with just one supplier for all aspects of their business needs, our practitioner customers save both time and money (and get the benefit of our years of industry experience). We can provide our trade customers with a very low-cost and fast means of creating their very own range of products, if they wish to use our private label (own branding) service.

"For those new to the industry, such as newly qualified practitioners, or those who are too busy to familiarise themselves with latest technology but need to keep up-to-date with it, we can essentially provide them with a ready-to-trade business in a box. Virtually every aspect of our products and services can be customised to be personal to the customer. We even dropship own label orders with the option of a customised delivery note, at no extra cost. This is a huge benefit, and an option that the vast majority of our customers take up, as it is great for cash flow. They don't have to buy and store stock in advance, if they don't want to. They simply wait for their own orders from customers, and then place the corresponding orders with us."

Specialist Supplements has also invested heavily in bespoke automation software, which simplifies and speeds up order shipping and it has a bespoke flat postal pot automated labelling machine built, in order to be able to label bulk orders

for customers who have own label.

"Our unique business model offers trade customers the highest level of flexibility, lowest possible level of effort and the greatest chance of success," Craig added.

In terms of giving back, Specialist Supplements takes its responsibility seriously, sponsoring the local children's football team and supports a number of charities, making regular donations to Hillside Animal Sanctuary, The Donkey Sanctuary, Crisis, Alliance for Natural Health, *The Big Issue* and the RSPCA.

From an environmental perspective, all the products are manufactured in the UK, in 100 per cent recyclable product pots and lids, aiming for zero waste to landfill and reusing packaging materials whenever possible.

"We have Kosher approved certificates for a number of products and are also an FDA registered facility, which means we are able to ship bulk orders to the USA," Craig added.

The business is growing as there is greater demand for nutritional supplements, and Craig adds that the whole team continually strives to improve its product offering and adjust the range in line with demand and latest nutritional findings.

"We have some exciting new product launches on the horizon, including an organic mushroom blend with approved EFSA immunity health claims, which will be available later this month. It contains maitake mushroom, reishi mushroom, shiitake mushroom, lion's mane mushroom, chaga mushroom, black pepper, astragalus root and acerola fruit," he commented.

"In terms of how the business is managed, we have no plans to move away from our family-centred approach and core values, which are very important to us. For over two decades, we have been firmly focussed on providing our customers with high quality products at competitive prices. These values remain unchanged – we pride ourselves on the quality of our products and are very careful in the selection of our ingredients and suppliers. With years of industry experience, we believe we are the perfect supplier to help practitioners realise their goals in the health supplements market."



# CPD DIRECTORY

If you want to top up your CPD points, take inspiration from these forthcoming events.

## BANT Professional Supervision

May 8 – Milton Keynes

June 6 – Birmingham

CPD hours: BANT two hours

Speakers: Felicia Jones

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Felicia\\_Jones](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Felicia_Jones)

## BANT Local Network Meeting Invivo

CPD hours: BANT two hours

Speakers: Sue Camp

Website: [info@nutritionbyrosie.co.uk](mailto:info@nutritionbyrosie.co.uk)

## BANT Professional Supervision

May 20 – online group one

June 6 – Richmond

CPD hours: BANT two hours

Speakers: Carmel Buckley

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Carmel\\_Buckley](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Carmel_Buckley)

## BANT Professional Supervision

May 20 – Altrincham, Cheshire

CPD hours: BANT two hours

Speakers: Susan Fruhman

Cost: £30

Website: [info@susanfruhman.com](mailto:info@susanfruhman.com)

## BANT Professional Supervision

May 23 – online

June 6 – Romsey

CPD hours: BANT two hours

Speakers: Ruth Taylor

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Ruth\\_Taylor](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Ruth_Taylor)

## BANT Professional Supervision

June 5 – Manchester group one

CPD hours: BANT two hours

Speakers: Dalbinder Bains

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Dalbinder\\_Bains](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Dalbinder_Bains)

## BANT Professional Supervision

June 7 – Hereford

CPD hours: BANT two hours

Speakers: Debbie Lewis

Cost: £30

## BANT Professional Supervision

June 14 – Chesham

CPD hours: BANT two hours

Speakers: Tracey Harper

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Tracey\\_Harper](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Tracey_Harper)

## BANT Professional Supervision

June 18 – Edinburgh

CPD hours: BANT two hours

Speakers: Sarah Stelling

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Sarah\\_Stelling](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Sarah_Stelling)



# FORTHCOMING WEBINARS

Target Publishing, which publishes *Nutrition I-Mag*, hosts a series of free webinars for practitioners.

Register at [www.ihcanconferences.co.uk/webinar](http://www.ihcanconferences.co.uk/webinar)

## Histamine intolerance or allergy? Practical ways to identify and address these conditions

OptiBac Probiotics

Presented by Sarah Oboh BSc (Hons) Nutrition, ANutr

Tuesday, May 7, 6.30pm-7.30pm

**OptiBac**  
probiotics

While the debate continues into whether histamine intolerance is a disease or not, the fact remains that an increasing number of individuals are suffering with the symptoms of high histamine levels circulating in the bloodstream.

