



FOCUS ON FATIGUE

Nutritional interventions for helping clients address symptoms of fatigue



Immune health protocols

Nutrition experts discuss how to build immune defences

Diabetes management

Recommendations for supporting clients with the increasingly prevalent type 2



MUSHROOM BIOSCIENCE

THE SECRET IMMUNE-BOOSTING POWER OF MEDICINAL MUSHROOMS

for kids

for adults

100% certified
ORGANIC MUSHROOMS

suitable for
**CELIACS, LACTOSE INTOLERANCE,
VEGETARIANS AND VEGANS.**



5 of the best
MEDICINAL MUSHROOMS
WITH PREBIOTICS
Vitamins C & D

Medicinal mushrooms have immunomodulating effects, they help keep the immune system in balance, stimulating it when there's something to fight and downregulating it when it's overactive.



Register in our professional area to access all the latest news and training resources

www.hifasdaterra.co.uk

In partnership with:



Welcome



Life is clearly returning to some normality as we can go about our daily lives with relatively few, if any restrictions. This is great news both for you as recent graduates taking your first steps into practice, but also for those still studying.

What these steps back to normality also signal is the return of in-person events, something our industry has missed hugely in the last 18 months. One of those key events for nutritional therapists is the

IHCAN Conference series, a range of one-day events designed to support you – whether practising or studying – in your career.

These events are always hugely popular, and although the organisers, Target Publishing, which also publishes this magazine, moved some of the events to be virtual, there really is nothing like in-person learning, sharing ideas and networking. Which is why we are delighted to be seeing the first in-person IHCAN Conference of 2021 being held on September 18. Taking place at the new venue of 155 Bishopsgate (where the IHCAN Summit is usually held), there will be three expert speakers, a three-course gluten-free lunch, along with 30 exhibitors. You can also earn 4.5 hours CPD points.

Spaces are filling up fast, so to book your place, visit www.ihcanconferences.co.uk – the team looks forward to seeing you there.

RACHEL SYMONDS, EDITOR

Rachel

NUTRITION I-MAG, Target Publishing Limited, The Old Dairy, Hudsons Farm, Fieldgate Lane, Ugley Green, Bishops Stortford CM22 6HJ

t: 01279 816300 e: info@targetpublishing.com www.nutritionimag.com

Meet The Team

EDITOR Rachel Symonds **CONTRIBUTORS** Martina Della Vedova, Katarzyna Maresz, Rose Holmes, Frank Brogan
SALES & PUBLISHING DIRECTOR Ruth Gilmour e: ruth.gilmour@targetpublishing.com **KEY ACCOUNTS DIRECTOR** Abigail Morris e: abigail.morris@targetpublishing.com
SALES MANAGER Maria Francis e: maria.francis@targetpublishing.com **DESIGN/PRODUCTION**
 Annabelle Duggan e: annabelle.duggan@targetpublishing.com
MARKETING DIRECTOR James Rix e: james.rix@targetpublishing.com
ACCOUNTS Lorraine Evans e: accounts@targetpublishing.com
MANAGING DIRECTOR David Cann e: info@targetpublishing.com

The *Nutrition I-Mag* is published by Target Publishing Limited, the leading publisher and conference organiser serving the natural, complementary health markets, as well as the leisure, education, sport and eco markets.

www.targetpublishing.com
ISSN 2049-4017

Some material may be speculative and/or not in agreement with current medical practice. Information in *Nutrition I-mag* is provided for professional education and debate and is not intended to be used by non-medically qualified readers as a substitute for, or basis of, medical treatment. Copyright of articles remains with individual authors. All rights reserved. No article may be reproduced in any form, printed or electronically, without written consent of the author and publisher. Copying for use in education or marketing requires permission of the author and publisher and is prohibited without that permission. Articles may not be scanned for use on personal or commercial websites or CD-ROMs. Published by Target Publishing Limited. The Publishers cannot accept any responsibility for the advertisements in this publication.

CONTENTS



IMMUNE SUPPORT

Your practitioner guide to building immune strength



DIABETES

Management of the increasingly common condition



FATIGUE

Expert insight into the nutritional approaches to dealing with fatigue



INGREDIENT FOCUS

A closer look at the latest developments in probiotics



RECIPES

Creative cooking with tofu



EDUCATION

All the news from the 2021 IHCAN Summit

NEWS

The developments in the world of nutrition

RESEARCH

We bring you up to date with the latest scientific developments

PRODUCT WATCH

What's new to market

ASK THE EXPERTS

Nutritional experts answer your questions

COMPANY PROFILE

Minami Nutrition – the leading experts in essential fats discuss future plans with a practitioner focus

NUTRITION I-MAG GIVEAWAYS

OUR CONTRIBUTORS

Each issue, *Nutrition I-Mag* enjoys contributions from many leading authorities in the nutrition world. This issue, our writers include:



Dr Katarzyna Maresz

Dr Katarzyna Maresz is the President of the International Science and Health Foundation and the scientific coordinator of the educational portal, VitaminK2.org. Having published more than 30 scientific papers, she is involved in clinical trials with vitamin K2 in Poland and Europe.



Rose Holmes

Rose Holmes, Registered Nutritionist, mBANT, BSc, Dip.ION, PGCE, has a special interest in chronic illness, circadian rhythm disruption and healthy ageing. She is the Education and Training Manager at Rio Health, which specialises in South American teas and supplements.



Dr Marilyn Glenville PhD

Dr Marilyn Glenville PhD is one of the UK's leading Nutritionists. She is the author of a number of internationally bestselling books, including *Natural Solutions For Dementia and Alzheimer's*.



Frank Brogan

Frank Brogan has spent more than 12 years in nutrition and wellness, including clinics, private consultancy and health stores. His areas of expertise include nutritional supplements/nutraceuticals. As a Registered Nutritionist (AfN), Frank takes an ethical, practical and evidence-based approach. He is Senior Nutritionist at Pharma Nord.



Martina Della Vedova

Martina Della Vedova graduated in Functional Genomics, in Italy, and she obtained a Masters in Genetics in Paris. She then developed a passion towards nutrition and in London, she qualified as a Nutritional Therapist. She is a member of BANT and is CNHC registered, and works as Nutritional Advisor and Nutritionist at NaturesPlus.



Elouise Bauskis

Elouise Bauskis ND, BSc, DN, DBM is an Australian-trained Naturopath, Nutritional Therapist and Herbalist with 15 years' experience in private clinical practice and 20 years' experience within the complementary and alternative medicine industry. She is a member of both the Association of Master Herbalists and the General Naturopathic Council and works in technical support at Nutri Advanced

News Bites

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

EATWELL GUIDE KEY TO SUSTAINABLE DIETS, NUTRITION REVIEW FINDS

The British Nutrition Foundation (BNF) has suggested that adherence to the Government's Eatwell Guide is the key to more sustainable diets.

The review paper, *Healthier and more sustainable diets: what changes are needed in high-income countries?*, examines the current evidence on the changes required in high-income countries to make diets more environmentally sustainable, as well as healthier, and identifies research gaps and opportunities. It highlights the need to consider nutritional quality of diets, alongside environmental benefits, in order to achieve sustainable diets that benefit both human and planetary health.

The review said that following Government-backed healthy eating advice, such as the UK's Eatwell Guide, can deliver health and environmental benefits if adhered to at a population level, however, currently less than one per cent of people are achieving all of the Eatwell Guide recommendations.

The guide describes a diet that is rich in foods from plants, but can also include some meat, dairy, fish and eggs. A consistent finding of the review is that achieving diets that are both healthier and more sustainable requires a shift in the food choices we make to include more plant-derived foods, including vegetables, fruit, wholegrains, beans and other pulses, nuts and seeds, and plant-based meat alternatives that provide essential nutrients and are lower in salt and saturated fat.

Professor Judy Buttriss, Director General of the British Nutrition Foundation and co-author of the review, commented: "Looking at the available evidence, we recommend that an obvious step is to work together with others in the field of nutrition and beyond to promote diets aligned with the UK's Eatwell Guide. An advantage of this kind of plant-rich diet, which can still include some meat, fish, dairy products and eggs, is that it is based on dietary patterns already familiar in the UK and already being adopted to some extent by many of us. However, currently less than one per cent of people are achieving all of the Eatwell Guide recommendations, and so there is room for improvement for almost all of us."

The review also pointed out that, as highlighted in the recent National Food Strategy recommendations from Henry Dimbleby, if everyone in the UK complied with the current advice, this would reduce consumption of red and processed meat overall by about a quarter.

Professor Buttriss continued: "While the evidence-base on sustainable food systems has grown significantly in recent years, all too often, nutritional quality and delivery of essential nutrients is not considered in judgements about the environmental impact of foods and diets. It's vital that nutrition is central in discussions about transformation of food systems so that we don't risk encouraging dietary changes that might benefit the environment but could be detrimental to people's health."



PROBIOTIC DEMAND RISES, ACCORDING TO NEW DATA

The use of probiotics is on the rise as digestive health moves up the agenda.

That's according to a major global survey from makers of the probiotic, BC30, which found that one in four consumers (25 per cent) had used a product containing probiotics over the past six months – up from 21 per cent in 2019. A further 44 per cent would consider doing so, up from 40 per cent in 2019. Usage was particularly high in China, where almost half (49 per cent) of respondents had used a product containing probiotics over the past six months, followed by Mexico (42 per cent).

Part of Kerry's ProActive Health portfolio, BC30 surveyed over 13,000 consumers across 16 countries. Globally, nearly half (47 per cent) were aware of probiotics or cultures – significantly more than the 42 per cent who were aware in 2019, when the survey was last conducted. Awareness was particularly high in Latin America (63 per cent) and North America (61 per cent).

The findings suggest that demand for probiotics is linked to increasing interest in digestive health, which consumers ranked third on their list of

reasons to purchase healthy lifestyle products – up from fourth in 2019. Nearly four in 10 (38 per cent) of survey respondents globally had used some form of digestive health product over the past six months, almost as high as the number who had used an immune health product (39 per cent).

John Quilter, Kerry VP of Global Portfolio – ProActive Health, commented: "A range of factors have driven the continuing growth in demand for gut health solutions generally, and for probiotics in particular. Demographic changes such as population ageing and lifestyle choices have increased the prevalence of digestive disorders, while the pandemic has accelerated the shift towards more proactive approaches to health. As a result, consumers want to see functional ingredients in their favourite food and beverage products, and they're increasingly well educated about the role of probiotics and their ability to support both digestive health and overall wellness. Manufacturers who formulate functional foods and beverages using science-backed probiotic strains can therefore meet a range of market needs."

National campaign to encourage Brits to make lifestyle change expands

The British Heart Foundation is the latest organisation to join the We Are Undefeatable campaign to help support and encourage those with long-term health conditions.

We Are Undefeatable is a collaboration between various health and mental wellbeing charities, supported by National Lottery funding and expertise from Sport England, which aims to support and inspire some of the 43 per cent of people in England who live with a health condition to get active in a way that works for them. Its purpose is to support and encourage those with long-term health conditions to find ways to be active that work with their condition, not against them.

The addition of the British Heart Foundation brings another dimension to the charity offering. Funding vital research into heart diseases, stroke and vascular dementia, the BHF also provides a range of support and guidance on coping with heart and circulatory diseases.

Neil Tester, Director of The Richmond Group of Charities, which coordinates the charity partners, commented: "Even small increases in physical activity bring benefits to people with a wide range of long-term health conditions, so being able to further support those with heart conditions in ways that are appropriate and safe will have a hugely positive

impact."

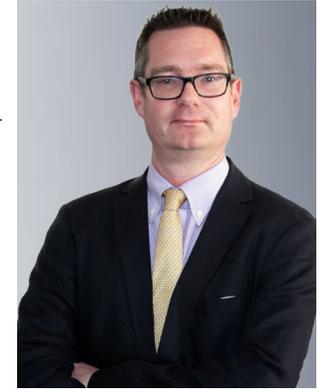
Dr Charmaine Griffiths, Chief Executive at the British Heart Foundation, added: "As the people at the heart of this campaign demonstrate, you don't need to climb a mountain or spend hours in the gym to improve your health. Doing just a few minutes of activity every day, such as going for a short walk during your lunch break, can make all the difference to people with heart and circulatory diseases and other long-term conditions."



New leader for HFMA

The Health Food Manufacturers' Association (HFMA) has announced the appointment of a new Chair.

Steve Mann (pictured), Director of External Regulatory Affairs at Nelsons, has been confirmed to the new role. Steve, who had previously served as Vice-Chair, is now replaced in that role by Aileen Green, who is Director of Regulatory Affairs & Compliance at ADM Protexin.



The Health Food Manufacturers' Association has also announced the elevation of outgoing Chair, Robert Taylor, to Vice-President. For the last seven years, Robert, Senior Vice-President at Vitabiotics, served with distinction as Chair, and at the recent annual meeting of HFMA members, he was unanimously elevated to the honorary position of Vice-President – only the third person in the HFMA's 56-year history to hold that role.

Steve commented: "It is a privilege to be the new Chair of the HFMA, and to build on the progression made over the last several years by Robert. These are both challenging and exciting times for our industry, and the HFMA has been at the forefront as we've navigated both the challenges of the pandemic, and the UK's departure from the EU.

"I know just how hard the HFMA works, through its committees, partnership-working and external influence, and just how vital this trade association is. There is a huge amount of work ahead to keep natural products at the forefront of people's minds at every level; Government and Whitehall, the media, retailers and consumers. With the HFMA membership growing quickly, and the trajectory for natural products being very positive, I'm looking forward to working with all of the HFMA team, and with all stakeholders, to promote the essential work we do."

In Research

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

Research reveals scale of those untreated with hypertension

More than 700m people globally are living with untreated hypertension, according to a new study.

The number of people living with hypertension has doubled to 1.28bn since 1990, with the number of adults with hypertension increasing from 650m in the last 30 years, according to the first comprehensive global analysis of trends in hypertension prevalence, detection, treatment and control, led by Imperial College London and the World Health Organization (WHO), and published in *The Lancet*. Nearly half these people did not know they had hypertension.

The study, conducted by a global network of physicians and researchers, covered the period 1990-2019. It used blood pressure measurement and treatment data from over 100m people aged 30-79 in 184 countries, together covering 99 per cent of the global population, which makes it the most comprehensive review of global trends in hypertension to date.

By analysing this massive amount of data, the researchers found that there was little change in the overall rate of hypertension in the world from 1990 to 2019, but the burden has shifted from wealthy nations to low- and middle-income countries. The rate of hypertension has decreased in wealthy countries – which now typically have some of the lowest rates – but has increased in many low- or middle-income countries.

As a result, Canada, Peru and Switzerland had among the lowest prevalence of hypertension in the world in 2019, while some of the highest rates were seen in the Dominican Republic, Jamaica and Paraguay for women and Hungary, Paraguay and Poland for men.

Although the percentage of people who have hypertension has changed little since 1990, the number of people with hypertension

doubled to 1.2bn. This was primarily due to population growth and ageing. In 2019, over one billion people with hypertension (82 per cent of all people with hypertension in the world) lived in low- and middle-income countries.

The study also revealed significant gaps in diagnosis and treatment; about 580m people with hypertension (41 per cent of women and 51 per cent of men) were unaware of their condition because they were never diagnosed. The study also indicated that more than half of people (53 per cent of women and 62 per cent of men) with hypertension, or a total of 720m people, were not receiving the treatment that they need.

Professor Majid Ezzati, senior author of the study and Professor of Global Environmental Health at the School of Public Health at Imperial College London, commented: "Nearly half a century after we started treating hypertension, which is easy to diagnose and treat with low-cost medicines, it is a public health failure that so many of the people with high blood pressure in the world are still not getting the treatment they need."

The WHO Guideline for the pharmacological treatment of hypertension in adults provides new recommendations to help countries improve the management of hypertension.

Dr Bente Mikkelsen, Director of WHO's Department of Noncommunicable Diseases, added: "The need to better manage hypertension cannot be exaggerated. By following the recommendations in this new guideline, increasing and improving access to blood pressure medication, identifying and treating comorbidities such as diabetes and pre-existing heart disease, promoting healthier diets and regular physical activity, and more strictly controlling tobacco products, countries will be able to save lives and reduce public health expenditures."



Study describes vitamins D deficiency as global health issue for black community

New research from the University of Surrey has stressed that vitamin D deficiency is a global health issue for the black community.

The study has recommended that people from the African-Caribbean community should consider increasing their consumption of vitamin D-rich foods and taking additional vitamin D supplements, especially in the winter months.

In the paper, published by *The European Journal of Clinical Nutrition*, the university's researchers conducted a systematic review of the vitamin D and dietary intakes of members of the black community across the globe. The findings suggest that people of African descent should consider taking vitamin D supplements and consume more vitamin D-rich foods.

The researchers found that when looking at black individuals who live in low latitude countries (such as Brazil and South Africa), there was vitamin D sufficiency. However, in those who live at higher latitudes, such as in the UK, vitamin D deficiency and insufficiency was common.

The Surrey researchers' findings suggest that awareness of vitamin D deficiency needs to be highlighted in African-Caribbean populations, especially those living in countries like the UK, where low dietary vitamin D intake was prevalent.

Rebecca Vearing, PhD research student from the Department of Nutritional Sciences at the University of Surrey, explained: "As the majority of our vitamin D comes from exposure to sunlight, for many people, getting enough vitamin D may be a real challenge. This research shows that eating

a nutritionally balanced diet including foods that provide vitamin D – such as oily fish, red meat, egg yolk and fortified foods such as breakfast cereals – and taking regular supplements are key to boosting vitamin D status."

These findings are supported by a second paper from the university, published in *The Journal of Nutrition*, where researchers studied how vitamin D supplements and sunlight exposure affect the health of Brazilian women living in both the UK and Brazil.

This first-of-its-kind study examined two groups of the same ethnic identity and sex, living in different countries in an identical way and looked at whether supplements or sunlight altered the vitamin D status of its participants.

Researchers studied 120 healthy Brazilian women in parallel, double-blind, randomised, placebo-controlled trials conducted at different latitudes in Brazil and England. Participants were chosen randomly to receive a daily vitamin D supplement or placebo for 12 weeks during the wintertime.

Researchers found that although vitamin D dietary requirements may vary considerably between participants in each country, a moderate dose of vitamin D supplementation is a remarkably effective strategy for raising and maintaining adequate vitamin D levels over the winter months in both the UK and Brazil.

The participants with the lowest initial vitamin D levels had the most significant increases in response to vitamin D supplements. Overall, the study found that the effect of vitamin D supplements is not dependent on latitude.



Importance of exercise and iron

Researchers have discovered that physical exercise modulates iron in Alzheimer's disease.

The recent experimental study shows how regular physical exercise modulates iron metabolism in both the brain and the muscles, with the researchers concluding that the findings also help to better understand the benefits of exercise in Alzheimer's disease.

The study was published in a special issue of the *International Journal of Molecular Sciences* entitled Redox Active Metals in Neurodegenerative Diseases: Therapeutic Implications. It involved the researchers utilising wildtype mice and 5xFAD transgenic mice, modelling AD to explore the effect of regular physical exercise on the modulation of iron homeostasis. Half of the mice had unlimited use of a running wheel during the six-month experiment. The levels of iron and iron-related proteins were analysed in the brain and skeletal muscle. The researchers also investigated the potential involvement of iron in the crosstalk between the brain and periphery upon regular exercise.

They said that the current study demonstrates that regular physical exercise modulates iron storage and trafficking in both the brain and skeletal muscle. Moreover, this study is the first to report a reduction of cortical hepcidin in response to regular physical exercise.

"The results suggest that IL-6 is a key modulator of hepcidin in exercise-induced brain iron modulation. These findings help to better understand why regular exercise is beneficial in AD and may provide new insight for disease prevention or effective treatment approaches," they said.



Role of histamine in depression researched

Histamine could be a key player in depression, according to the results of a new study.

The findings, from researchers at Imperial College London and University of South Carolina, add to mounting evidence that inflammation, and the accompanying release of the molecule, histamine, affects a key molecule responsible for mood in the brain – serotonin.

In the study, it was found that bodily inflammation dampens levels of a ‘feel-good molecule’ and antidepressants’ ability to boost them in mice. If replicated in humans, the researchers say the findings – which identify histamine as a ‘new molecule of interest’ in depression – could open new avenues for treating depression, which is the most common mental health problem worldwide.

Lead author, Dr Parastoo Hashemi, from Imperial’s Department of Bioengineering, explained: “Inflammation could play a huge role in depression, and there is already strong evidence that patients with both depression and severe inflammation are the ones most likely not to respond to antidepressants.

“Our work shines a spotlight on histamine as a potential key player in depression. This, and its interactions with the ‘feel-good molecule’ serotonin, may thus be a crucial new avenue in improving serotonin-based treatments for depression.”

The researchers say that if their work translates to humans, it could help us towards eventually diagnosing depression by measuring chemicals like serotonin and histamine in human brains. They also say the findings open new avenues to explore histamine as a causative agent of depression, including potentially developing novel drugs that reduce histamine in the brain.

Dr Hashemi added: “Inflammation is a whole-body response and is therefore hugely complex. Depression is similarly complex, and the chemicals involved are affected in myriad ways by both genetic and environmental factors. Thus, we need to look at more complex models of depression behaviours in both mice and humans to get a fuller picture of both histamine and serotonin’s roles in depression.”

This study was funded by the National Institutes of Health (National Institute of Mental Health).



Major research project announced to support long Covid patients

A new million-pound research project to investigate support for long Covid patients has been announced.

The University of Lincoln, alongside five other British universities, will work on potentially ground-breaking research commissioned by the National Institute for Health Research (NIHR) to understand and tackle long Covid.

As part of the study, academic staff will work with long Covid patients to design methods of support personalised to specific needs. Alongside providing resources such as potential treatments and diagnostics, training for community practitioners will also be employed to deliver one-to-one support for patients.

The project will use the personal accounts of patients to develop materials such as blog posts and podcasts to investigate possible intervention strategies, which will be presented to patients and services in the form of clinical delivery.

Professor Niro Siriwardena, the University of Lincoln’s representative in the research, commented: “Long Covid has been a worrying and unexpected outcome from the pandemic and is affecting many. We need to develop effective personalised approaches for people, affected in different ways by long Covid, to help themselves supported by professionals. This study will work with patients and healthcare staff to do just that and will evaluate how well the newly designed approach works and provides value for money.”

The research is expected to create peer reviewed publications and conference presentations on methods of intervention that, if effective, will be implemented nationwide.

New to market

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

ENZYME ADDITION



Microbiome Labs has developed a new supplement to support the gut.

Fodmate is an innovative enzyme formula designed to help support digestive health, including relief from occasional cramping, bloating, flatulence, diarrhoea, and constipation that may result from the consumption of high FODMAP foods.

It can be used in conjunction with a low FODMAP diet or to support the digestion of high FODMAP foods.

Key ingredients includes lactase, which helps break down lactose from milk products, alpha galactosidase, to break down sugars in legumes and other complex carbohydrates, and endo and exo inulinase, which breaks down inulin and fructan fibres. It also contains glucose isomerase, to break down fructose sugars found in many fruits, and pectinase to help break down fermentable pectin.

Bio-Kult expands with Brighten

The latest addition to the Bio-Kult range comes in the form of Brighten, a supplement described as helping to bring out your inner smile.

The advanced multi-action formulation is formulated with the same 14 strains found in the original best-selling Bio-Kult, but also benefits from the addition of vitamins B6 and B12, which contribute to normal psychological function, as well as the reduction of tiredness and fatigue.

Brighten also includes vitamin D and zinc, which, alongside vitamins B6 and B12, contribute to the normal function of the immune system.

Bio-Kult Brighten is suitable for use in pregnancy, with total bacteria count viable until the end of shelf life.



NaturesPlus announces a number of new additions

immune

Engineered by Nature.

BACKED BY SCIENCE.



NaturesPlus.

Also new to NaturesPlus is GI Nutra Pro-Bio, with 120bn live bacteria, 35 unique strains, with powerful prebiotics. Furthermore, the GI Nutra range now also feature Pro-Bio Women and Pro-Bio Kids.

The range at NaturesPlus has expanded with the launch of a new line of immune support supplements.

NaturesPlus Immune is described as the most advanced line of immune support supplements, with each formula designed to be taken every day or stacked for extra nutritional support for immune protection.

The range consists of seven products, including Immune Boost, which delivers six key nutrients to support respiratory and overall immune system health, and Immune Mushroom, consisting of the nutrient-rich fruiting bodies of seven mushrooms, carefully selected for their immune boosting properties, and no mycelium. There is also Immune Vitamin D35000iU, emulsified for better absorption and Immune Zinc Lozenges, which contains three absorbable forms of zinc and also copper.

STRESS SUPPORT FROM BODYBIO



Calm is the latest addition to the range at BodyBio.

Designed not only to help you achieve homeostasis, but to help you maintain a healthy stress response during the homeodynamics of everyday life, Calm features anti-stress ingredients such as rhodiola rosea, phosphatidylserine, taurine, glycine and manganese.

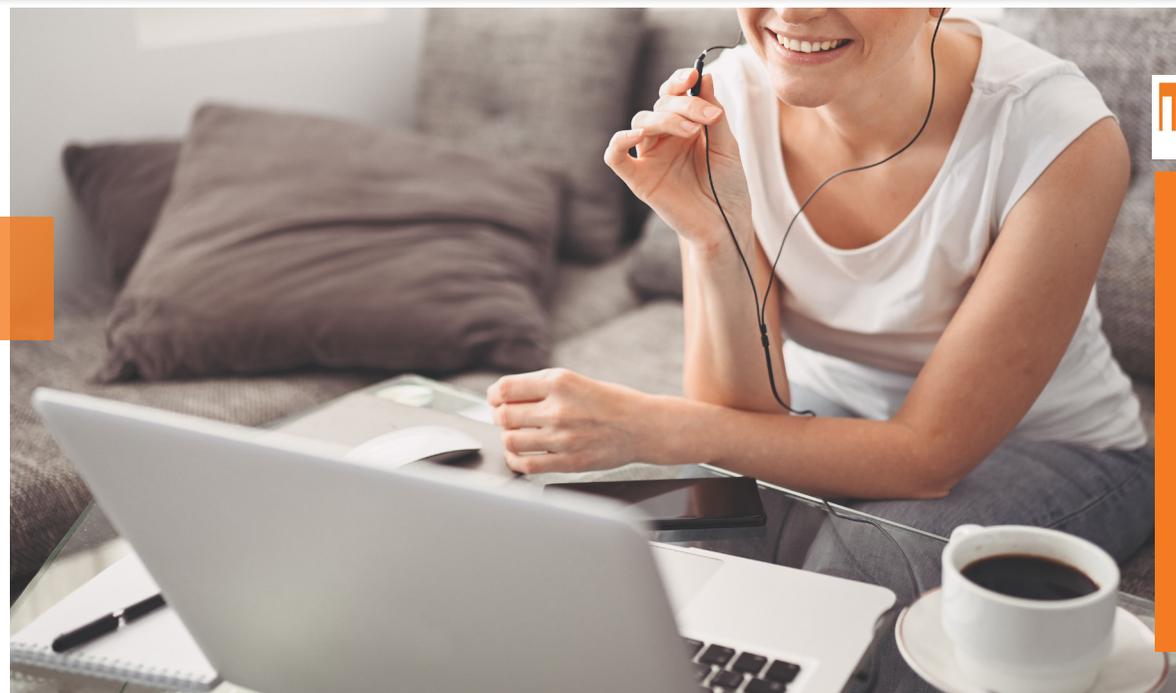
BodyBio says that Calm is a unique botanical blend that manages the body's stress response, to help create a general feeling of calm and focus.

A SUMMIT SUCCESS

The annual IHCAN Summit proves to be a huge success for 2021.

The IHCAN Summit has established itself as a key date in the industry's calendar, and June saw it return – albeit virtually – for 2021.

With six headline speakers, eight breakout sessions and 30-plus exhibitors, the event proved to be a packed weekend of education for over 750 practitioners – making it our biggest virtual event to date.



IHCAN 2021 conferences+

The stats:

- 1,550-plus chat messages sent.
- Attendees from 20 countries from across the world.
- 11 hours 51 minutes – the average time spent in the event.
- 220 questions asked to speakers.

Leading education

The event started with IHCAN-favourite and author of *The End Of Alzheimer's*, Dr Dale Bredesen, MD, who broke new ground with his presentation, 'COVID-19 and Alzheimer's: the surprising parallels and critical differences in 2 pandemics'.

Medical mushrooms expert, Catalina Fernandez de Ana Portela, took the stage next, where she explained how medicinal mushrooms can be used as powerful immunomodulators in clinical practice.

The final session of the first day was a double-header from Dr Linda Isaacs, who has over 25 years of experience offering nutritional advice to patients diagnosed with cancer. Her two sessions focused on enzymes and understanding the role that pancreatic enzymes may play in the body's surveillance mechanisms for cancer.

Kara Fitzgerald, ND, the lead author and editor of *Case Studies in Integrative and Functional Medicine*, kicked off Sunday's sessions with her talk, 'Effects of a Diet and Lifestyle Intervention on Biological Aging – first of its kind human clinical trial'. That ground-breaking clinical trial shows that biological age – as measured by the DNAmAge epigenetic clock

– can be reduced significantly by following a diet and lifestyle program that aims to balance DNA methylation.

Founder of Personalix Health Academy, an educational initiative designed to increase knowledge of integrative medicine for practitioners, Naturopathic Physician, Dr Cheryl Burdette, ND took to the virtual stage with her talk, LPS and Autoimmunity: A Meaningful and Modifiable Marker', which examined the role of lipopolysaccharides and cell signalling in determining toll-like receptor expression, a major immune system factor, and explore the relationship between LPS and T-reg cells as they relate to autoimmunity.



Dr Richard Feinman, PhD, Professor of Cell Biology (Biochemistry) at the State University of New York (SUNY) Downstate Medical Centre, completed a packed weekend by looking closely at medical literature, what's really wrong and how we can fix it.

A SNEAK PEAK

In an exclusive to *Nutrition I-Mag*, we bring you the audio from 'low-carb GP, Dr David Unwin's headline talk from the IHCAN Summit 2019, 'Putting Type 2 into permanent remission'. Click [here](#) to listen. Dr Unwin returns to the IHCAN Conferences live and in-person on Saturday, September 18 at 155 Bishopsgate, London. Limited tickets remain, book online at www.ihcanconferences.co.uk/september-2021

Missed out?

Couldn't make it? Don't worry – you haven't missed out. Buy the downloads from ihcansummit.co.uk for all the video and presentation downloads from every session for only £50 (including VAT).

IHCAN events return live and in-person in September. For more information and to book a ticket, visit ihcanconferences.co.uk/september-2021.

And although restrictions have been lifted and live events can now take place, we will continue to organise virtual events (as well as in-person).

NaturesPlus Immune

Discover the NaturesPlus range of immune-supportive supplements.

Throughout history, healing plants and mushrooms have been used to support the immune system. Science now backs up many of the most widely used herbs, whole foods and mushrooms.

NaturesPlus is proud to introduce seven new products to help support the immune system.



Immune Boost provides crucial nutrients the immune system needs but which are often deficient in the diet. The essential nutrients in Immune Boost are needed by all areas of the immune system but are also used in combination by our bodies to form glutathione.

Uniquely formulated, delivering six key nutrients, vitamins A, D, C, zinc, selenium and NAC, to support respiratory and overall immune system health. These nutrients also promote production of the powerful immune-support antioxidant enzyme, glutathione.

Immune Support provides a powerful array of nutrients proven to provide significant nutritional support from healthy immune defences.

This unique supplement is expertly formulated with the most effective ingredients to support both the innate and adaptive immune system. These powerful ingredients include vitamins A, C, D zinc and L-cysteine, arabinogalactan, astragalus, maitake mushroom, olive leaf and fruit, and andrographis.



Immune Mushroom uniquely features seven mushrooms carefully selected for their individual immune benefits: lion's mane, reishi, maitake, shiitake, cordyceps, turkey tail and royal sun.

Only utilising extracts from the fruiting bodies of mushrooms that have completed their growth cycles, it delivers a full array of key micronutrients. Some experts contend that the full diversity and concentration of a mushroom's active constituents can only be derived from its fruiting body, which requires allowing the mushroom to develop well beyond the mycelial stage so that the classic mushroom stem and crown are formed.

Fruiting bodies are loaded with beta-glucans and all the beneficial compounds that make mushrooms synonymous with immune health. NaturesPlus Immune Mushroom contains only the fruiting bodies of each mushroom, and no mycelium or fillers.



Immune Vitamin C chewable is a delicious, high-potency formula designed to deliver the body this key nutrient in immune support. Bioflavonoids enhance the activity, and an immune superfood base provides even more cofactors.



Immune Vitamin D3 is emulsified to provide this essential nutrient in microparticles, which are much easier to absorb. Each 5000IU soft gel includes EFASorb and lipid-absorption-support mineral for maximum absorption.



Immune Zinc features ionic zinc, which is delivered to the soft tissues of the mouth, throat, and sinus areas, while systemically absorbed zinc supports healthy immune-barrier tissues and promotes healthy white blood cells.

Immune Zinc uniquely provides dual-action zinc (releasing free zinc ions, plus systemic absorption) to support the entire immune system, with copper bisglycinate in the proper ratio with zinc for maximum benefit.

NaturesPlus

Immune Microbiome includes unique, scientifically studied strains of bacteria, shown to support key areas of immune system health. Beneficial bacteria are widely known for their ability to promote intestinal health, but even more important is the ability of some strains to promote healthy immune defences.

Each shelf-stable, full-strength Immune Microbiome capsule delivers 10bn live, immune-supporting bacteria from 19 strains, including the scientifically backed DR7 strain of *Lactobacillus plantarum*, shown to promote immune health, respiratory health, and the health of the gastrointestinal tract.



PRACTITIONER SUPPORT

Order direct from NaturesPlus and receive the products at cost price, saving up to 50 per cent. You will also benefit from online training, product samples, literature, marketing supplies and customer support.

Contact NaturesPlus on 0800 9173084 or email uksales@naturesplus.com

K2 DEFICIENCY

MIND THE GAP

If you are getting enough Vitamin K2, calcium is guided to your bones and teeth (where it is needed) and away from your arteries and blood vessels (where it causes them to stiffen).

Unfortunately, modern diets leave **97%** of consumers deficient in K2.

The ONLY Clinically Validated Vitamin K2

Only the best brands select

MenaQ7[®]
Vitamin K2 as MK-7

Our 20 published clinical trials confirm:

- Safety and efficacy
- You get an all-bioactive form of K2
- Health benefits for adults and children

K2 works synergistically with other nutrients, so you will find it as a stand-alone vitamin or paired with:

- Calcium
- Vitamin D3
- Omega-3

Check the label for MenaQ7[®]
when selecting supplements!

Vegan-friendly • Non-GMO • Kosher • Halal

MenaQ7[®] is the registered trademark of NattoPharma ASA, Norway
The World Leader in K2 Research and Development



www.menaq7.com
(+47) 40 00 90 08

LIFE IN HARMONY



Nature meets science

As leaders in food-based supplementation for over 30 years, we pioneered Wholefood & Food State supplements to create our market-leading supplement range. Our products are grounded in science, proven by results and designed to improve health, safely and effectively.



To see our full range of nutritional supplements visit
www.cytoplan.co.uk

 **CYTOPLAN**
NATURE MEETS SCIENCE

BioCare education series autumn 2021



Shaping a healthier society

Connecting with you to explore health in a changing world

At BioCare, we care, and have done for over 30 years. We care about helping people around the world be the healthiest version of themselves. We do this by creating advanced, effective food supplements without the use of unnecessary additives, made in the UK. And we pride ourselves on giving free expert advice, support and education.

Through our extensive education programme and online resources, our aim is to educate, advise and support recommenders in using our clinically effective formulations to support your clients' health.

Available to retailers, practitioners and students, our unrivalled educational events include free, CPD accredited seminars all over the UK, and live webinars. Not only do they include cutting edge research, but also practical clinical applications of our product range.

Furthermore, our extensive online resource area offers a wealth of education and product support, including webinars, videos, clinical protocols and our Adaptive Health toolkit.

BIOCARE EDUCATION SERIES AUTUMN 2021

We're back, with some great education topics to connect with you and help you explore new ways of looking at health in this ever-



changing world.

In view of the recent unprecedented situation, we're starting a few events in key locations just to see how we go. If all works well, we plan to visit more locations next year. If you can't make it, or don't feel ready for a real-life event yet, we have some great online content too. Either way, we can't wait to see you!

This autumn, our focus is energy regulation and metabolism, even more relevant in a world where people are adapting to new ways of engagement, and with Long Covid very much in the headlines.

For more information about the extensive education program, visit <https://www.biocare.co.uk/news/new-education-series-2021.html>

THE ENERGY EQUATION – WEBINAR WITH ALESSANDRO FERRETTI

Date: Wednesday, September 8, 2021

Time: 7pm-9pm BST



To kick us off this autumn, we have the unique perspective of Alessandro Ferretti taking an overview of energy metabolism and stress in our free September webinar. Just as we have an environmental energy crisis, it seems we have a personal one too – low energy, blood glucose issues, oxidative and chronic stress, even mitochondrial dysfunction, are all part of our modern, messed up 'energy equation'. We cover protocols in all these areas to help you with this huge area for ourselves and clients, and we're launching some very special new products too. It comes with two hours CPD points (BANT, ANP, NNA, NTOI).

Register now

BioCare education

Connecting with you to explore health in a changing world

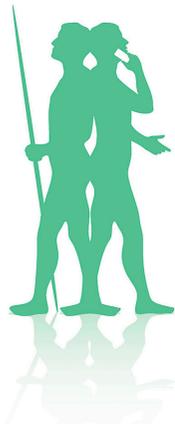


Shaping a healthier society

HUMAN NATURE – ANCIENT DRIVES IN A MODERN WORLD - WITH MARTA ANHELUSH AND CHRIS NEWBOLD

Date: Thursday 7th October - Birmingham, MAC
Saturday 6th November - London, Cavendish Conference Centre

Register now



Human Nature

How well does our in-built nervous and endocrine 'toolkit' equip us for the complexities of life?

We have evolved a sophisticated interrelated system of neurotransmitters and hormones to help us to manage our adaptation

and interaction with our environment, but does it function to connect us optimally to a rapidly changing modern world? Stress, diet, toxins, medications, even emotional, behavioural and sociological changes cause a potential disconnect that manifests as energy, nervous, sex hormone dysfunction, and beyond.

In this seminar, we are going to break apart the nature of human engagement and adaptation, presenting a holistic physiological and anthropological perspective, exemplified by some real case studies involving stress, fatigue, inflammation, thyroid dysfunction, oestrogen dominance and menopause. It has five hours CPD (BANT, ANP, NNA, NTOI).

THE THYROID EXPERT SUMMIT – WEBINAR WITH DR ABBI LULSEGGED, DR RODERICK LANE, EMMA BESWICK, JULES CHANDLER, CHRIS NEWBOLD

Date: Thursday, October 14, 2021

Time: 9:30am-1pm BST



The area of thyroid health is ever more critical, yet controversial, with differing opinions on what constitutes healthy thyroid function, the complexities of autoimmunity, and controversies about how to support the thyroid appropriately.

Join us at our free online summit, where we crystallise the complexities of thyroid dysfunction into the key

clinical points and protocols. Emma Beswick investigates relevant genetic predispositions, and we focus on clinical aspects from three perspectives – endocrinology with Dr Abbi Lulseggged, nutritional therapy with Jules Chandler, and a naturopathic approach with Dr Roderick Lane. We'll look at testing issues and lifestyle/supplement protocols. Chris Newbold summarises with an overview of the underlying key health dynamics and product recommendations. It has 3.5 CPD hours (BANT, ANP, NNA, NTOI).

Register now

New Energy Solutions

To meet life's demands

Our new re-energised range offers specific solutions for common energy concerns including blood glucose balance, adrenal, thyroid, and cellular energy support - all expertly designed to optimise energy.

Whatever the individual concern, we have the right energy solution.



BioCare Limited
Manufactured in the UK

We're here to help. Call on 0121 433 3727
or visit biocare.co.uk

ImmunoDophilus[®]

Immunodophilus is a powder in a sachet to mix in cold water or other cold beverage which makes a pleasant tasting drink from its fruit base of **Pear pulp** and **Pomegranate juice**.

An intensive 5 day course of 50 billion live cells of lactic acid bacteria, including L-Kefir, L-acidophilus, L-gasseri L-bulgaricus and the highly regarded LAB4[®] proprietary blend.

With complex plant fibres like **Larch arabinogalactans** (non-starch polysaccharides), **apple pectin** (a soluble fibre), the juice of **pomegranate** and **pear pulp** that collectively contribute to intestinal health.