Both histamine intolerance and allergies share similar clinical manifestations of disease, however, as practitioners, it is important for us to understand the nature of these conditions, so that we can support our clients with tailored therapeutic interventions based on scientific research and clinical expertise. A lot remains to be discovered when it comes to histamine intolerance, but we will examine some of the current approaches to rebalancing the levels of histamine in the body and how this approach differs from addressing a common allergy.

In this webinar, we will look at:

- The fundamental difference between allergies and histamine intolerance.
- The role of gut health in histamine intolerance and allergies, such as hay fever.
- A dietary and supplemental approach to rebalancing histamine levels.

**PLACES ARE LIMITED**

**'MENARCHE TO MENOPAUSE  
– HOW TO SUPPORT OUR  
FEMALE CLIENTS IN A HORMONAL WORLD'**

This year's Naturopathic Nutrition Association conference tackles the fascinating topic of female health. Join us at this one-day event with three expert speakers who'll be tackling this complex subject.

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- Audio, video and presentation downloads from the co-located event, the IHCAN Summit (worth £50).

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# SUPER FARE

Inject some excitement into your cuisine with these healthy recipes from Tanita de Ruijt's *Super Roots*.



Gado gado



Herb and turmeric  
pancakes



Turmeric corn fritters



# Gado gado Serves 2-3



The most nostalgically 'Dutch' meal I know is, in fact, Indonesian street food. Gado gado means 'mix mix' and you essentially mix everything up and tuck in. It's also how you colloquially refer to people from mixed cultural backgrounds in Bahasa, hence the sentimental value here. Packed full of energising veggies, spices and legumes, the combination of textures and flavours make this salad both satisfying and invigorating. Use any seasonal vegetables of choice. I serve this with the turmeric peanut sauce, prawn crackers and a steamed egg. Cooked rice is great, too. To make this vegetarian or vegan, omit the crackers and eggs.

## INGREDIENTS:

- 150g (5oz) new potatoes, halved
- Handful of green beans, trimmed and each cut into 3 pieces
- ¼ cabbage of choice, thinly sliced
- 200g (7oz) spinach
- 200g (7oz) bean sprouts
- 8-10tbsp coconut oil

- 50g (2oz) tempeh, thinly sliced (optional)
- 50g (2oz) firm tofu, thinly sliced (optional)

## To serve:

- 2 eggs, steamed for 7 minutes, then peeled and halved (optional)
- Prawn crackers (optional)

## METHOD:

- 1 Put the potatoes in a pan of water, bring to the boil and cook until soft.
- 2 Meanwhile, cook the green beans in a saucepan of salted boiling water for two minutes, then add the softer vegetables (cabbage, spinach and bean sprouts) and cook for another minute. Drain, rinse under cold running water and leave in a colander, squeezing off the excess water every couple of minutes with your hands.
- 3 Melt the coconut oil in a deep frying pan (skillet) over a medium-high heat until it reaches 160-180°C (320-350°F) (if you don't have a thermometer, put a wooden spoon in the oil – as soon as bubbles start to come to the surface, the oil is ready).
- 4 Fry the tempeh and tofu (if using) in batches, separately, for five minutes each until golden brown all over and the tempeh is crispy.
- 5 Place all the cooked vegetables on a large serving dish with the tofu and tempeh. Then, slather the peanut sauce over them generously (if using). You can use a pestle and mortar to help mix everything up.
- 6 Serve, with the eggs and crackers.

Herb and turmeric  
pancakes



Turmeric corn  
fritters





# Herb and turmeric pancakes Serves 5



I discovered these sizzling anti-inflammatory turmeric pancakes – also called banh xeo – from Vietnam, packed with the freshest aromatic herbs and a zingy dipping sauce, at Kylie Kwong's stall, at Carriageworks Farmers Market, in Sydney, Australia, and never looked back. Vegetarian and vegan.

## INGREDIENTS:

### Pancake batter (makes 15):

- 200g (7oz/generous 1 cup) rice flour
- 240ml (8½ fl oz/1 cup) full-fat coconut milk
- 240ml (8½ fl oz/1 cup) cold water
- Pinch of unrefined sugar
- ½ tsp sea salt
- 2tsp ground turmeric
- 2tbsp coconut oil, for frying

### Filling:

- 2 carrots, julienned
- 1 cucumber, julienned
- 2 spring onions (scallions), trimmed and thinly sliced
- Small bunch each of mint, coriander (cilantro) and Thai basil

### Sauce:

- Juice of 2 limes
- 1tsp sesame oil
- 1tbsp coconut sugar
- 2tsp grated fresh ginger root
- 1 red chilli, finely chopped
- 1 garlic clove, crushed
- ½ tsp sea salt