Immunodophilus contains **Vitamin B6** and **Vitamin C** that contribute to the normal function of the immune system.

Immunodophilus is non Dairy and is suitable for vegetarians and vegans.

For more information about this unique Bionutri formulation, follow the link or QR code at the bottom of the page

www.bionutri.co.uk/immunodophilus



Webinars

Every Wednesday since the beginning of the first national lock-down, Bionutri have presented a weekly webinar attended by hundreds of nutrition and healthcare practitioners and students throughout the UK, Ireland and across Europe.

Our aim is to continue our long held belief of sharing the most up to date research and insights with our colleagues who work in practice.

Over the months, whilst many practitioners have been working from home we have pooled our resources to ensure we are providing accessible, impartial and well founded scientific information with our technical team working hard to produce new content every week.

Each of Bionutri's Webinars offers an hour of CPD, accessible to registrants up to a week after the event, to either watch again or catch up

Already this year we have had **Sue McGarrigle NT** presenting talks on **Nutrition Support for Addiction** and the **Role of Lignans in Supporting Hormone Health**. Providing a botanical twist to nutrition, **Edward Joy** has presented a series of talks on **The Immune System, Vitamin C** and the **Cardiovascular System**.

See the list of our March Webinars to the right here. To join us for any of these events which are free to attend, you can just follow the link or the QR Code to sign up. Simply sign up for a weekly notification on the week's up coming talk.

www.bionutri.co.uk/webinars-2021



Anitoxidants by Edward Joy
Wednesday 3rd March
11am -12pm



Migraines by Sue Mc Garrigle
Wednesday 10th March
11am -12pm



Circadian Rhythm by Edward Joy
Wednesday 17th March
11am -12pm



Benefits of Pears by Sue Mc Garrigle
Wednesday 24th March
11am -12pm



The immune effect

The Covid-19 pandemic has had a huge effect on the nation's awareness of the need to support their own immune health.



Immune health has been under the spotlight for the last year as Covid-19 has made people reflect on their own health and take steps to protect it. Certain nutrients, such as vitamin D, have hit the headlines over their potential effect on reducing the risk of Coronavirus, with research ongoing and sales of immune specific supplements rising exponentially.

And, as we move towards the colder months, a time when usual winter bugs are doing the rounds, and as we transition out of lockdown, are people running the risk of lowered immunity and, therefore, greater risk of illness?

Elouise Bauskis, Naturopath and Nutritional Therapist from Nutri Advanced, advised: "Yes, considering the events of the last year of lockdowns, many people have been self-isolating at home, they may have been shielding if vulnerable, and generally, there has been much less socialising and gathering together. As such, most of us have had much less exposure to each other and the natural mix of bugs of all types – good and bad – meaning our immune systems often haven't been exposed and 'exercised' to the same degree as they previously would have. This does not build robust immunity. The wider and more varied the mix of microbial 'soup' we come into contact with – bacteria, viruses, fungi – generally, the better our immune system may adapt and respond.

"Most of us have also spent a significant amount of time indoors, which means we haven't had the sun exposure and, therefore, vitamin D that we all need for our immune system. Unless you've been supplementing, it's highly likely you may be/are vitamin D depleted or deficient. Emotionally, many have been chronically fearful. This further reduces



VITAMIN D

our immunity. A positive attitude, rather than being fear-based, is also critical for our immunity. As such, people's immune systems may be more deficient as we've been worn down over the last year and a half."

Catherine Gorman, Nutritionist and Health Coach at Good Health Naturally, continued: "For more than a year, we have spent a significant amount of time shut inside our homes. While it has been a way of limiting exposure to Coronavirus, there have been knock-on effects of lockdown, including stress, poor sleep and lack of exercise, and even weight gain. All of these have been linked to poor immune health and could leave us more vulnerable to other illnesses and infections."

Rose Holmes, Nutritionist and Education and Training Manager at Rio Health, highlighted the stress effect.

"Stress definitely impacts immune health – and the last year of lockdowns has definitely increased stress and anxiety levels in many people. Some individuals may have increased risk of lowered immunity particularly as we head towards autumn due to the impact of lockdown stress," she explained. "It will depend on a variety of things, mostly relating

to personal response to stress, and dietary and lifestyle changes that may associate with this recent period.

"The association between illness and the period following a stressful event (for example, an emotional situation or a work project) is not a coincidence. High levels of stress impact the stress hormone, corticosteroid, which can suppress the effectiveness of the immune system by depleting numbers of lymphocytes. As lymphocytes are needed to help fight infection, stress can increase risk from cold viruses and other infectors. There is also a potential indirect immune system impact from stress as stressed individuals often use unhealthy behavioural coping strategies (such as drinking, smoking, and reaching for sugary foods/drinks) in the mistaken belief it will reduce their stress."

Martina Dello Vedova, Nutritionist at NaturesPlus, went on: "Seasonal changes do have an effect on our immune system function: changes in temperatures and daylight, along with the blues for the end of the holiday season, we often find ourselves in need of a boost not to feel tired, demotivated or sick. Moreover, last year's events were hard on our bodies

and minds, so this time around, more than ever, it would be sensible to prepare for the fall and winter. Preparing physically and mentally is equally important. Feeling down or stressed does no good to our immune health, making it no longer a priority."

And how does this lowered immunity translate in terms of risk of illness?

She added: "When immunity is not working optimally, we are much more susceptible to infections (from respiratory and ear infections to digestive or skin infections). When our barriers that normally should block and keep out a pathogenic organism are not working, we can get ill much easier. Also, once an organism has entered our system, we are less able to react to it appropriately and its effects can be more severe, last longer and leave more damage.

"To respond appropriately to an immune challenge is also very costly in terms of energy and if we do not have the resources to do so, the body will try to save energy where it's less needed, so processes like digestion, reproduction and repair will be impacted."

LOW IMMUNITY EFFECTS

Being such a critical system, our immune systems have a direct impact on many aspects of our health, from our risk of catching a cold, our ability to heal, even our gut health. It is, therefore, imperative as we move into the colder months to nourish this system, especially after the last year of lockdowns and changing diets and lifestyles.

Dr Marilyn Glenville PhD advised: "Common signs will include recurrent coughs and colds, thrush, cystitis, mouth ulcers and just generally feeling unwell and tired all the time. Poor wound healing and cracks at the side of the mouth are also signs of a compromised immune system. Digestive symptoms may also be indicative of poor immunity as the gut is a first line of defence to bacteria and viruses. This lowered immunity can translate to more susceptibility to more serious issues, such as 'flu and other viruses."

And Bauskis advised: "Common signs that someone has low immunity include getting sick very easily and often. These are the people who catch everything going round. Another sign may be swollen lymph glands, indicating that the body is trying to fight something. You may have cold sores appearing or suffer with shingles. These are all signs of lowered immunity.

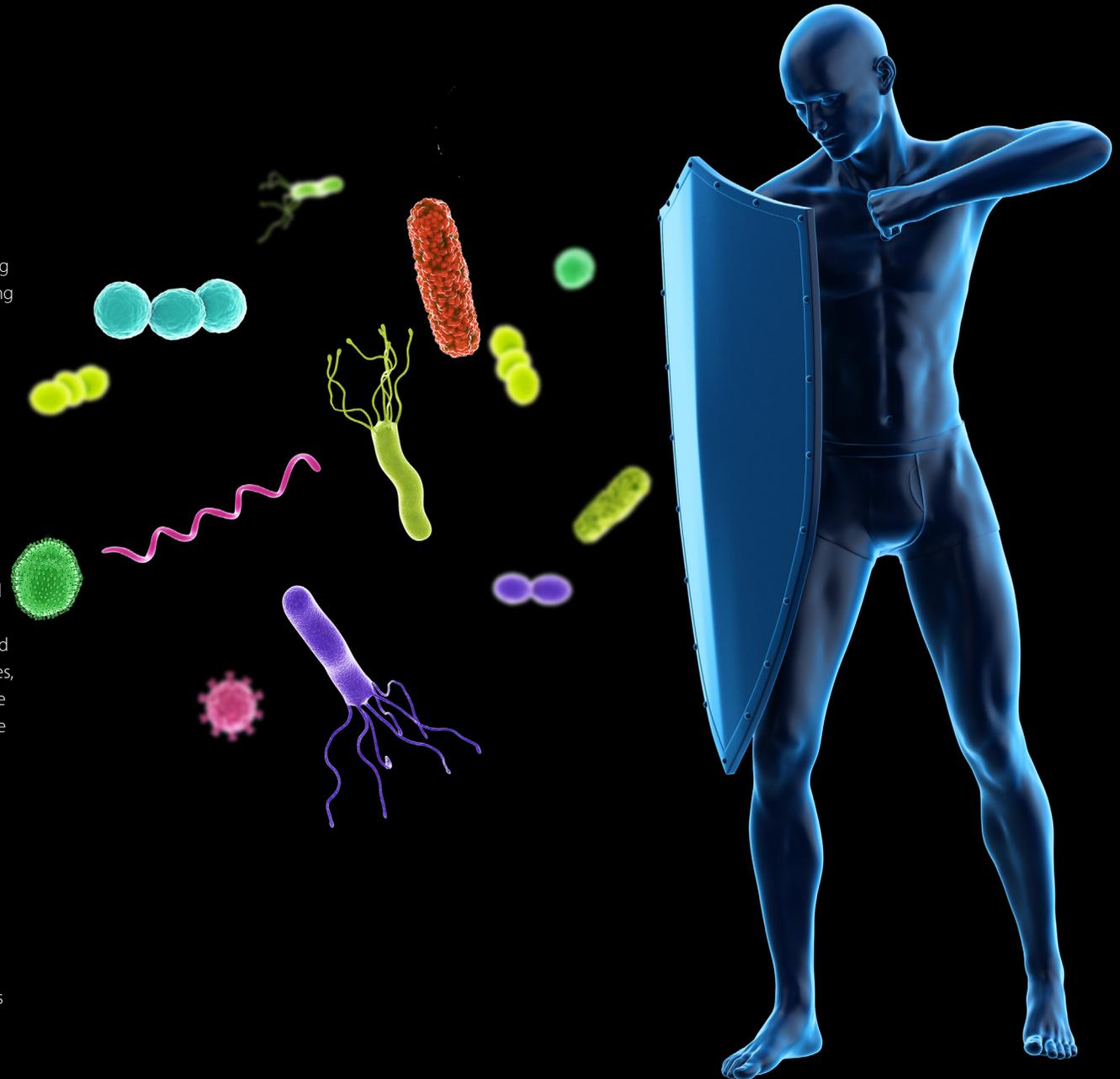
"The immune system needs to be in balance in order to function optimally. If someone has lowered immunity, making them more susceptible to infection, they very often may have an increased chance or incidence of other health issues, such as allergies, hay fever, sinusitis or asthma. Autoimmunity is on the rise throughout western society, which is where the body turns on itself and starts to attack itself. There are over 100 autoimmune conditions and rising!"

She added: "Those with lowered immunity face an increased risk of illness, especially infection. The most prominent issue currently would be that they are more likely to contract Covid-19, and if so, suffer more severely symptom-wise, and may take them longer to recover."

Gorman added: "Low immunity can have a variety of knock-on effects. Weakened defences mean an increased susceptibility to colds, infections, and respiratory issues, such as coughs. Gut and digestive issues, such as diarrhoea, gas or constipation, are common too. Wounds may be slow to heal if the immune system is sluggish, as the skin can't regenerate, so cuts and grazes may linger and have a hard time healing."

Holmes went on: "Lowered immunity generally associates with increased risk from microbial infection. Those with latent herpes infections may have eruptions of cold sores, and lowered immunity associates with increased incidence of ear infections, sinusitis and other viral and bacterial infections.

"When the immune system is challenged, fungal overgrowth may occur, complicating things further. Reduced immunity makes the body more susceptible to pneumonia, and associates with the development of some types of cancers including lymphoma, non-melanoma skin cancer, Kaposi's sarcoma and cancers caused by bacteria or virus (for example, HIV, HPV, Epstein-Barr, hepatitis B, hepatitis C, and T-cell leukaemia virus)."





THE DIET

Examining the role of dietary choices and its impact on our immune system is critical.

Dr Glenville commented: "Poor nutrition is a major factor in low immunity. This can come from poor dietary intake, particularly low in fresh fruit and vegetables and too much alcohol and refined sugar, which depletes key immune supporting nutrients like zinc and vitamin C.

"Ensure the person is eating a wide variety of brightly coloured fruit and vegetables. The brighter the pigment, the more immune boosting antioxidants. Incorporate plenty of fresh garlic, which has natural antibacterial and antifungal properties. Nuts and seeds and whole grains (brown rice, not white) are rich in zinc, which helps increase the immune supporting effects.

"Remember that the digestive tract is the largest immune barrier in the body and probiotics are important. Ginger and garlic are also excellent winter immune boosters, which have natural antibacterial properties. Sugar needs to be avoided if possible or at least drastically reduced as refined sugar compromises immunity.

"Drinking enough fluids water and limiting caffeine and alcohol, which all deplete zinc and magnesium, are important. Plenty of oats, barley and

organic mushrooms are helpful as they contain beta-glucans, which have a positive effect on the immune system."

Julie Lamble, Consumer Trainer-Adviser at MINAMI, went on: "Maintaining a healthy immune system and providing our body with the ability to fight off the season's cold, cough and 'flu infections depends firstly upon us eating a healthy, well-balanced diet that's low in saturated fats, processed foods, sugar and salt, but includes the recommended minimum five-a-day fruit and vegetables. There are, however, lifestyle factors that either prevent us from eating a healthy, balanced and nutritious diet, or affect our body's ability to absorb the vital nutrients from our food, which, in turn, impairs our immune system. These include consuming too much alcohol, smoking, lack of regular, moderate exercise, not maintaining the correct weight-to-height ratio, not getting enough sound sleep, and overuse of antibiotics."

And Holmes added: "An important nutritional factor with respect to immune health is the level of antioxidants provided via diet or supplementation. Vegetables and fruit provide nutrients like the antioxidant vitamins C, E, and beta-carotene, which can boost immune function.

"Vegetables and fruit and other plant-based foods are additionally rich in polyphenol antioxidants that counter oxidative stress. Many superfoods contain high levels of polyphenols and are often rich sources of immune-boosting antioxidants. Herbs and botanical supplements can also provide these nutrients, sometimes in combination with antimicrobial properties."

Della Vedova agreed, adding: "Low antioxidant and fibre consumption lowers very quickly nutrients that are required for the immune system to function properly. High sugar diets and processed diets rich in ready-meals and limited use of fresh produce and foods are harmful on the long run and change very quickly the state of our health. Food is vital to determine our immune strength, not only to provide antioxidants and nutrients but also because it has a great influence on our microbiome. If we can have and maintain a healthy microbiome, we have greater chances to perform optimum immune responses."

Gorman also advised: "It is fair to say most who eat a typical Western diet, which is largely composed of high carbohydrate, high-calorie, processed, and nutrient-poor foods, will be lacking in some essential nutrients. Intensive farming and modern food processing have also led to a reduction in micronutrient content of many common foods. On top of

causing weight gain with all its associated problems, this type of diet has led to high rates of nutrient deficiencies. Of particular concern are the immune supporting vitamins and minerals, such as iron, selenium, zinc, copper, vitamins C, A, E, B6 and folic acid. Deficiencies of any of these can impair the production and activity of immune cells and antibodies.

“Eating too many processed foods, sugary snacks and starchy carbohydrates can also lead to chronic inflammation, which can further weaken defences against pathogens. High blood sugar can cause oxidative damage, especially if there is an overproduction of reactive oxygen species and the body does not have enough antioxidants to detoxify cells. This will also increase the chances of infection. Too little good quality protein in the diet has also been associated with significant impairments in immunity.

“Add garlic and turmeric into cooking, both have been used since ancient times for their antibacterial and antiviral properties. Fibre, legumes, fruit, vegetables, and fermented foods such as kefir, kombucha and sauerkraut will help support the microbiome.”

Bauskis turned the attention on the impact of sugar.

“Sugar definitely depresses your immune system. Sugar and vitamin C are very similar and will compete for absorption, and unfortunately, sugar wins! Sugar doesn't support or nourish you nutritionally, but actually feeds bad bacteria in your gut, and increases inflammation in your body,” she explained.

As part of nutritional considerations, it's important to reiterate the need to maintain a healthy waistline.

“Obesity has many detrimental effects, including impairing immune health, increasing the risk for bacterial and viral infections. While the exact mechanisms are not clear, excess weight is associated with low-grade chronic inflammation. Fat tissue produces adipocytokines, which can promote inflammatory processes, impair the function of T-cells, decrease cytokine production, cause natural killer cell dysfunction and reduce macrophage function. Several studies have shown an increase in immune responsiveness after weight loss,” Gorman explained.



IMMUNE NUTRIENTS

There is much research around key nutrients for the immune system and this is something continually expanding as we learn more about Covid-19 and its link to certain nutrients.

“A robust blood vitamin D level is essential for strengthening immunity. My aim is to get clients to a level defined by blood test, of ideally 100nmol/L, even higher up to 150nmol/L if they have a chronic health issue. If deficient or inadequate, dose at a therapeutic level and test every three months and reassess the dosage once you reach a good level, to a maintenance dose,” Bauskis advised.

“The foundational nutrients of the immune system include vitamin C, vitamin A and E, of course, vitamin D, as well as zinc and selenium. Ensure adequate levels of these long-term, but initially, give more therapeutic levels to strengthen the immune system. Beta glucans modulate the immune system, ‘exercising’ and ‘teaching’ it how to respond/react. Beta glucans are super powerful at strengthening and rebalancing the immune system, and may be taken for many months, if need be, and may be especially indicated during the colder months when people may be more vulnerable.”

And Lamble advised: “Firstly, vitamin B6, B12, C, D, folate, zinc, copper, iron and selenium all have proven immune health claims and if a healthy balanced diet is not followed, then supplementation of these nutrients are recommended. Also,

omega 3 fatty acids are recommended, which are found primarily in oily fish (i.e., mackerel, salmon and anchovies) as studies suggest that these substances can help white blood cell activation and production, which are key to our immune health. Aim to consume at least two portions of fish a week (one of which should be oily) or supplement with at least 250mg of the omega 3s EPA and DHA per day for good health. Omega 3s have also proven health benefits for our brain, heart and eye health and studies suggest that they can also be good for the skin and our mood too!”

Gorman commented: “The two nutrients everyone has been talking about during the Covid-19 pandemic are vitamins D and C. Vitamin D is known as the sunshine vitamin because our primary source is from UVB sunrays onto our skin. Food sources include oily fish, egg yolks and mushrooms. More and more research shows it plays a crucial role in immunity. But there is concern most people are not getting enough in their diet, or from the sun. Supplementing may be the best option.

“A deficiency in vitamin C can result in impaired immunity and a higher susceptibility to infections. It cannot be stored in the body, so we need to eat it every day. Good sources include oranges, strawberries, blackcurrants, peppers and broccoli. More vitamins and minerals are important for the immune system,

including vitamins A, B6, iron, zinc, selenium, copper and folic acid. These all help the immune system in several ways: working as an antioxidant to protect healthy cells, supporting growth and activity of immune cells, and producing antibodies.”

She went on: “Other things to consider include EpiCor, a dietary supplement derived from the yeast, *Saccharomyces cerevisiae*. It is a potent and powerful antioxidant. It has been shown to modulate the immune system and increase antioxidant levels in the blood. One study has demonstrated its ability to reduce cold and ‘flu-like symptoms. Larch arabinogalactan is an excellent source of dietary fibre which can help increase levels of beneficial gut bacteria, such as *Bifidobacteria* and *Lactobacillus*. Studies show it to can also help to stimulate the abilities of natural killer cells and enhance other aspects of the immune system.”

Holmes went on: “Vitamin C contributes to immune defence by supporting various cellular functions of both the innate and adaptive immune systems in a number of ways, including by supporting epithelial barrier function against pathogens, promoting oxidant scavenging activity, enhancing phagocytosis and microbial killing, and decreasing necrosis and tissue damage by enhancing clearance of spent neutrophils from infection sites; supplementation with vitamin C appears to both prevent and treat respiratory and systemic infections.¹ High levels of vitamin C are best tolerated when delivered via liposomes; dry liposomal powders are an extremely effective delivery method for vitamin C as it avoids the issue of bowel tolerance by delivering directly to the cells.

“Polyphenols (such as those found in berries, many herbs and matcha tea) are well-known to have immunomodulatory activity. There are multiple types of polyphenol receptor expressed by different immune cells; these recognise and permit cellular uptake of polyphenols, subsequently activating signalling pathways that initiate immune response. Polyphenol involvement in regulation of immune function may be via promoting intestinal health and regulating mucosal immunity and inflammation.² High levels of polyphenols are found in fruits like açai berries, curcumin, EGCG-rich matcha green tea and many other botanical products make a useful addition to a protocol for boosting immune health.

“It is also useful to have on hand useful anti-virals such as Chinese skullcap, houttuynia and cecropia (Takuna). Pau d’arco (available as capsules or tea) also has anti-viral properties, as well as having anti-fungal and antibacterial activity. And cat’s claw is a useful broad-spectrum antimicrobial that makes a fantastic warming and immune-boosting tea when combined with cinnamon, ginger, cardamom and orange.”

Meanwhile, Dr Glenville commented: “Combinations of nutrients and botanicals can be helpful for immune support, including black elderberry, olive leaf, mushrooms such as reishi, shiitake and maitake, probiotics and beta 1, 3 glucans, vitamin D3, zinc and vitamin C. Both vitamin C and zinc have been shown to reduce the duration of a cold so they would be helpful nutrients to include if someone succumbs to a winter cold. Both garlic and ginger can be added to warm water and taken as a soothing drink.”

LIFESTYLE CHOICES

Considering lifestyle recommendations ranges from managing stress, exercising and sleeping well, all of which play a role in immunity.

“Stress, poor sleep, smoking, alcohol consumption, sedentary lifestyle, long indoors days away from fresh air and natural daylight are all factors that matter a great deal when it comes to immune function,” Della Vedova commented.

“Immune health is a very complex picture, and it varies very much among individuals. Going back to basics in this instance can help massively. Pretend you are again a baby and think about what a baby needs to be happy: sleep enough, eat well, regular bowel movements, and feel safe and loved. Making sure sleep, food, digestion and stress levels are as good as they can possibly be is already a huge step towards strengthening our immunity.”

Lamble added: “Stress, the tension and anxiety created by our modern lifestyles, also impacts on the health of our immune system. When we are over-stressed, our body becomes lethargic and run-down, which can make us more prone to infection. Also, when we are stressed or time-constrained, we may eat on the run or overeat, which may hinder healthy food choices. This means we may not be getting the nutrients we need for a healthy immune system or good health.”

Bauskis continued: “Other lifestyle choices or factors that

impact our immune system include having adequate sleep, rest and relaxation, as well as reducing stress as much as possible. We also need a rich social interaction with family and friends. Love, laughter, touching, hugging and dancing are all nourishing life essentials for a robust immune system.

“The higher the toxic load your body has, the more it’ll negatively impact your health and immunity. Toxins come from multiple potential sources – chemicals from pharmaceuticals, drugs, cigarettes, alcohol, from cleaning products, work environment, personal care products, herbicides and pesticides.”

Gorman went on: “Studies suggest regular exercise reduces susceptibility to viral infections like influenza and the common cold. In particular, neutrophils are particularly receptive to exercise, they provide the body’s first line of defence against infections. As we age, they can become less effective, but exercise appears to counter this. One study found neutrophils of older adults who routinely walked at least 10,000 steps a day were as effective as those of young adults.

“Exercise also boosts the number of immune T cells, which play a major role in detecting and destroying viruses. But it is important to get the balance right, because too much intense exercise without adequate rest has actually been shown to increase stress on the body, causing a person to be more at risk to infection.”



ImmuneC & Vitamin D3 High Strength 3000iu

ImmuneC formulated by pioneer nutritionist Patrick Holford provides support for the immune system. It contains potent levels of Vitamin C - 1800mg of Vitamin C per day (2 tablets) - plus other key nutrients black elderberry extract and zinc which have anti-oxidant benefits. It's perfect for taking on the first signs of a cold or sore throat and a cost-effective way to support the immune system. Vitamin D3 also contributes to the normal function of the immune system. One of the strongest formulations of its kind, this 'pure filled' capsule is 'high strength'. Both are registered by the Vegan Society. www.holfordirect.com



Sambucus Immune

A liquid herbal complex calling on the power of Zinc and Vitamin C-rich Black Elderberry infused with Echinacea and Astragalus to create a stellar wellness formula. A family formula, with the Juice concentrate of 12,000mg Black Elderberries and 200g Vitamin C to contribute to the normal functioning of your immune system. Holistically Balanced, Alcohol & Gluten Free. No Artificial Sugars or Sweeteners. Formulated by a team of experts at Nature's Answer, with guaranteed potency, purity & authenticity. For more information or to place an order, visit www.kinetic4health.co.uk or email sales@kinetic4health.co.uk



Organic Mushroom Ommune Defence

Ommune Defence is a blend of four well-researched, certified organic mushroom species with Vitamin C, to support normal immune function. Each serving provides a blend of 2,000mg broad spectrum Reishi, Shiitake, Agaricus blazei and Maitake, professionally formulated by an expert team of mycologists. Grown in California, Om is a leading producer of pure, fresh, 100% organic mushroom formulas to support optimal well-being. OM combines the perfect balance of ancient wisdom with modern methodology to grow these miraculous mushrooms in their state-of-the-art clean room facility. Kosher, non-GMO Project Verified and Vegan. For more information or to place an order, visit www.kinetic4health.co.uk or email sales@kinetic4health.co.uk



MINAMI® MorEPA Platinum Elite + 1000 IU Vitamin D3

One of the most impressive products in the MINAMI range, MorEPA Platinum Elite is specially formulated for active individuals. It has the highest levels of Omega-3 per softgel – up to 90-95% – and because it's in triglyceride form, it's absorbed more quickly and easily by the body. Vitamin D3, often known as the sunshine nutrient, helps support the immune system as well as muscle function after intense exercise. Certified by Informed Sport. The Informed Sport programme provides assurance that products have been tested for a wide range of substances prohibited in sport, making Platinum Elite + Vitamin D a safer choice of omega-3 for athletes. www.minamihealth.co.uk www.naturaldispensary.co.uk



Nutritional Support For Your Immune System

IMMUNE NUTRITION SUPPORT Formulated especially for healthy immune function. Contains

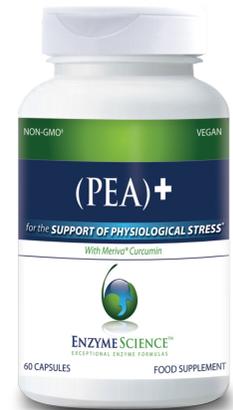
- Vitamins C, D3 and zinc which contribute to the normal function of your immune function
- Black elderberry and olive leaf for your immune system
- Mushrooms - reishi, maitake and shitake for immune support
- Beta glucans for immune support
- A good combination of beneficial bacteria including lactobacillus acidophilus and bifidobacteria

Free From Sugar, Gluten, Starch, Wheat, Dairy, Soya, GMOs, Fillers, Binders, Anti-caking Agents, Artificial Sweeteners, Flavours, Colours, Preservatives. Nutrients in their most bioavailable form to aid absorption. Vegan and Vegetarian Society registered, Kosher and Halal approved. www.naturalhealthpractice.com



(PEA)+™

(PEA)+™ combines a unique blend of Palmitoylethanolamide (PEA) from safflower seed, with the well-researched and highly bioavailable curcumin ingredient - Meriva® Phytosome. The combination of these two ingredients provides a natural support for the entire body with a focus on the nervous, immune and muscular systems. PEA is an extensively researched natural ingredient for important neuroprotective actions. (PEA)+ works with the body's natural processes to help alleviate physiological stress and soreness without the side effects associated with the overuse of pain medications. Register at <https://theanp.co.uk/events/webinars-public/> to hear Dr Mark Tager present Pain, Inflammation and PEA Deficiency. Oct 14th 6.30pm



The Number 1 choice for UK Practitioners

Scientifically balanced

We use rigorous scientific and clinical research to ensure our supplements are developed with the perfect blend of ingredients at the optimum level of efficacy.

Finest quality ingredients

We select the highest quality, purest and most efficacious ingredients to go into all our products.

365 day satisfaction guarantee

All of our products are backed with a full year guarantee. If you or your clients are not completely satisfied with the quality of a Nutri Advanced product, simply return it to us within 365 days of purchase for a full refund.

Optimum absorption

For optimum absorption, we use preferred forms of vitamins and minerals to engineer products at the ideal strength and in the right concentrations.

Advancing nutritional education

We share our wealth of knowledge from the forefront of nutritional research through the Nutri Advanced online resource hub and host a variety of seminars and lectures with leaders in the industry.

Active body-ready formula

Wherever possible, our products contain ingredients in their best form for your body to use, whether it's the most bioavailable or most active.

Register with
Nutri Advanced
and receive
50% OFF
your first order*
*TSCs apply



Reasons why students and practitioners choose Nutri Advanced:

- Contact with our team of fully qualified nutritionists to assist with product guidance, nutrition advice and client queries
- CPD accredited webinars to help you learn how to support specific conditions from the comfort of your home or office
- Access to restricted professional educational literature including technical papers, reviews and protocols
- CPD accredited seminars with world class speakers such as Dr. Jeffrey Bland and archived material featuring Dr. Joseph Pizzorno, Jo Gamble and Dr. Kristi Hughes
- Exclusive trade prices

Register online at:
nutriadvanced.co.uk or freephone 0800 212 742

Digestive and Immune Support

Maintain your digestive and immune* systems.

The Bio-Kult digestive and immune range includes the original Bio-Kult Advanced Multi-Strain Formulation containing 14 strains of live bacteria, Bio-Kult Boosted with the same great 14 strains at 4 times the power and vitamin B₁₂, and Bio-Kult S. Boulardii which contains live yeast culture, *Saccharomyces boulardii*, and vitamin D₃.



Ask your wholesaler for more information, or contact Bio-Kult.

Bio-Kult
What's your gut feeling?

bio-kult.com

[f/biokultprobiotics](https://www.facebook.com/biokultprobiotics) [@bio_kult](https://twitter.com/bio_kult) [@biokult_uk](https://www.instagram.com/biokult_uk)

*Bio-Kult Boosted contains vitamin B₁₂ and Bio-Kult S. Boulardii contain vitamin D₃, both of which contribute to the normal function of the immune system.

A fatigue protocol

A common complaint among the general population, there can be many reasons a person is suffering with fatigue. And getting the nutritional foundations right is key, as the experts advise.



Fatigue is a complaint that can be linked with so many other issues. For some, it can come and go depending on lifestyle at that time, for others, it can be prolonged and affects day to day quality of life.

There are different avenues to take with clients complaining of issues around fatigue, and certainly testing is an area to consider to ascertain what the root cause may be. But, as practitioners, you will know that nutrition is the foundation and so here, experts discuss why fatigue is so commonplace and the potential approaches you could take.

Dr Marilyn Glenville PhD pointed out just how prevalent it is.

“It is such a common complaint that fatigue has now been given its own acronym, TATT, tired all the time. I think it is so common because it can be caused by a number of different factors that are a problem in our modern world, such as workplace problems, stress, medical conditions, unhealthy lifestyle, mental health problems and relationship issues,” she advised.

“Fatigue becomes a concern when it is affecting someone’s quality of life, where they feel unable to function as they should do because the tiredness is overwhelming.”

Lindsay Powers, Nutritionist and Health Coach Manager at Good Health Naturally, went on: “Tiredness is one of the most common reasons people visit their GPs. At any given time, one in five people feels unusually tired, and one in 10 have prolonged fatigue, according to the Royal College of Psychiatrists. Women tend to feel tired more than men. There are so many reasons we may suffer fatigue, including medical conditions, but our lifestyle is often a significant factor. Poor eating habits, excess caffeine or alcohol intake, dehydration, lack of sleep or prolonged stress are common factors contributing to fatigue. People often seek the help of a practitioner when they experience burn-out or cannot function daily without considerable effort.”

WHY ARE WE FATIGUED?

There are many factors to consider here, but what is clear is modern living, one where we are often switched on, whether it's to our TVs, our phones, work or social media, means we perhaps aren't getting the time out we need.

Nutritional Therapist, Hannah Braye, Head of Technical Advice at ADM Protexin, manufacturers of the Bio-Kult and Lepicol brands, explained: "The term 'fatigue' is often used to describe extreme tiredness or exhaustion, resulting from mental or physical exertion or illness. Fatigue can be classified as secondary, physiologic, or chronic. Secondary fatigue is caused by an underlying medical condition or medication and generally lasts less than six months.¹ Physiologic fatigue is caused by an imbalance in the routines of exercise, sleep, diet, or other activity, is not caused by an underlying medical condition and is relieved with rest.¹ Chronic fatigue syndrome (CFS) is persistent or recurrent debilitating fatigue that is not the result of ongoing exertion, or alleviated by rest, or explained by other conditions, and that results in a substantial reduction in activity.²

"Fatigue is a common symptom of many physical, neurological, and psychiatric disorders, many of which are on the rise in the Western world. For example, fatigue is one of the identified symptoms of major depressive disorder (MDD) listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria, where it is defined as physical fatigue or loss of energy. More than 300m people are diagnosed with depression worldwide,

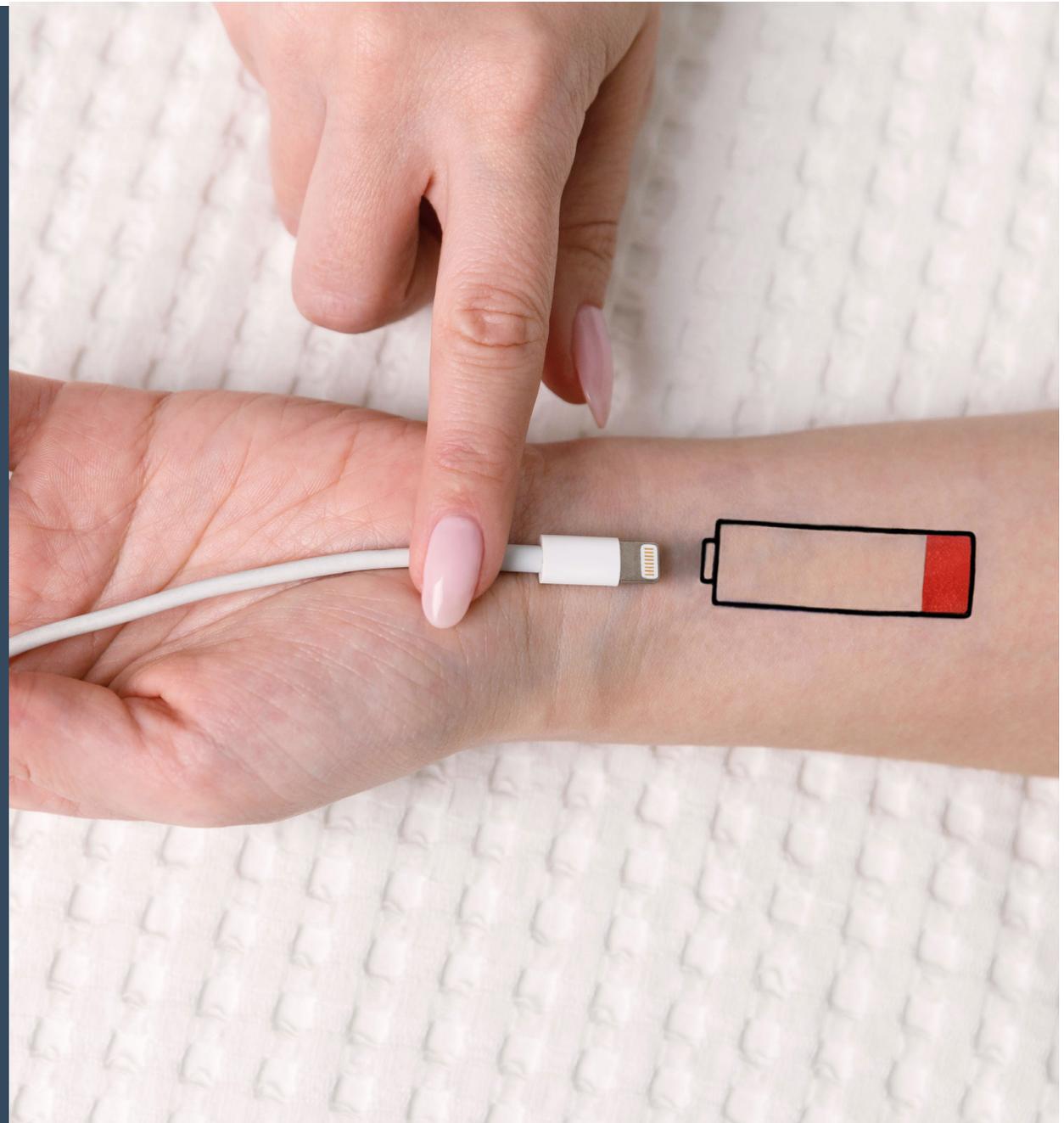
equating to 4.4 per cent of the global population.³ Many people are also not getting the recommended number of hours of sleep a night, eating a well-balanced diet and partaking in regular moderate exercise. Therefore, it's perhaps unsurprising that fatigue is such a common complaint.

"Possible complications of fatigue include negative impact on work, family life, social relationships, and quality of life, increased risk of anxiety and depression and excess mortality risk?"

But how can you as practitioners define if a client is truly fatigued?

Braye went on: "Fatigue can be tricky to define, as it is a subjective experience. However, whilst everyone feels tired, sleepy or over-worked from time to time, it's important to distinguish instances of temporary fatigue, which usually have an identifiable cause and a likely remedy, from ongoing symptoms of unrelenting exhaustion, which are not relieved by rest. For example, sleepiness is the impairment of the normal arousal mechanism and is characterised by a tendency to fall asleep.¹ Persons who are sleepy are temporarily aroused by activity, whereas fatigue is intensified by activity, at least in the short-term.⁴

"Patients with sleepiness feel better after a nap, but patients with fatigue often report a lack of energy, mental exhaustion, poor muscle endurance, delayed recovery after physical exertion, and nonrestorative sleep.¹ This more constant state of weariness usually develops over time and can significantly reduce motivation and concentration and impact individual's emotional and psychological wellbeing."





IDENTIFY THE CAUSES

Looking in greater detail at the most common reasons someone can experience fatigue, Braye explained: “Common causes of secondary fatigue include lymphadenopathy (indicating tumour spread or recurrence), cardiac murmurs (endocarditis), goitre (thyroid hormone imbalance), oedema (heart failure, liver disease, or malnutrition), poor muscle tone (advancing neurologic condition), neurologic abnormalities (stroke or brain metastases),¹ and psychiatric conditions (MDD and generalised anxiety disorder).⁵ It can also be linked to conditions such as anaemia, diabetes, sleep apnoea and coeliac disease, and underlying viral infections such as glandular fever and Lyme’s disease⁵”

Rose Holmes, Nutritionist and Education and Training Manager at Rio Health, advised: “There are a number of factors that contribute, including both dietary and lifestyle-related factors. Since fatigue can be a ‘red flag’ symptom, it is important to consider possible cause to determine best action, including whether referral to a GP is necessary.

“Referred to sometimes as the ‘exhaustion epidemic’ or ‘burnout’, physical, mental and spiritual fatigue are increasingly common across age groups, and, although periods of lethargy are normal and an inevitable part of human life, modern stressors pose different risks. Modern life stressors include diets high in processed foods/low in nutrients, ‘light at night’, that means we can be active literally 24 hours round the clock (often detrimentally affecting sleep duration and quality), and the 24/7 culture of connectivity (that encourages us to spend long periods of time on social media and similar sedentary activities instead of having inadequate stress relief through regular (but not overly strenuous) exercise.”

And also important to mention is the latest factor – long Covid.

Holmes explained: “Viral infections, including the common cold, can cause tiredness, aches/pains and malaise as the body uses its resources to fight the infection, and post-viral fatigue can also be problematic – as the world is currently witnessing with

long Covid. Conditions like chronic fatigue syndrome and fibromyalgia very much associate with fatigue/low energy. Fatigue is also a common side effect of medical treatments such as chemotherapy and bone marrow transplants. And often associates with weight problems and eating disorders at both ends of the spectrum: obesity, anorexia, bulimia and being underweight.

“Some medications, such as statins, anti-depressants, and beta-blockers, can deplete CoQ10, and levels should be supported in those using such medications. Many medications deplete magnesium.”