### To serve:

- Lime wedges
- Probiotic sriracha

## METHOD:

- 1 Start by making the pancake batter; mix all the batter ingredients together, except for the oil, in a large bowl. The batter should be runny like crêpe batter.
- 2 Heat a non-stick frying pan (skillet) over a medium heat, lightly grease with some of the coconut oil, then pour in a ladle of batter and swirl to coat the base of the pan (the pancakes should be very thin). Cook the pancake until tiny holes start to appear on the surface and it colours lightly on the underside, then flip and cook on the other side until coloured on both sides. Repeat with the rest of the batter, and extra coconut oil as necessary. Once you've cooked them all, let them cool and keep to one side.
- 3 Combine the filling ingredients in a bowl. Then, in a separate bowl, whisk the sauce ingredients together. Add the sauce to the filling and toss to combine.
- 4 To serve, fill the cooled pancakes with the dressed filling, roll up and serve alongside wedges of lime and maybe some sriracha too.

Gado gado



Turmeric corn fritters





# Turmeric corn fritters Serves 2



Extracted from *Super Roots* by Tanita de Ruijt (Hardie Grant, £16.99) Photography © Patricia Niven.

Textured, spicy, moist and absolutely delicious, these fritters – also called pedel jagung – are great served with ginger and tomato sambal or kecap manis dressing diluted with a bit of water and sprinkled with chillies and shallots. Be good to yourself. Vegetarian.

## INGREDIENTS:

### Fritters:

- 200g (7oz/1 cup) fresh corn kernels or tinned corn, drained
- 1 egg
- 2 garlic cloves
- 2tsp ground turmeric or 2cm (¾ in) piece of fresh turmeric
- 2cm (¾ in) piece of fresh ginger root
- 1tsp coriander seeds
- 1tsp cumin seeds
- 1tsp cayenne pepper
- Pinch of sea salt
- 2 spring onions (scallions), trimmed and chopped
- ½ celery stalk, grated

- 1tbsp chopped coriander (cilantro)
- 1 small carrot, grated
- 20-30 g (¾-1 oz/scant ¼ cup) rice flour or cornflour
- 1 long red chilli, finely chopped
- 10tbsp coconut oil, for deep-frying

### Dressing:

- 4tbsp kecap manis (Indonesian sweet soy sauce)
- 1tbsp water
- 4 Thai chillies, thinly sliced
- 1 shallot, thinly sliced

## METHOD:

- 1 Put half the corn kernels in a blender or food processor, along with the egg, garlic, turmeric, ginger, spices and a pinch of salt, and blitz until smooth.
- 2 Pour the mixture into a jug or bowl and add the rest of the fritter ingredients; the spring onions, celery, coriander, carrot, the remaining corn kernels, the rice flour or cornflour and chilli. Stir to combine.
- 3 Meanwhile, heat the coconut oil in a deep frying pan (skillet) over a medium-high heat until it reaches 160-180°C (320-350°F) (if it's any hotter, the fritters will burn before they are fully cooked through). If you don't have a thermometer, put a wooden spoon in the oil – as soon as bubbles start to come to the surface, the oil is ready.
- 4 Add one heaped tablespoon per fritter to the hot oil, cooking in batches of four at a time, and fry for about five minutes on each side, turning them halfway, until golden brown. Remove with a slotted spoon and drain on paper towels and repeat with the rest of the batter.
- 5 Make the dressing by mixing all the ingredients together. Serve the warm fritters with the sauce.

Gado gado



Herb and turmeric pancakes



# I-Mag giveaways

We showcase a selection of giveaways on offer to readers this issue.



## BIOCARE OSTEO INTENSIVE

Osteo Intensive from BioCare is a high potency, synergistic nutrient and plant extract formula designed to support bone health. It combines magnesium and calcium in their bioavailable forms with boron, and vitamin D and K2. Magnesium, calcium, manganese, vitamin D and K and boron all contribute to the maintenance of normal bones and teeth. It provides vitamin D3 derived from the unique source, lichen, which makes it suitable for those following vegan and vegetarian diets.

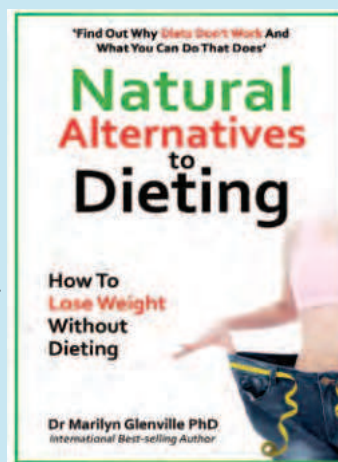
🍏 **I:Win:** We have five to give away.



## NATURAL ALTERNATIVES TO DIETING BY DR MARILYN GLENVILLE PHD

Exploding the diet myths, how to lose weight and stay healthy without dieting. This book will give you a new attitude towards food. It takes you to a new and enjoyable way of living so that you can eat comfortably in restaurants, and with family and friends, so no matter where you are or who you're with, you can have a normal social life. At the same time, you will lose weight and this time you will keep it off. This book will introduce you to a more natural way of eating that is satisfying and nourishing, while your weight reduces naturally over time and then stabilises.

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