Elouise Bauskis Naturopath and Nutritional Therapist from Nutri Advanced, continued: “It is very important to explore reasons why fatigue is occurring, and to rule certain things out. The most obvious is working out whether or not the person is anaemic. I would always start here, because if the person is anaemic, then there isn’t going to be enough oxygen being transported throughout the body to all of the cells, resulting in fatigue. If this is not addressed, nothing else that you do will solve the problem! This is super important especially if the person is vegetarian or vegan, or if they have heavy periods.

“Fatigue may be a symptom of thyroid problems, such as hypothyroid. It is extremely important to know how the thyroid is functioning, as it is crucial to the body’s metabolism and energy levels. Stress, over working, inadequate sleep, medications, nutritional deficiency and a toxic lifestyle may all cause fatigue.”

She also highlighted some long-term issues that fatigue can be linked to.

“Mitochondria are the little powerhouses of energy production within our cells. Mitochondrial dysfunction may result in our cellular energy being critically affected. Worst case scenarios include chronic fatigue syndrome, M.E. (myalgic encephalomyelitis) and fibromyalgia,” Bauskis explained.

“These are serious, complex and multifactorial diseases/dysfunction, that need a proper diagnosis and analysis. It is highly recommended that they seek out and work with an experienced practitioner.”

THE ROLE OF NUTRITION

Nutrition must be considered in terms of a potential cause of low fatigue, and also in terms of managing the issue in the long-term.

“A nutritionally deficient diet will over time lead to more and more fatigue, as we lack the nutrients required to actually produce energy within the cells of the body. If you’re vegetarian/vegan, bleed heavily during your periods, and/or take medications that cause nutrient depletions, these may result in fatigue caused by nutrient deficiency,” Bauskis advised.

“A balanced, nutrient and phytochemical-rich diet, filled with a rainbow of vegetables and fruit, plus nourishing healthy oils and good quality protein will support and promote optimal health and energy production. A ‘beige’ diet, lacking colour or variety, full of processed foods, sugar and unhealthy oils, will not promote health, and will no doubt result in fatigue and a plethora of potential other health problems.”

And Braye went on: “Energy to power the body’s metabolic processes is derived from the food that we eat. Inadequate nutrition is thought to be one of the mechanisms underlying fatigue.

“Modifications in food intake and body composition changes seem to influence the perception of fatigue, probably through the mechanisms of inflammation and/or mitochondrial dysfunction.⁶ Undernutrition may result in weight loss and nutritional deficiencies leading to fatigue by means of “lack of energy⁷⁻⁹.” When protein and energy intakes fail to meet an individual’s need, body stores are catabolised to provide energy, leading to the depletion of body fat and muscle^{10,11} with consequent symptoms such as fatigue.^{7,9} There also appears to be a bi-directional association between undernutrition and fatigue. Whilst undernourished people are more prone to experience fatigue symptoms, fatigued people may be at risk of undernutrition due to lack of energy to prepare decent meals.⁸

“Excessive food consumption leading to obesity may also be a contributing factor to fatigue symptoms. It has been reported that excessive dietary intake, in particular, high fat consumption, may alter sleep parameters

(i.e. daytime sleepiness, poor sleep quality and sleep apnoea), resulting in fatigue.¹²⁻¹⁵ High-carbohydrate meals (especially those high in simple sugars) may also alter sleep indexes, resulting in fatigue symptoms.^{12,15,16} In fact, in response to ingestion of high-fat and high-sugar foods, circulating levels of glucose, insulin, leptin, cholecystokinin (CCK), peptide YY, and enterostatin are increased, all of which have somnogenic (sleep inducing) effects¹²”

Potential nutrient deficiencies also need to be considered.

“We now understand the fundamental role of a large number of vitamins and minerals in the biochemical processes of cellular energy generation, as many micronutrients are required as coenzymes and cofactors for energy production via glycolysis, the kreb’s cycle, electron transport chain and beta-oxidation. Therefore, nutrient deficiencies caused by a poor diet (and increased nutrient requirements in some disease states) can significantly impact energy production processes, resulting in symptoms of fatigue,” Braye explained.

“Interestingly, nutritional deficiencies (vitamin C, B vitamins, sodium, magnesium, zinc, folic acid, L-carnitine, L-tryptophan, essential fatty acids, coenzyme Q10) have been reported in CFS subjects^{17,18}”

Holmes continued: “Nutrient deficiencies can be involved (low intake, increased need, or poor absorption). Insufficient sleep, mounting stress, having young children, doing shift work and having jet lag contribute to fatigue. Anaemia (due to iron, folate or vitamin B12 deficiency), mitochondrial issues, chronic conditions such as Lyme disease and myalgic encephalomyelitis also manifest as fatigue. Additionally, some people describe libido issues as fatigue/low energy, with which it can associate. Each of these reasons requires a different protocol approach; someone with poor sleep habits as the most likely contributory factor might benefit from chamomile (babuna) or valerian (amantilla), whereas someone who refers to libido issues as their low energy/fatigue, might benefit from maca, muira puama, catuaba, suma and/or damiana.”



ANTI-FATIGUE DIET

The advice to offer clients around the correct type of diet is varied, and may be individual, depending on the issues identified.

Braye suggested: "It is important to bear in mind that fatigue may also be the manifestation of an underlying condition. Therefore, each intervention requires a multidimensional approach. Nutritional interventions should be individually adjusted taking into account various factors such as nutritional status, physical activity level, disease status etc. Where fatigue is secondary to another health condition, working with clients to address relevant underlying physiological imbalances through diet may result in knock-on beneficial effects on energy levels.

"Generally speaking, a key way to support consistent energy levels throughout the day is via healthy blood glucose regulation. Therefore, avoiding high glycaemic load refined/simple carbohydrates, switching to wholegrains, eating protein with each meal, incorporating healthy fats and eating smaller, more regular meals to begin with until energy levels have stabilised, may be appropriate. Focusing on increasing micronutrient density of meals is also recommended in order to provide all necessary co-factors for ATP production. In particular, wholefoods high in B vitamins, vitamin C, calcium, magnesium, phosphorus, copper, chromium, iron, manganese and zinc are particularly important¹⁹."

Dr Glenville went on: "At its most basic level, the food the person eats and drinks is the fuel that the body and brain needs to function at its peak. Skimp on the quality of that fuel and they will pay the price in terms of fatigue. Skipping breakfast, not drinking enough water, over-eating, dieting, eating on the run, consumption of caffeine and alcohol, and eating a lot of refined, processed foods are the major causes of low energy levels.

"Cut down or eliminate caffeine, sugar and refined carbohydrates as these can give an instant hit but can leave someone feeling tired and depleted in the long run. Tiredness might be caused by an imbalance in blood glucose levels. Making sure fluid intake is sufficient is important as being dehydrated can contribute to fatigue. Eating an unprocessed diet with a good variety of foods can help keep energy levels sustained."

Powers added: "Poor eating habits mean our bodies may not be getting all the nourishing nutrients they need to function optimally and keep our blood sugar and energy levels steady. Consuming a typical Western diet, high in starchy carbohydrates, such as white bread, potatoes, pasta, and sugary snacks, will raise blood sugar levels very quickly, giving a quick burst of energy, but it is followed by a slump and feelings of tiredness and fatigue.

"Caffeine is another potential culprit. It may seem to boost concentration and alertness in the short term, but high doses can further

disrupt blood sugar balance.

"Dehydration can be another contributor. Our bodies are around 60 per cent water, and we need it for so many things, such as delivering nutrients into our cells, removing waste, regulating temperature and producing energy molecules. If we don't have enough, we can quickly end up feeling fatigued."

She continued: "Our bodies need a full range of nutrients to function optimally, so eating a varied diet full of nourishing foods is always important. In particular, good quality proteins such as eggs, lean meat, wild fish, tofu, nuts, seeds, and healthy fats, including olive oil, coconut oil, avocados, and many different coloured vegetables. Eat at regular intervals and include protein with every meal to help balance blood sugars. Studies show that starting the day with a nutritious breakfast such as eggs or overnight oats with nuts and seeds can improve energy levels, concentration, and alertness.

"Avoid pre-packaged processed foods, which have very little nutritional value, and often contain high levels of refined carbohydrates, leading to spikes and slumps in blood sugar. Replace starchy carbohydrates, such as white bread, potatoes, pasta, and sugary snacks, with complex carbohydrates, such as vegetables or whole grains, which release energy slowly, helping maintain balanced blood sugars."

Being mindful of what is being consumed is also to be advised, Holmes suggested.

She explained: "Ironically, both insufficient and over-consumption of food can contribute to fatigue. Eating foods that are not nutritious also contributes. Insufficient calorie intake impacts the fuel available to the body for its cellular processes. Food choice is important. In particular, foods that cause blood sugar spikes can be problematic. Caffeine overload can also be problematic. A balanced diet with vegetables, fruits, whole grains, sufficient protein and essential fats is important. Dehydration can also cause fatigue, so ensuring optimal intake of water is important. Since food allergies can cause fatigue, elimination diets may be a useful determinant in some cases (after underlying disease processes and nutrient deficiencies have been ruled out, and lifestyle changes made)."

Considering the gut is also advised.

"Beneficial species produce a variety of compounds, including B vitamins, which are important for red blood cell formation (transporting oxygen around the body) and act as co-factors for cellular respiration processes. Our gut bacteria also produce short-chain fatty acids (SCFAs) via intestinal fermentation of dietary fibre and resistant starch. SCFAs not only provide a fuel source for colonocytes, but also play an important role in maintaining overall energy homeostasis. In fact, it has been estimated

that SCFAs contribute to 60-70 per cent of the energy requirements of colonic epithelial cells and five-15 per cent of the total caloric requirements of humans.²⁰ Beneficial species also support the health of the gut barrier to reduce systemic inflammation, which is commonly associated with symptoms of fatigue.

"Finally, increasingly research is uncovering the important role that the gut microbiota play in mental and cognitive health via the microbiota-gut-brain axis. With fatigue being a common symptom on many psychiatric and neurodegenerative conditions, supporting gut health may also have a positive effect on energy levels via this route. Clients should, therefore, be encouraged to consume a wide variety of plant-based foods containing plenty of prebiotic dietary fibres, resistant starches and polyphenols, to support microbial diversity in the gut, along with traditionally fermented foods such as live yoghurt, kefir, sauerkraut and kimchi."



A NOTE ON TESTING

There may be instances where you believe testing is needed to get to the root cause of the fatigue.

Here, Braye advised: "The National Institute for Health and Care Excellence (NICE) guidance² on fatigue recommend assessment of a person presenting with fatigue should include asking about: what the person means by tiredness; onset, duration, severity and precipitating factors; the effect of sleep, rest and exercise on symptoms, and the impact on daily activities; sleep pattern and quality; any psychosocial life events or stressors; any comorbid anxiety and/or depression; any comorbid chronic ; any contributor medications; possible symptoms of CFS (such as persistent unexplained fatigue for at least four months, post exertional fatigue, cognitive difficulties or memory problems, sleep disturbance or chronic pain); and any red flags suggesting an underlying condition (such as significant unintentional weight-loss, fever, night sweats, persistent lymphadenopathy, and localising or focal neurological signs).

"Depending on clinical judgement, NICE recommends the following initial first line blood tests: full blood count, inflammatory markers, renal and liver function tests, thyroid function tests, HbA1c and coeliac serology. Additional testing may be considered on a case-by-case basis, and/or if symptoms persist for three months or longer.² For client's presenting with fatigue, I would usually recommend vitamin B12, folate, ferritin and vitamin D levels also be tested. For women of childbearing age, a pregnancy test may also be suggested¹."

She added: "Clients presenting with fatigue should be referred to their GP for free first-line testing and a copy of the results obtain to review for optimal levels (rather than just those deemed acceptable by the NHS). These results and the client's case history can then inform the nutrition practitioner's decision on recommended further functional testing: for example, more comprehensive thyroid testing, stool analysis, organic acids test, adrenal stress test etc."

And Bauskis suggested: "Blood tests to diagnose or rule out anaemia, comprehensive thyroid function test to assess the health and functioning of the thyroid gland and adrenal stress test including CAR (cortisol awakening response) to ascertain how the adrenals are responding, and where they are health-wise."



RECOMMENDED SUPPLEMENTS

There is much you can consider in terms of recommended supplements.

Dr Glenville suggested: "A multivitamin and mineral can help to safeguard against nutritional deficiencies which can cause fatigue. Iron is needed for the blood to carry oxygen around the body. It is an important component of haemoglobin and without enough iron, the body can't get enough oxygen so can feel tired and exhausted. Magnesium helps to break down glucose into energy. Magnesium is important for the generation of energy by activating ATP, which is the main source of energy in cells. Omega 3 essential fatty acids are vital for energy production and research has shown them to have a significant beneficial effect on people suffering from chronic fatigue.

"It is now thought that energy levels can be affected by a lack of vitamin D. Vitamin D receptors are present in the central nervous system and vitamin D can affect neurotransmitters like serotonin, which are linked to mood and feelings of wellbeing and energy. Alpha-lipoic acid is a vitamin like substance that speeds up metabolic reactions involved in energy production in cells. A powerful antioxidant used to boost energy and overcome fatigue."

Bauskis also suggested: "The B complex vitamins are essential for energy production within the body, and to reduce tiredness and fatigue. Vitamin C and key minerals, especially magnesium, iodine and copper, are all essential for energy production throughout the body, and within the cells. Good levels of iron and B vitamins, specifically folate and B12, will guard against anaemia."

Holmes continued: "Vitamin B12 helps to increase energy and convert food into energy within cells; this essential nutrient is needed for maturation of red blood cells, which transport oxygen throughout the body. Vitamin B12 deficiency can manifest as fatigue/weakness, nerve problems, balance problems, sore mouth/tongue, confusion, depression, poor memory, constipation, and weight/appetite loss; pernicious anaemia occurs when the body cannot produce/utilise intrinsic factor so that vitamin B12 absorption is difficult. Those with digestive disorders or who have had surgery for GI issues or

weight loss are at risk for B12 deficiency. Vegetarian and vegan diets may inadequately provide B12."

Braye added: "Much of the research into nutraceutical supplementation for fatigue has been conducted in the context of CFS, where some dietary components seem to be promising. Interestingly, acetyl L-carnitine administration has been reported to reduce both mental and physical fatigue in older people²¹ and vitamin D deficiency has been associated with both mental and physical fatigue.²² Checking vitamin D levels and supplementing appropriately is therefore recommended.

"Given that fatigue often has been suggested to be due to inflammation and oxidative stress affecting the mitochondria, antioxidant supplementation has been proposed as a strategy to reduce fatigue.²³ Nicotinamide adenine dinucleotide and coenzyme Q10 has been reported to reduce fatigue in CFS patients.^{24,25} Additionally, in animal models, it has been documented that antioxidants can lead to a reduction of fatigue.²³ However, the evidence in humans is still sparse.²⁶

"The essential role of vitamins B6, B12 and folate in maintaining the mitochondrial one-carbon transfer cycles by regulating mitochondrial enzymes has been confirmed in studies.²⁷ The essential role of the B vitamin family in maintaining mitochondrial energy metabolism and how mitochondrial function is compromised by a deficiency of any B vitamin has also been evidenced.²⁸ Therefore, a good quality B complex is often the first port of call with clients experiencing fatigue, along with magnesium, which is required by the enzymatic reactions involving the energy storage molecule ATP"

She added: "Given the potential importance of gut health in energy homeostasis, taking a good quality live bacteria supplement plus vitamin B12, which contributes to the reduction of tiredness and fatigue,²⁹ is also recommended."

Frank Brogan, Senior Nutritionist at Pharma Nord, also advised: "Coenzyme Q10 is a major nutritional supplement identified in research not only for fatigue as a standalone complaint but conditions with a fatigue element. Research is building for Q10 therapy in conditions such as chronic fatigue syndrome, fibromyalgia and even long Covid. Fatigue has been linked

in these conditions with dysfunction of the mitochondria, while Q10 supplementation may be helpful for this due to being an antioxidant nutrient found within the mitochondria. Simultaneous supplementation with selenium can be supportive of Q10 use, as good selenium status ensures proper Q10 use within the body."

And Powers continued: "It is estimated that almost half of us may be deficient in iodine, a crucial mineral for healthy thyroid function. A good option is to use nascent iodine, which is quickly absorbed into cells. D-ribose is a naturally occurring sugar that is vital for energy production. It is the main building block of ATP, the fundamental unit of energy within the body's cells."

Holmes suggested: "Adaptogenic herbs are biological response modifiers that may help balance, restore and protect the body from the effects of stress. Adaptogens may help relieve stress by modulating the release of stress hormones from the adrenal glands. These can help restore the body's innate immune system and aid adaptation to different stressors. Adaptogens are often soothing, countering anxiety, fatigue, insomnia and stress; they may help balance hormonal systems. Examples include rhodiola, ashwagandha, andrographis, maca (aka Peruvian ginseng), suma/pfaffia (Brazilian ginseng), and schisandra berry.

"Guaraná is a natural energiser for mind and body, helping support mental performance, reduce mental fatigue and aid withdrawal from caffeine overuse, and is especially useful for shift workers, during long journeys, during study times for improved alertness and concentration and any time 'keeping the edge' of alertness and quick response is needed. These botanicals are available in capsules as well as teas.

"Polyphenol-rich green teas, including matcha (a whole leaf tea high in the powerful catechin EGCG) contain theine, and can also boost energy levels. The guaranine, mateine and theine occur alongside theobromine, theophylline, catechins and saponins, with the compound structure slowing the rate at which the naturally-occurring caffeine is released, and without causing the immediate 'spikes' associated with caffeine/coffee."



Targeting the gut and the head

Bio-Kult Migréa is an advanced multi-action live bacteria formulation that targets both the digestive tract and the head and has been formulated with magnesium and vitamin B₆, both of which contribute to normal functioning of the nervous system, and reduction of tiredness and fatigue. Vitamin B₆ contributes towards the normal function of the immune system and has been shown to help protect against inflammation. Vitamin B₆ also contributes to the regulation of hormone activity. All combined to keep the central nervous system functioning normally. Bio-Kult Migréa is suitable for everyday use as part of a healthy lifestyle.
www.bio-kult.com



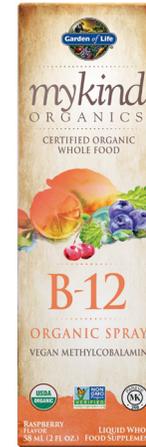
Keeping You In Control - Naturally TRANQUIL SUPPORT

A unique formulation of specially selected nutrients for those trying to manage a busy lifestyle in today's stressful world.

Contains

- All the B vitamins with extra B5 (stress relief and energy), magnesium (relaxation and sleep), chromium (blood sugar balance), curcumin (antioxidant and anti-inflammatory), Siberian ginseng (balance), L-theanine (stress and anxiety) and aloe vera (digestion, immune support)
- Free From Sugar, Gluten, Starch, Soya, Wheat, Dairy, GMOs, Fillers, Binders, Anti-caking Agents, Artificial Sweeteners, Flavours, Colours, Preservatives.

Nutrients in their most bioavailable form to aid absorption. Vegan and Vegetarian Society registered, Kosher and Halal approved.
www.naturalhealthpractice.com



myKind Organics Vitamin B12 Spray

Garden of Life myKind Organics Vitamin B12 is the first certified organic, wholefood, non-GMO project verified B12 spray. Garden of Life's B12 provides an easily absorbed, active natural form of B12 (methylcobalamin), at a dose of 500mcg per spray. Offered in a delicious organic raspberry flavour; Garden of Life sprays are the only certified organic spray vitamins offering a more bioavailable format that reaches the bloodstream quicker, therefore more efficiently absorbed into the bloodstream and utilised by the body. The spray bottle can be easily carried so can be taken quickly and conveniently on the go. For more information or to place an order, visit www.kinetic4health.co.uk or email sales@kinetic4health.co.uk



Evidence-Based Gut Health Formula

NEW ActiFlex Gut Health is a unique supplement combining 18 scientifically researched nutrients and herbal extracts. This mix of premium ingredients provides holistic digestive support, promoting digestive health, gut regularity, and intestinal function. It's a comprehensive, affordable formula, developed for high patient compliance and includes:

Probiotics (2 billion CFU): Bifidobacterium Bifidum, Lactobacillus Acidophilus, Lactobacillus Casei

Prebiotics: Aloe Vera, Apple Pectin

Soothing Botanicals: Milk Thistle, Liquorice Root (DGL), Slippery Elm, Nettle Leaf, Chamomile Flower, Ginger Root, Marshmallow Root, Fenugreek

Amino Acids & Flavonoids: L-Glutamine, Quercetin

Minerals & Enzymes: Bromelain, MSM, Zinc Carnosine

Made in UK. Vegan. Gluten free.
naturaldispensary.co.uk
positivesciencepeople.uk

NNA 2021 Annual Conference



This conference is a departure from our usual format. The focus is on us as therapists, looking after and nourishing ourselves wholistically! The conference is a one and a half day event with the option of an overnight stay at the venue (dinner, bed and breakfast) which can be booked separately. It will be an exclusive event with **only 50 places available**, so please book soon to avoid disappointment.

The conference will be held at Emerson College in East Sussex and starts Friday 24th September at 2pm and ends on Saturday 25th September at 5pm.

Go to <https://www.nna-uk.com/blog/category/events/> for details and the link to reserve a place.

NNA Membership

Membership of the NNA includes many benefits and special offers.

Go to <https://www.nna-uk.com/memberships/memberships-benefit> for full details.



www.nna-uk.com | info@nna-uk.com | 01908 616543



COLLEGE OF
NATUROPATHIC
MEDICINE

Training Successful Practitioners

FREE LECTURE
Scan below

CHANGE CAREER Train to become a...

- Nutritional Therapist
- Acupuncturist ■ Herbalist
- Homeopath ■ Naturopath
- Health Coach ■ Natural Chef



01342 777 747

naturopathy-uk.com/nifree

ANP Association of
Naturopathic
Practitioners

SUPPORTING PRACTITIONERS



Who can join? ■ Nutritional Therapists ■ Herbalists
■ Acupuncturists ■ Homeopaths ■ Natural Chefs

www.theanp.co.uk info@theanp.co.uk 0203 319 9315

Train to be a Nutritional Therapist

At CNELM, we teach undergraduate and postgraduate courses in nutrition validated by Middlesex University:

- BSc (Hons) Nutritional Science*
- MSc/PG Dip in Personalised Nutrition*

* Accredited by the NTEC for nutritional therapy practice in combination with CNELM's Nutritional Therapy Practice Diploma

Available for full or part-time study and Distance Learning

Short courses in Nutrition and Coaching also available:

- Nutrition Coach Diploma
- NLP Practitioner



Centre for Nutrition
Education & Lifestyle
Management

Course Enquiries:

Centre for Nutrition Education & Lifestyle Management (CNELM)

T: 0118 979 8686

E: info@cnelm.co.uk

www.cnelm.co.uk

With rates on a rapid upward curve, type 2 diabetes is a major health concern. It is also one which responds well to modifiable measures, as our practitioner protocol sets out.

With type 2 diabetes being by far the most common form of the disease, and with numbers rising rapidly, the situation should be a cause for concern. What's equally concerning is the number of modifiable factors that raise our risk – with excess weight being one of the key issues to address.

And it is an area that needs to be addressed, when you consider the cost to our health – both short and long-term – as well as to the NHS.

Catherine Gorman, Nutritionist and Health Coach at Good Health Naturally, commented: "The number of people diagnosed with diabetes in the UK has more than doubled during the last 25 years from 1.4m to 3.5m. And, according to Diabetes UK, this figure is on course to rise to 5.5m by 2030. Around 90 per cent have type 2 diabetes, eight per cent type 1 diabetes, and two per cent rarer types.

"It is estimated almost a million people are currently living with type 2 diabetes which is yet to be diagnosed. This increasing number of people with type 2 diabetes is a challenge to the NHS. I

t is a leading cause of sight loss and lower limb amputation, and can contribute to kidney failure,

heart attack and stroke. Currently, diabetes and its complications cost more than £10bn a year to treat in the UK."

Rose Holmes, Nutritionist and Education and Training Manager at Rio Health, continued: "It is said that one in every 16 people in the UK has diabetes (diagnosed and undiagnosed), the majority of these having type 2 diabetes, a lifestyle disease, linked with obesity (which has an estimated even higher prevalence of 20 per cent in the UK for adults). In addition to the growing incidence among adults, incidence of both obesity and type 2 diabetes in children is also on the rise."

And such is the power of a healthy diet and lifestyle that people can actually reduce their risk and in some cases, reverse it.

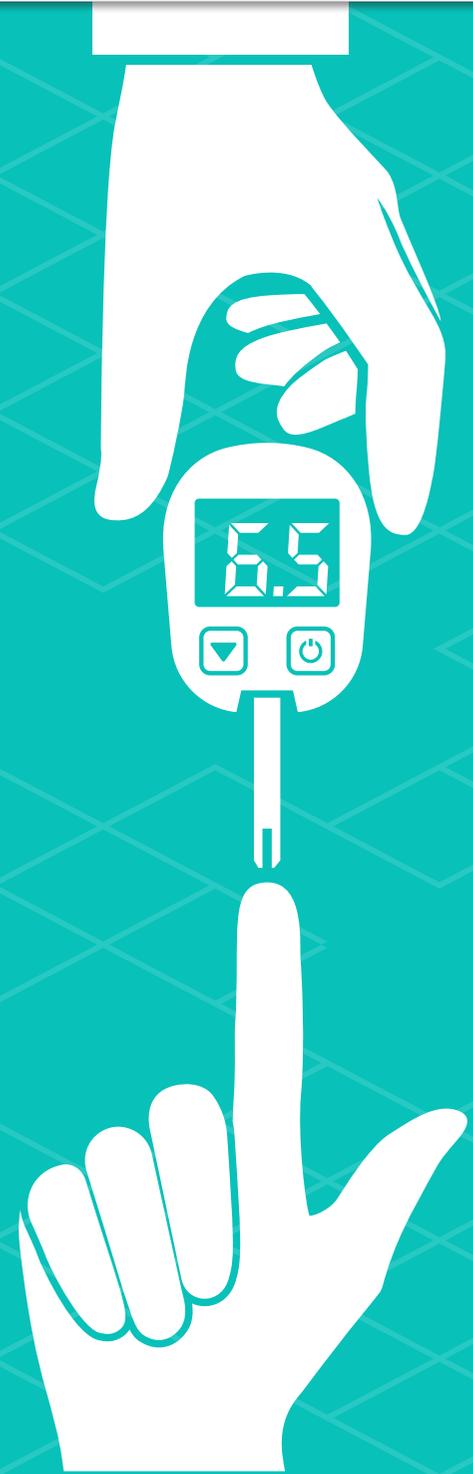
Gorman pointed out: "The Diabetes Remission Clinical Trial (DiRECT), led by Professor Roy Taylor from Newcastle University, has shown intensive weight loss programs can help people with type 2 diabetes achieve remission without taking any medication. He suggests people with type 2 diabetes have become too heavy for their own body. So, if they accumulate more fat than they can cope with which can't be

stored under the skin, it will go elsewhere, including the liver and pancreas. This can induce insulin resistance and increases blood sugar production.

"Long-term exposure to saturated fatty acids is harmful to the beta-cells which create insulin. The amount which can be stored under the skin varies from person to person, indicating a 'personal fat threshold'. He has found weight loss of around 15kg is necessary for most people. Maintaining the benefits after weight loss is possible if liver triglycerides and fat in the pancreas remains low.

"Stress is another thing to consider. Studies show it is an independent risk factor for developing type 2 diabetes. Persistent stress leads to chronically high levels of the hormone, cortisol, which directly opposes the action of insulin, leading to raised blood glucose levels. So, reducing stress reverses this and increases insulin sensitivity.

"Chronic sleep deprivation or sleeping less than seven hours a night is now recognised as a major contributor to type 2 diabetes. Not only can it cause insulin resistance, it also increases the hunger hormone, ghrelin, leading to poor diet choices and obesity."



THE OBESITY FACTOR

Being overweight dramatically raises the risk of developing type 2 diabetes, perhaps explaining why rates of the disease are so high, given the nation's expanding waistlines.

Holmes commented: "The recently widely publicised association between obesity/diabetes and poor immune outcomes (during the Covid-19 pandemic) has highlighted the negative impact of these lifestyle diseases. In addition to its impact on immune health, obesity, and type 2 diabetes in particular, also dramatically increases risk of atherosclerosis, heart attack, stroke and other cardiovascular problems. Neuropathy, retinopathy, hearing problems, depression and kidney damage may associate, and type 2 diabetes also increases risk of Alzheimer's disease. So, not only is the current incidence of type 2 diabetes (and obesity) high, but its association with many other disease conditions means both obesity and diabetes pose huge threats to the health of individuals, as well having capacity to overwhelm our health system."

Gorman continued: "Obesity is considered one of the main contributing factors to type 2 diabetes, so with almost two thirds of the UK adult population now considered overweight, it is inevitable cases of type 2 diabetes will also be on the increase.

"Research suggests people with a BMI of more than 30 are up to 80 times more likely to develop type 2 diabetes compared to those with a BMI of less than 22. This is because in obese individuals, the amount of nonesterified fatty acids, glycerol, hormones, cytokines, proinflammatory markers, and other substances involved in the development of insulin resistance, is increased. In particular, central obesity, excess fat around the middle and upper parts of the body is of particular concern. Studies have found an increased waist circumference is linked to an increased risk of type 2 diabetes."

In terms of other risk factors, there are a number to consider.

"Risk factors for type 2 diabetes include age, overweight/obesity, smoking, excess alcohol, ethnicity (African-Caribbean, Black African or South Asian are at increased risk, as are some indigenous peoples, such as the Native American Pima Indians), and having high blood pressure," Holmes commented.

"Additionally, there is increased likelihood of type 2 diabetes if a parent, sibling or child has this condition. Some medical conditions such as Polycystic Ovary Syndrome (PCOS), mental health conditions (for example, schizophrenia, bipolar disorder and depression), and gestational diabetes also affect risk. And having a sedentary lifestyle or having disturbed or insufficient sleep can also associate with increased risk for

type 2 diabetes.

Whilst many people may recognise that a sedentary life may be a risk factor, the negative impact of insufficient sleep is often not appreciated as a factor which can increase risk of disease. The minimum seven hours sleep recommended by the CDC for avoidance of disease in adults, is, unfortunately, not attained by many of us.

"Insufficient sleep and sleep abnormalities are associated with risk of incident type 2 diabetes and worse prognosis in those with established diabetes¹ and a 2015 meta-analysis of type 2 diabetes risk and sleep duration found that risk followed a U-shaped curve, with seven hours sleep associating with lowest risk; an hour less associated with a nine per cent increased risk and an hour more than the seven hours also increased risk overall²."

Gorman went on: "Lack of exercise is becoming increasingly problematic. It is an effective way to lower insulin resistance. Building muscle increases glycogen storage, so more glucose can be taken out of the bloodstream rapidly, avoiding fluctuations in blood sugar and spikes in insulin. When exercising, the body uses stored glycogen, and the metabolic

rate is increased by up to 10 times and can remain raised for 15 hours afterwards.

"Ageing is a significant risk factor for type 2 diabetes. The risk begins to rise significantly around 45-years-old and rises considerably after age 65. There is also a strong genetic link. People are two to six times more likely to get type 2 diabetes if they have a family member with the condition. Several genes have been identified as contributing to type 2 diabetes, but diet and lifestyle will play a huge role in whether or not these genes will be expressed or activated.

"Health conditions can also raise the risk. In particular, metabolic syndrome, a collection of disorders which increase the likelihood of developing not only diabetes, but heart disease, and stroke. The disorders associated with it are: high blood pressure, insulin resistance, high blood glucose, excess fat around the middle, high triglyceride levels, low levels of 'good' HDL cholesterol and systemic inflammation. Pre-diabetes is when blood glucose levels that are higher than normal, but not high enough to be diagnosed with type 2 diabetes. Between five-10 per cent of people with pre-diabetes will go on to develop type 2 diabetes each year."

THE ROLE OF FOOD

Diet plays a fundamental role in all aspects of health, especially with regard to weight, and there are a range of factors to keep in mind when advising clients.

“Dietary choices can have a massive impact,” Gorman commented. “The macronutrient composition of a meal will determine the amount of insulin released. Carbohydrates stimulate insulin release, while fat has a minimal effect, and protein stimulates some insulin, but also stimulates glucagon, an antagonist to insulin.

“For the last few decades, the standard food pyramid has listed starchy carbohydrates as the biggest food group – this includes breads, cereals and potatoes, with fats and proteins making up a much smaller percentage of the daily intake. The Western diet now often consists of sugary foods, pastas, cereals, and potatoes, and unhealthy fats, it lacks fibre, antioxidants and phytochemicals. Alongside this model, we have seen a steady rise in chronic diseases, including diabetes and heart disease, as well as obesity. It appears the higher the diet is in refined or processed carbohydrates, the worse the level of insulin resistance. Simply lowering the glycaemic load will reduce the insulin response required.”

She went on: “Intermittent fasting or time-restricted feeding can be a great way to reduce insulin levels and help undo the effects of chronically elevated levels. It takes around eight-10 hours to use up the glycogen stores, then the body will start to burn fat and insulin levels will start to fall. So, even a 12-hour overnight fast can be beneficial.”

Holmes went on: “A diet that permits

excess insulin in the bloodstream can cause artery walls to become inflamed; by driving inflammation and slowing blood flow, diabetes can accelerate atherosclerosis. When blood vessels become completely blocked, heart attacks and strokes occur.

“Blood sugar level is very much impacted by both diet and lifestyle. A diet that does not promote good blood sugar control permits hypoglycaemia and hyperglycaemia; this increases the risk of developing type 2 diabetes by overloading the body’s ability to produce enough insulin and desensitising it to insulin. Insulin resistance occurs when excess blood glucose reduces the cell’s ability to absorb and use this for energy.

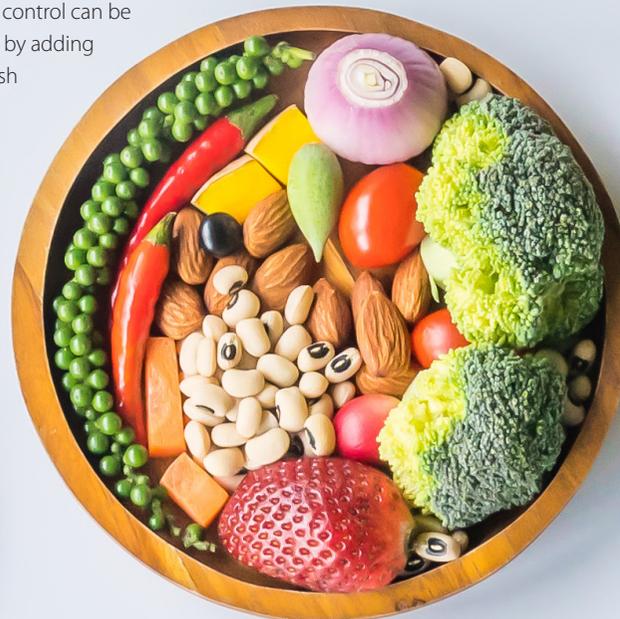
“The most significant dietary factors relate to inappropriate intake of high energy foods (including starchy carbohydrates, sugar-laden foods/drinks and saturated fats) and low intake of fibre. These can result in inappropriate weight gain and impair insulin action, increasing risk of developing type 2 diabetes. Appropriate amounts of protein are needed and should be included in all meals and snacks.”

She continued: “In addition to opting for a diet that avoids/limits sugar (including natural sugars such as honey, maple syrup, etc) and unrefined starchy carbohydrates (replacing these with wholegrains of limited amount), good blood sugar control can be encouraged by adding plenty of fresh vegetables

(particularly green vegetables), ensuring adequate protein with every meal/snack, and ensuring essential fatty acids (via omega 3-rich fish). Using extra virgin olive oil in preference to other oils and to butter are also healthier options. The diet should be anti-inflammatory and rich in antioxidants, with optimal intake of essential fatty acids and protein.

“Skipping meals (especially breakfast) and/or eating just before bedtime may also contribute to poor blood sugar control and associated repercussions.

A good breakfast that includes protein (for example, a soft-boiled egg, nuts or yoghurt) is important. And late-night eating (especially starchy ‘snack foods’) disrupts insulin secretion.”



ADDRESSING DEFICIENCIES

It's important to take note of any potential nutrient deficiencies among diabetic clients.

Gorman advised: "It is fair to say most people eating a Western diet will be lacking in some essential nutrients. The increase in low-cost, high-calorie, nutrient-poor foods during the last 40 years, plus modern agriculture and food processing, has led to a reduction in the micronutrient content of common foods. Despite an excess of dietary calorie intake, people can suffer high rates of micronutrient deficiencies.

"As with nearly all biochemical processes, glucose metabolism and insulin signalling require cofactors and vitamins. Deficiencies in any of these micronutrients have potential to impair glucose metabolism and cause insulin resistance. In particular, vitamin D, chromium, biotin, thiamine and vitamin C have been noted as deficient at relatively high rates in people with diabetes."

When looking in specific detail at key nutrients, Gorman advised:

■ **"Vitamin D:** There are vitamin D receptors present in pancreatic β -cells. Low levels of the sunshine vitamin has been shown to be associated with increased insulin resistance. Seasonal fluctuations in glycaemic control in type 2 diabetics can occur and may actually be due to fluctuations in vitamin D levels.

■ **Chromium:** Chromium has long been recognised as an essential trace mineral required in the insulin signal cascade. Studies have demonstrated it increases sensitivity to insulin by increasing insulin binding to cells, increasing the number of insulin receptors and activating insulin receptor enzymes. A deficiency has been identified in severely malnourished people with severe insulin resistance, hyperglycaemia, hypertriglyceridemia, and painful neuropathy. It is also reputed to reduce food cravings by helping to keep blood sugar stable throughout the day.

■ **Biotin:** Biotin is a water soluble vitamin, and people with type 2 diabetes demonstrate lower circulating

levels of biotin and an inverse relationship between biotin level and fasting plasma glucose has been reported. In one longitudinal study, diabetic patients treated for 28 days with biotin supplements had improvements in fasting glucose and insulin levels.

■ **Thiamine:** Thiamine is an essential micronutrient that acts as a cofactor for several key enzymes in glucose and amino acid metabolism, including transketolase, pyruvate dehydrogenase, α -ketoglutarate dehydrogenase, and α -keto acid decarboxylase. A deficiency can lead to increases in the polyol, hexosamine, protein kinase C, and increased glycation.

■ **Vitamin C:** Vitamin C is a water soluble antioxidant vitamin not stored in the body. Limited intake of fruits and vegetables can lead to rapid depletion. Diabetics seem to have lower dietary intake and lower plasma levels of vitamin C. In a population study of 232,007 older adults, vitamin C supplementation was associated with mildly lower rates of type 2 diabetes. People who took 500mg daily had a nine per cent reduction in prevalence of diabetes.

■ **Magnesium:** Magnesium is the fourth most abundant mineral in the body, but 80 per cent of the population suffer some level of deficiency. It is needed for insulin to act effectively. To enter the cells, magnesium requires insulin, so a vicious cycle can occur with low magnesium levels causing insulin resistance, and thus leading to lower magnesium uptake."

Holmes went on: "In addition, any medication, including those prescribed for type 2 diabetes, may increase the possibility of nutrient deficiency. Metformin use, for example, can lead to depletion of vitamin B12 and associate with zinc and magnesium deficiency.

"Suggested mechanisms for depletion of vitamin B12 include altered small bowel motility (which stimulates SIBO and consequential B12 deficiency) and alteration in intrinsic factor levels⁴."



SUPPLEMENTS TO RECOMMEND

As well as the already mentioned nutrient deficiencies, there may be certain supplements you would want to recommend to clients.

“For those using Metformin, supplementation with a vitamin B12 oral spray can benefit. Vitamin B12 absorbs well sublingually so oral sprays offer an excellent means of delivery for this important nutrient. Since declining vitamin B12 levels often associate with other vitamin B deficiencies (for example, folate status), a vitamin B complex may also be advisable,” Holmes recommended.

“A liposomal magnesium product may also benefit those using Metformin. Magnesium is depleted by use also of caffeine, alcohol, smoking, proton pump inhibitors and many pharmaceuticals, in addition to Metformin. Older individuals are often less able to absorb magnesium and they excrete it more easily. Liposomal delivery is particularly useful for those who have reduced absorption; this delivery method can increase the ratio of absorbed magnesium, avoiding osmotic effects.

“An excellent addition to a protocol to aid blood glucose control is pata de vaca tea. This botanical, also known as Brazilian orchid tree, is often consumed after meals to aid regulation of blood sugar levels. Drink one cup of this tea after each main meal!”

Gorman went on: “Cinnamon has been used for centuries to support normal blood glucose. It can slow glucose absorption from the digestive tract by inhibiting certain digestive enzymes from the pancreas. Compounds in cinnamon can also mimic the effects of insulin, which can help in the later stages of type 2 diabetes, when pancreatic exhaustion leads to less insulin.

“Alpha lipoic acid improves glucose metabolism in those with type 2 diabetes. It is also a powerful antioxidant, offering protection for the eyes, nerves, heart, kidneys, and pancreas. Plus, it can help ease nerve-related symptoms common with diabetes, like numbness, pain, and burning in arms and legs. Zinc stabilises insulin so that it binds to cell receptors more effectively. It also acts as a cofactor for insulin degrading enzyme, required to break down insulin. Insufficient levels have been shown to increase insulin resistance particularly in the brain.

“Curcumin, a natural anti-inflammatory spice, can help stimulate glutathione protecting cells and protect tissues from inflammation and oxidative damage. Recent research has provided the scientific confirmation it could play an important role in the prevention and treatment of diabetes and its associated disorders. It could favourably affect most of the leading aspects of diabetes, including insulin resistance, hyperglycemia, hyper-lipidemia, and islet apoptosis, necrosis and prevent the deleterious complications of diabetes.”



EXPERT ADVICE

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



Why is it essential to pair vitamin D3 with vitamin K2?

DR KATARZYNA MARESZ EXPLAINED: There are some nutraceuticals that work as in harmony, providing benefit that is greater together than alone. And few nutrients work better together than vitamins K2 and D3.

Both vitamins D and K are fat-soluble and play a central role in how the body utilises calcium, synergistically working to strengthen our bones while protecting our hearts. Unfortunately, deficiency of both nutrients is recognised worldwide, and this can have a negative impact on bone and cardiovascular health.

While vitamin D is needed in the creation of vitamin K-dependent proteins and supports calcium absorption, vitamin K2 is critical in forming a solid bone matrix and a healthy cardiovascular system via the activation of the K-dependent proteins, osteocalcin and matrix Gla, respectively.

But if we are not balancing our D3 intakes with K2, we simply have an excess of inactive proteins not performing their functions. A 1993 study showed that vitamin D promotes the production of osteocalcin, which is responsible for building bone. Yet, when D was combined with vitamin K2, active osteocalcin levels are significantly increased.[1] These findings were supported by numerous observational studies that showed low vitamin K and D status is correlated with poor bone quality and higher fracture risk.

And this combination has been identified as necessary and effective in child populations:

- A 2013 clinical study showed MenaQ7 Vitamin K2 and D3 has a beneficial effect on children's bone health.[2]

- A 2018 pilot study linked K2 and D deficiency to higher incidences of low-energy fracture risks in children.[3]
- The combination of a specific vitamin K2 (MenaQ7) and D3 was clinically proven to have greater cardiovascular benefits compared to vitamin D3 alone and confirm their synergistic effect on cardiovascular health.[4]
- Other features where vitamin D and K overlap in creating synergies for health is their ability to regulate inflammation and oxidative stress markers.[5]
- Considering the combined synergistic mechanisms, it is argued that optimising levels of vitamin D3 and K2 is not only important for bone and heart health but also to support the immune system. [6]

Understanding the synergistic dance between these two essential vitamins and how vitamin D3 needs vitamin K2 to get the job done makes a strong and important argument that D3 supplementation should always include or be paired with vitamin K2 for the best health outcome.



ABOUT THE EXPERT

Dr Katarzyna Maresz is the President of the International Science and Health Foundation and the scientific coordinator of the educational portal, VitaminK2.org. Having published more than 30 scientific papers, she is involved in clinical trials with vitamin K2 in Poland and Europe.





What are the advantages of using vitamin C powders?

ROSE HOLMES ADVISED: Practitioners are familiar with the general advantages of using vitamin C for a wide variety of health benefits including, but not limited to, advantages for immunity, healthy ageing, antioxidant properties, wound healing, maintenance of bone, teeth, joints, skin and connective tissue.

Vitamin C supplement products come in a variety of formats including as wholefoods like camu-camu, the cherry-sized fruits of *Myrciaria dubia*, which are thought to be the world's richest source of natural vitamin C (also high in anthocyanins). Generally speaking, camu-camu supplements do not quantify vitamin C levels as these fluctuate with growing conditions. The advantage of camu-camu is that, as a wholefood, it supplies bioflavonoids and other synergistic components alongside the concentrated source of vitamin C. As such, camu-camu also partners well with quantifiable high-strength vitamin C supplements when much higher levels of this essential vitamin are required.

When high doses of vitamin C are needed, there are two easily available options: liposomal vitamin C and vitamin C powders. Dry liposomal vitamin C advantageously delivers large doses direct to the cell, avoiding issues of bowel tolerance. Powders like calcium ascorbate and sodium ascorbate also make good choices when high doses are needed.

Vitamin C, when taken alone, can deplete calcium stores in the body, and can often be too acidic to be tolerated by those with sensitive stomachs. Calcium ascorbate combines ascorbic acid with mineral calcium and may be beneficial for people who are severely ill.

Sodium ascorbate is a bioavailable form of vitamin C that provides more vitamin C per weight than other forms. Vitamin C has a natural laxative effect and helps to prevent constipation. Previously, sodium ascorbate was recommended to be used in combination with green clay (now officially recommended only for external use) to facilitate excretion of toxins from the body. If diarrhoea occurs during use, reduce the dosage.

Generally, vitamin C is recommended to take close to or alongside intake of food. Powders will be easier to take if mixed with room-temperature water to aid dissolving. As a guide, perhaps a half-glass or



more of water for one teaspoon of room-temperature water. Powders can be added to juice, but it would likely be far less easily dissolved and may alter the taste of the juice.

Vitamin C powders and dry liposomal powders make excellent choices when high levels of vitamin C are needed. Camu-camu can advantageously be used simultaneously to provide synergism.



ABOUT THE EXPERT

Rose Holmes, Registered Nutritionist, mBANT, BSc, Dip.ION, PGCE, has a special interest in chronic illness, circadian rhythm disruption and healthy ageing. She is the Education and Training Manager at Rio Health, which specialises in South American teas and supplements.



Can you talk about the link being made with coenzyme Q10 and long Covid – what is the research telling us?

FRANK BROGAN ADVISED: Long Covid (loosely defined as Covid-19 symptoms that persist for more than 12 weeks) describes a condition that occurs with a small number of sufferers of Covid-19. Symptoms vary, including vision alterations, joint pain, chest pain, shortness of breath and, of course, the loss of taste and smell. The most commonly reported symptom of long Covid, however, is profound fatigue.

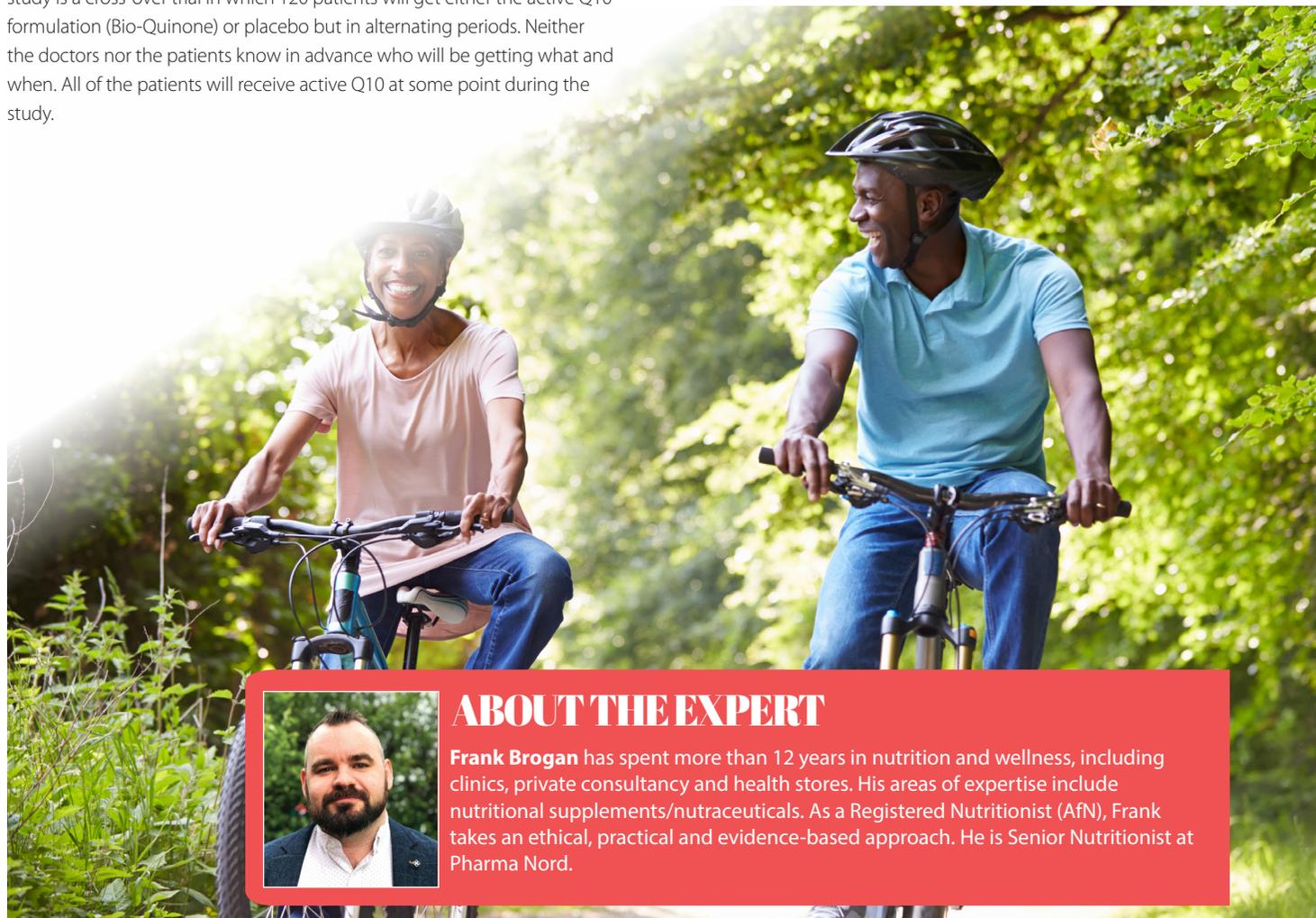
It's perhaps the fatigue element that began the discussion – is there a relationship between coenzyme Q10 (Q10) levels and long Covid? Q10 is widely identified as an important nutrient for the healthy functioning of the mitochondria, the organelle of our cells responsible for the delivery of energy, dysfunction of which can cause fatigue.

Q10 (also called ubiquinone) is concentrated in the mitochondria of the cell and has two primary functions. It acts in several stages of cellular respiration (especially within the electron transport chain), where it facilitates the ultimate conversion of dietary substrates (carbohydrates etc) into adenosine triphosphate (ATP), our primary unit of energy. Beyond this, Q10 also demonstrates antioxidant properties, able to counteract the effects of oxidative stress. Q10's antioxidant properties are especially important to the health of the mitochondria as it's the only fat-soluble antioxidant produced endogenously. This production, however, can be depleted with illness, age and the use of certain medications.

Q10 is widely identified as an important nutrient for the healthy functioning of the mitochondria. Mitochondrial dysfunction has been identified in several conditions with a profound fatigue element, including chronic fatigue syndrome and fibromyalgia. Evidence has also been building for several years supporting the potential therapeutic benefits of Q10 supplementation in these conditions.

It's proposed that Covid-19 infection can lead to an elevated level of oxidative stress, causing a mutation of one of the several COQ genes responsible for Q10 production. Such a mutation would lead to primary Q10 deficiency, leading to symptoms such as fatigue and myalgia. It's then theorised that not only would successful Q10 supplementation correct this deficiency, but Q10's position as a fat-soluble antioxidant compound could serve to protect the mitochondria from further oxidative damage.

More research is needed in the area, though an important new trial is already underway. The study, undertaken at Aarhus University Hospital (AUH), in Denmark, may be able to show if a coenzyme Q10 deficiency can explain the long-term effects that develop in some Covid-19 patients. The study is a cross-over trial in which 120 patients will get either the active Q10 formulation (Bio-Quinone) or placebo but in alternating periods. Neither the doctors nor the patients know in advance who will be getting what and when. All of the patients will receive active Q10 at some point during the study.



ABOUT THE EXPERT

Frank Brogan has spent more than 12 years in nutrition and wellness, including clinics, private consultancy and health stores. His areas of expertise include nutritional supplements/nutraceuticals. As a Registered Nutritionist (AfN), Frank takes an ethical, practical and evidence-based approach. He is Senior Nutritionist at Pharma Nord.



Organic & Vegan Supplements & Protein Powders

Ayurvedic herbal Ingredients



Good Guru Supplements are formulated by a team of Ayurvedic specialists

Our Vegan Protein Powders are Keto friendly have no add sugar (use stevia) and are a blend of pea, pumpkin & sunflower seed protein

Over 50 products to choose from

Available at all good health shops & now from The Natural Dispensary

FREE SAMPLE (ONLY FOR SUPPLEMENTS)

For more information & a Free Sample please contact **Sujata**
Email: sujata.m@thegoodguru.com
Hotline: 020 8773 7830 (Ext:228)



www.theGoodguru.com



MINAMI® CBD + Omega-3 is specially developed to synergise the benefits of two extraordinary ingredients.

MINAMI® CBD oil is extracted from the leaves, flowers and seeds, meaning it contains a full spectrum of compounds (terpenes, cannabinoids, flavonoids and fatty acids). When extracted together, they work in synergy - known as the 'entourage effect'.



FULL SPECTRUM CBD



PURE OMEGA-3



HIGHER CONCENTRATION



PROVEN SCIENCE

Our patented CO₂ extraction process uses 75% less heat to maintain the integrity of the ingredients and each batch is third-party tested.

@minami_health

Available now at naturaldispensary.co.uk

GLUTEN & LACTOSE FREE

Update on probiotic technologies and new innovative strains

Nutritional Therapist, Martina Della Vedova, examines how the probiotic market is advancing.

Bacteria in our body provide an astonishing number of health-supporting benefits.

In this article, we are going to explore new strains and some innovative probiotic technologies that show great applications for human health.

SURVIVAL RATES

To confer most health benefits, probiotics need to survive through the hostile environment of digestion and adhere to the intestinal epithelium. Interestingly, most of the lactic acid bacteria have demonstrated high survival rates⁽⁹⁾: human strains such as *Lactobacillus acidophilus* DDS-1 showed significantly better resistance in the gastric tract compared to alternative origin bacteria, such as plant and dairy origin thanks to its ability to produce bile salt hydrolase (BSH).⁽⁵⁾

VIABILITY

Microencapsulating colonies is one of the current ways utilised: the carrier particles are designed to form a physical barrier that protects the probiotics from problematic components in the surroundings, such as gastric acids, bile salts, digestive enzymes, to co-encapsulate probiotics with specific nutrients that help them to survive such as dietary fibres, or minerals, and they can also trap specific components excreted by the probiotics that are beneficial to their survival, such as bile salt hydrolyzing enzymes.⁽¹⁾

Another line of protection can be offered by desiccant-lined bottles, which prevent damage due to moisture, oxygen, and light exposure, eliminating the need for refrigeration.



PREBIOTICS AND MUCOSAL INTEGRITY

The concept of the terrain being as important as bacteria to achieve long lasting wellness is well established.

Nondigestible carbohydrates escape digestion in the upper gastrointestinal tract and get degraded by intestinal bacteria. Butyrate is one of the important metabolites produced through gastrointestinal microbial fermentation of prebiotics and it functions as a major energy source for probiotics by directly affecting the growth and differentiation of *Lactobacillus* and *Bifidobacterium* and reducing *Clostridia* species.^(3,4) Moreover, butyrate has various beneficial effects, including the enhancement of intestinal barrier function and also mucosal immunity.^(2,4)

The integrity of the gut epithelium and its mucosal layer is essential, and probiotics and prebiotics are vital to maintain its health. Studies show that good bacteria benefit from a mucous environment for good adhesion and nutritional resources and consequently produce substances to stimulate and maintain gut barrier function.⁽⁶⁾ It also seems that only the cooperation of multiple species and microbial diversity results in a healthy mucosal layer.⁽⁶⁾

LACTOBACILLUS ACIDOPHILUS DDS-1

Lactobacillus acidophilus is a well-known specie of bacteria used extensively by humans throughout history for its great capability of fermenting lactose to obtain different dairy products.

L. acidophilus DDS-1 is a strain that is highly resistant to low pH conditions and bile salts presence^(14,19), with a very good adherence to intestinal mucosa⁽¹⁴⁾ and, as various lactic acid bacteria strains, ferments fructooligosaccharides (FOS)⁽¹¹⁾ It has also the capability to modulate inflammatory cytokines, downregulating proinflammatory IL-8 and TNF- α and upregulating IL-10.⁽⁷⁾

L. acidophilus DDS-1 has been shown to enhance *Lactobacillus* species⁽¹⁹⁾ and inhibit a range of gastrointestinal pathogens in vitro. Probiotics may be able to inhibit, displace and compete with pathogens: *L. acidophilus* DDS-1 is unique due to its ability to produce acidophilin, an anti-pathogenic compound.^(8,9,10)

Cultured dairy products fermented with *L. acidophilus* DDS-1 were shown to receive greater tolerance⁽¹⁵⁾ and have higher levels of folic acid and vitamin B12, suggesting the strain has metabolic ability to produce certain

B vitamins.⁽¹²⁾ Additionally, *L. acidophilus* DDS-1 has been shown to limit the transformation of the primary bile acids into corresponding secondary bile acids modulating the post prandial signalling, which includes vagal nerve response.⁽¹³⁾ The administration of a probiotic product containing *L. acidophilus* DDS-1 was associated with significant clinical improvement in children with atopic dermatitis⁽¹⁶⁾, and with prevention and faster resolution of acute respiratory tract infections.⁽¹⁷⁾

In an adult study, four weeks of supplementation with *L. acidophilus* DDS-1 was found to help improve abdominal symptoms scores compared to placebo during an acute lactose challenge⁽¹⁸⁾, and in a randomised double-blind, placebo-controlled, parallel arm study in adults with symptoms of functional constipation, *L. acidophilus* DDS-1 was assessed and after one week a trend of greater frequency and consistency started showing, as well as a rise in bacteria species able to produce SCFA.⁽¹⁹⁾

Taking this strain one week prior to a trip also shows protection against traveller diarrhoea⁽²⁰⁾ and helping prevent urinary tract infections in children.⁽²¹⁾



LACTOBACILLUS REUTERI BM36301

Lactobacillus reuteri (*L. reuteri*) has been shown to be one to of the truly indigenous bacteria of the human digestive tract, as well as urinary tract, skin, and breast milk. It can produce antimicrobial molecules as organic acids, ethanol, and reuterin⁽²²⁾, enabling it to inhibit the colonisation of pathogenic microbes and remodelling the commensal microbiota composition in the host. Also, *L. reuteri* can benefit the host immune system by reducing the production of pro-inflammatory cytokines, whilst promoting regulatory T cell development and function⁽²²⁾, and bearing the ability to strengthen the intestinal barrier, the colonisation of *L. reuteri* may decrease the microbial translocation from the gut lumen to the tissues.⁽²²⁾ Microbial translocation across the intestinal epithelium has been hypothesised as an initiator of inflammation. Therefore, inflammatory diseases, including those located in the gut, as well as in remote tissues, may be ameliorated by increasing the colonisation of *L. reuteri*.⁽²²⁾

L. reuteri BM36301 was given to mice in drinking water while feeding them a standard diet for 20 weeks and different consequences depending on the gender of the mice were observed: males treated experienced less weight gain and higher testosterone level; females maintained lower serum TNF- α , as well as healthy skin with active folliculogenesis and hair growth. It was concluded that *L. reuteri* BM30301 has potential to improve various aspects of aging issues.⁽²³⁾

Pediococcus acidilactici CECT7483/ KABP-021, Lactobacillus plantarum CECT7484/KABP-022 and Lactobacillus plantarum CECT7485/ KABP-023

The combination of these three strains has given great outcomes in relieving IBS-like symptoms, specifically improving Irritable Bowel Syndrome Quality of Life.⁽²⁴⁾ In a randomised, double-blind, placebo-controlled clinical trial, patients with IBS and diarrhoea according to the ROMA III criteria, received one capsule a day for six weeks containing KABP-021, KABP-022 and KABP-023. IBS-QoL (irritable bowel syndrome related quality of life) increment was significantly larger in patients treated with this formula than in those receiving placebo. Gut-specific anxiety also showed a significantly greater improvement after six weeks of treatment in patients treated with probiotics.⁽²⁴⁾

The three unique strains produce molecules with an anti-inflammatory effect: one study demonstrates the

formula improves inflammation via reducing the level of pro-inflammatory cytokines such as IL-6 and IFN- γ ⁽²⁵⁾, and another study shows they promote the action of anti-inflammatory cytokine IL-10, in lipopolysaccharide-stimulated human macrophage cultures.⁽²⁸⁾

In vitro experiments on strains KABP-021, KABP-022 and KABP-023 show they are characterised by traits such as survival to gastrointestinal passage, adherence to intestinal mucosa, resistance to oxidative stress, production of metabolites with anti-inflammatory activity (either short fatty acids or other products with said activity), significantly inhibitory activity against *Candida albicans* and several potentially pathogenic bacteria ⁽²⁶⁾.

The three studied strains produce also polyphosphate granules, and a study showed its importance as a bioactive molecule that induced cytoprotective mechanisms and prevented oxidant-induced intestinal barrier weakening.⁽²⁷⁾

Lactobacillus plantarum CECT7481/KABP-051, Lactobacillus brevis CECT7480/KABP-052, Pediococcus acidilactici CECT8633/ KABP-053

This probiotic combo has a clinically proven benefit in oral health, such as gingivitis, and clinically performed better efficacy than standard oral care alone.⁽²⁹⁾

These strains also exhibit high survivability in oral environment, low acid production, high adhesion on oral tissue, formation of aggregates which helps to reduce dental plaque formation.^(30,31)

When combined, they provide a wide inhibitory spectrum for oral harmful bacteria and low production of mal-odour.^(30,31)

Lactobacillus plantarum CECT7504/KABP-061

This unique strain, naturally found in the vaginal microflora, features high survivability and adhesion in vaginal environment, high acid producer suitable for vaginal application, wide inhibitory spectrum against vaginal pathogens, resistant to common antimicrobials.⁽³⁴⁾

Effect of *L. plantarum* CECT7504 applied vaginally on vulvovaginal candidiasis is evaluated. An open label, non-randomised parallel clinical study was conducted: 33 women (18-50) years old are applied single dose of 500mg clotrimazole followed by vaginal tablet with the strain for two months; 22 women with similar population are applied clotrimazole only. The use of strain demonstrated threefold reduction in adjusted risk of recurrence.⁽³⁵⁾

Pediococcus pentosaceus CECT8330/KABP-041 and Bifidobacterium longum CECT7894/KABP-042

In one study, it was evaluated the in vitro probiotic properties of *Pediococcus pentosaceus* KABP-041 and *Bifidobacterium longum* KABP-042 and their suitability as candidates for treating infantile excessive crying syndrome. Results reveal that KABP-041 induces IL-10 production, and the combination with KABP-042 shows a broad-spectrum inhibitory activity against pathogens

Furthermore, the two strains were combined in a single formula which was confirmed to be well tolerated in a randomised, double-blind clinical trial in infants with excessive crying syndrome and showed a reduction in daily crying time.⁽³²⁾

A significant increase in the microbiota diversity was found in infants

treated with this duo when compared to placebo, which correlated with a reduction in the total crying time.⁽³³⁾ In addition, relative abundance of several phyla and genera, which are described to be increased in colic, was reduced after treatment, and a significant increase in the rate of subpopulations which protect against colic was also observed in comparison to placebo.⁽³³⁾

The observed increase in the relative abundance of potentially pathogenic enterobacteria in colicky babies may facilitate intestinal hypersensitivity due to their endotoxins, whilst also increasing the amount of intestinal gas, and thus, bloating and digestive discomfort. Also, an association between infant colic and a decrease in the relative abundance of protective bacterial groups such as *Bifidobacteria* or *Lactobacilli* has been pointed out by independent research groups.



Martina Della Vedova (BSc, M.Sc, CNMDip NT, mBANT, CNHCreg) obtained a Masters in Functional Genomics in Italy and trained as a Nutritional Therapist in London. She has worked for NaturesPlus as a Nutritional Advisor since 2016 and also sees clients privately.

A taste of tofu

Discover Bonnie Chung's range of versatile plant-based recipes with tofu at the heart.



Tofish seaweed nuggets



Baked matcha tofu cheesecake



Spinach and coriander masala tofu



Tofish seaweed nuggets

These little matchbox-sized tofu nuggets, hugged around with toasted seaweed, are laced with the taste of the sea. I often serve them with roasted potato wedges as a pleasing chippie alternative; add tartare or horseradish sauce as a dip for the full experience!

Serves 2 as a main course, or 4 as a side dish or starter

Ingredients:

- 400g/14oz firm tofu, cut into 10-12 chunky matchbox-sized pieces, about 1cm/½ in thick, drained
- 4-5 sheets nori
- 100ml/3½ fl oz/scant ½ cup light soy sauce
- 2 garlic cloves, finely grated
- Sunflower oil, for deep-frying
- 100g/3½ oz/¾ cup plain flour (all-purpose flour)
- 170ml/6fl oz/¾ cup ice-cold sparkling water

Method:

- Wrap each piece of tofu with strips of nori seaweed of the same width, so that the tofu piece is completely covered. Arrange in a baking dish.
- Make the marinade by mixing together the soy sauce and garlic. Pour the marinade over

the tofu and rest in the refrigerator for two hours.

- Heat enough oil for deep-frying in a large saucepan or wok. As always when deep-frying, be very careful and do not leave the kitchen or take a telephone call. The oil should come no more than one-third of the way up the sides of the pan.
- In another bowl, mix together the flour and ice-cold water to make a batter.
- Once the oil is hot enough at 170°C/340°F (a cube of bread will brown in 30 seconds), lift each piece of seaweed-wrapped tofu with tongs or chopsticks, dip into the batter, then deep-fry in the hot oil until golden brown, about two minutes on each side. Depending on how big your pan is, try not to fry more than three pieces at a time, or to crowd each piece too much.
- Drain each piece on kitchen paper (paper towels). Great with tartare sauce or horseradish sauce, or simply ketchup!



BAKED MATCHA TOFU CHEESECAKE



SPINACH AND CORIANDER MASALA TOFU

Baked matcha tofu cheesecake

A fun tofu take on a much-loved classic. The matcha tiger stripes bring a little drama, as well as bitterness against the familiar creamy body, while the tofu provides a smoothness that just melts in the mouth. One to impress your guests!

Serves 8

Ingredients:

For the base:

- 75g/2¾ oz/scant ¾ stick unsalted butter, plus extra for the tin
- 150g/5½ oz digestive biscuits (graham crackers)

For the filling:

- 500g/1lb 2oz/2¼ cups cream cheese
- 2 large eggs, lightly beaten
- 175g/6oz/generous ¾ cup caster sugar (superfine sugar)
- 1 vanilla pod (vanilla bean), split lengthways, seeds scraped out
- tsp lemon juice
- 350g/12oz firm tofu, drained for 20 minutes and patted dry
- 5tsp matcha green tea powder

Method:

- Preheat the oven to 180°C fan/ 200°C/400°F/gas mark 6. Butter the base of a 23cm/9in springform cake tin and line it with baking paper (parchment paper).
- Place the biscuits in a sealed bag and crush with a rolling pin to fine crumbs, or simply use a food processor.

- Melt the butter in a small saucepan and add the biscuit crumbs, stirring to combine. Press into the base of the prepared tin in an even layer, flattening it with your fingers until it is smooth.
- Bake in the oven for 10 minutes until golden, then leave to cool.
- In a large bowl, whip the cream cheese until smooth and creamy, then beat in the eggs. Add the sugar, vanilla seeds and lemon juice and mix well.
- Blitz the tofu in a food processor to a hummus-like consistency, then add it to the cream cheese mix.
- Spoon about 250g/9oz/1 cup of the mix into another bowl and sift in the matcha powder to avoid lumps. Mix thoroughly until totally smooth.
- Pour half the pale tofu mix into the cake tin on the biscuit base to create an even layer, then add blobs of half the matcha mix in a square formation on top. Repeat with the remaining plain tofu mix and then with the remaining matcha mix.
- To create the marbled pattern, use a knife to run through the top of the green blobs in straight lines.
- Bake for 10 minutes, then reduce the oven temperature to 160°C fan/180°C/350°F/gas mark 4 and bake for a further 45 minutes. Once the cooking is complete, turn the oven off, open the door of the oven and leave the cheesecake inside for one hour before serving. Keep it in the refrigerator and enjoy within three to four days.



TOFISH SEAWEED NUGGETS



SPINACH AND CORIANDER MASALA TOFU

Spinach and coriander masala tofu

This chilli chutney is sublime. I always make extra to perk up a veggie soup or add more heat to a curry. Slathered on tofu and griddled, it is inspired by an amazing paneer dish I enjoyed in Delhi. The spices linger, but it's gentle and warming rather than chilli hot. Giving tofu the Indian treatment is a no-brainer as it holds up well against bold, contrasting flavours. This dish is an easy, prep-ahead meal for the next day, and, if skewered, can also bring a spicy twist to a barbecue. Choose a firm tofu so that it does not crumble when skewered or stir-fried.

Serves 4 as a stir-fry/6 large skewers

Ingredients:

For the tofu:

- 500g/1lb 5oz firm tofu, drained for 20 minutes and pressed
- 2 small onions, cut into wedges
- 1 red pepper (bell pepper), if making skewers
- 200g/7oz/7 cups fresh spinach, if making a griddled or fried dish

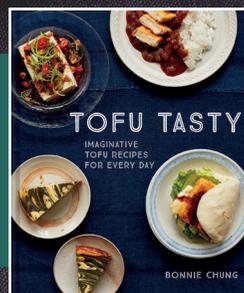
For the marinade:

- 2 small green chillies, seeds left in
- 6 garlic cloves, finely chopped or grated
- 2 handfuls of fresh coriander (cilantro), finely chopped, plus extra to serve
- 2tsp ground coriander
- 2tsp garam masala
- 2tsp sea salt flakes
- 1tsp ground turmeric
- 2tbsp Greek yogurt

- 100ml/3½ fl oz/scant ½ cup vegetable oil, plus extra (optional) for cooking

Method:

- Finely chop or blend the chillies, garlic and chopped coriander to create a paste, then mix with all the other marinade ingredients in a box or bowl with a lid.
- Cut the tofu into equal-sized cubes and the red pepper (if using) and onion into pieces of a similar size. Gently stir them into the marinade and leave overnight, or for at least eight hours, to let the flavours really do their work.
- If you are cooking on a griddle pan (grill pan) or in a frying pan (skillet), simply heat up the pan with a little drizzle of oil and sear the tofu and onion on all sides, using kitchen tongs to turn the pieces individually. Add the spinach to the pan two minutes before serving. If you are cooking on a barbecue, skewer the tofu pieces with the red pepper and onion alternately and cook them for three to four minutes on each side.
- Scatter with more coriander before serving, and enjoy with fresh salad.



Tofu Tasty: Imaginative tofu recipes for every day, by Bonnie Chung, published by Pavilion Books. Image credit: Yuki Sugiura.



TOFISH SEAWEED NUGGETS



BAKED MATCHA TOFU CHEESECAKE

The experts in essential fats

With many developments taking place at MINAMI in the last couple of years, the brand is well-placed to support practitioners.

Omega 3 as a category is a big and busy one, and, with consumers beginning to understand the importance of the need for healthy fats, it's one that is set to continue its upward growth trajectory.

One brand that has long been in the category – and would be considered one of the leading voices in the omega 3 field – is MINAMI. And it is a brand heavily committed to nutritional therapists, seeing this avenue as key in delivering its important message.

Agata Matuszewska, Brand Manager at Nestlé Health Science UK, which owns MINAMI, commented: “The practitioner sector lies at the core of MINAMI's brand identity – to deliver the highest-quality products, that are backed in science and can genuinely help improve people's lives. Practitioners' knowledge and recommendation can help their patients make informed choices and reach for MINAMI products that we know deliver on its promise. We are working on building a

community around our brand and create a family, catering to patients' and practitioners' needs.”

And it's been a busy time of late at the ever-evolving brand, with Agata adding: “A lot has happened for MINAMI in the past two years. In 2019, the packaging was changed completely, however, the quality of our portfolio remained the same. MINAMI is still an omega 3 brand of superior purity and strength, committed to delivering innovative, best-in-class omega 3 supplements for people across all lifestyles and life stages.

“We had a couple of new product launches, including Omega-3 + CBD, Liquid Kids and Liquid Adult. And the MINAMI family grew by four new people in the brand team, who work hard together on this exceptional range. But our family are not only work colleagues, they are a number of high-profile influencers and key opinion leaders we partnered up with last year, and continue into 2021, to help educate and spread the word about the benefits of omega 3.”



HEALTH TRENDS

We know that the last year or so has been unprecedented in the natural health industry with the Covid-19 pandemic and the demand for supplements this brought.

MINAMI has certainly experienced this, with Agata commenting: "Immunity remains one of the strongest trends, so products that help support immunity are definitely seeing an uplift. In the MINAMI range, Platinum Elite, Adult Liquid, as well as products for kids, MorEPA 6+ and Liquid Kids contain vitamin D3, which is proven to support immune function.

"Everything that is related to joint health, mobility and sports also remains top of the trends list, as an increasing number of people realise being active is key to a long and healthy life. For the same reason, overall, the supplements category is doing well and growing, as people search for ways to prevent health conditions early on and help support their overall wellbeing."

Best known as a leading omega 3 brand, MINAMI has developed its portfolio in recent years to really cater to a wider range of needs and has been committed to driving innovation.

Agata added: "Three new products were launched in the past two years: Omega-3 + CBD, Liquid Kids and Liquid Adult. CBD + Omega-3 is specially developed to synergise the benefits of these two extraordinary ingredients. Liquid Kids and Liquid Adult are, on the other hand, both completely new products to the MINAMI range. Liquid is the best way to serve omega 3 to children, and our product is additionally in a delicious orange and berry flavour liquid, as well as fortified with vitamin D3 to help support immunity.

"Adult Liquid offers our highest omega 3 concentrations and has added vitamin D3 to help support immunity too. MINAMI will continue to innovate and delight consumers with the superior quality and purity of its products."

BRAND POSITIONING

Omega 3 is a big category, and one with varied product quality. As practitioners, how do you know what represents a good product and how does MINAMI set itself apart in this regard?

"MINAMI is one of the highest-concentrated omega 3s available, so you get more omega 3 nutrition per softgel, which means fewer capsules to swallow," Agata advised.

"This is all thanks to the supercritical CO2 extraction process used to extract the fish oil we use, which helps to remove contaminants, unwanted fluids and unsaturated fatty acids, leaving behind purer omega 3. We don't just meet European standards, we exceed them. Higher purity means you'll be getting more of what you need, and less of what you don't.

"On top of that, our experts combine carefully selected ingredients with precise ratios of EPA and DHA, to create specialised products for different needs and lifestyles. Other ingredients across our product range include CBD, antioxidant curcumin from turmeric and a variety of essential vitamins, all of which are sustainably sourced."

This sustainability message is also important as fish oil has been a cause for concern in the past.

"All our fish oils come from small fish species that aren't endangered, including sardines, anchovies and mackerel. We source these from the fresh waters of the Pacific Ocean close to Chile and Peru, where overfishing is not an issue. We're proud to have been certified by Friend of the Sea for our work," Agata pointed

out.

And what is the extraction process the brand goes through to ensure a superior product?

Agata explained: "Under pressure and at lower temperatures than other methods, CO2 (supercritical CO2) acts as a fat-solving solvent that pulls out the omega 3 fatty acids from the fish oil. This hexane-free extraction is innovative, as it removes the two essential fatty acids, EPA and DHA, without altering their quality and maintaining their chemical integrity. It also separates out the toxins and unwanted fats which are also found within the fish oil. It is a patented extraction method and MINAMI is the only fish oil on the market in the UK to use this type of extraction."

That then brings us onto another important factor – that is purity.

"Most of MINAMI's competitor brands use less advanced omega 3 extraction processes, which means their products can contain heavy metals, solvents, fillers, saturated fats and toxins. These are what our bodies don't need," Agata advised.

Concentration is also important; MINAMI contains up to 95 per cent omega 3 per softgel.

Agata added: "It also means you need to swallow fewer capsules, which is important, especially for children. All MINAMI products have natural flavours added, which means they don't leave you with a fishy aftertaste. Our experts work hard to create specialised products for different needs and lifestyles, so you can get a tailored solution to every health need."



I-Mag giveaways



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



Nutri Advanced Immune Protect

Combining vitamins C and D with minerals, zinc and selenium, and the flavonoid, quercetin, Immune Protect is an essential formula for supporting the body's natural immune defences. The one-a-day formula provides nutrients in optimal forms that are well-absorbed and at levels that are ideal for ongoing, long-term use. Suitable for adults and children over the age of 10, it is a convenient immune support for the family all year round.

I:Win: We have 25 60-capsule packs, RRP £18.95, to give away.

Bio-Kult Brighten



Have you heard about the latest product, Bio-Kult Brighten? With the same great original 14 strains, it's been designed to bring out your inner smile. With added vitamins B6 and B12, it contributes to normal psychological function, as well as the reduction of tiredness and fatigue. It also contains vitamin D and zinc, which, alongside vitamins B6 and B12, contribute to the normal function of the immune system. Enter to win a pack of Bio-Kult Brighten and a fantastic gratitude diary.

I:Win: We have one to give away.

POSITIVE SCIENCE PEOPLE ACTIFLEX GUT HEALTH

Actiflex Gut Health, from Positive Science People, is a unique supplement combining 18 scientifically researched nutrients and herbal extracts.



This mix of premium ingredients provides holistic digestive support, promoting gastrointestinal function, integrity, and immunity. It's a comprehensive, affordable, all-in-one formula, developed for high client compliance, and includes the probiotics (two billion CFU), *Bifidobacterium Bifidum*, *Lactobacillus Acidophilus*, and *Lactobacillus Casei*, prebiotics, aloe vera, apple pectin and soothing botanicals, milk thistle, liquorice root (DGL), slippery elm, nettle leaf, chamomile flower, ginger root, marshmallow root, and fenugreek. It also contains amino acids and flavonoids, L-glutamine and quercetin, and minerals and enzymes, bromelain, MSM, zinc and L-carnosine.

I:Win: We have four 120-capsule bottles to give away

BODYBIO BUNDLE



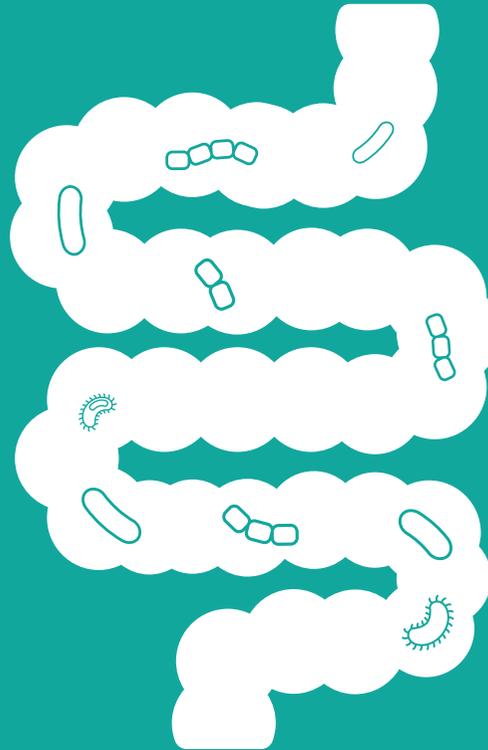
This immunity bundle from BodyBio has what you need to fight off ailments that can slow you down and is made up of Liposomal CC, Butyrate, and Zinc. BodyBio's liposomal technology significantly increases your absorption of this essential nutrient as compared to traditional vitamin C. Butyrate is a short chain fatty acid that signals to the immune system when immune defenses need to increase, while zinc is essential for immune function, growth and repair of the body and is a co-factor of over 100 enzymes.

I:Win: We have five bundles to give away.



ADVANCED PRO-VEFLORA™

60 CAPSULES • 500MG PER CAPSULE



14 STRAINS

OF ADVANCED LIVE CULTURES

VEGAN

AND DAIRY FREE

50 BILLION

LIVE ORGANISMS PER GRAM

★★★★★ **OUR MOST POPULAR PROBIOTIC EVER** ★★★★★

AVAILABLE DIRECTLY FROM G&G VITAMINS OR THROUGH THE NATURAL DISPENSARY

www.gandgvitamins.com • 01342 312811