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MAY/JUNE 2021

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Skin conditions and the  
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# Welcome



The last few weeks have brought a distinct shift in the nation's freedoms, with the high street now reopened, outdoor hospitality allowed to operate again, and tentative steps being made forward for the resumption of events, large and small.

The cessation of any kind of in-person event in the last year has been difficult for our industry, so used to meeting in person to learn and network. Here at *Nutrition I-Mag*, we are proud to be associated with the IHCAN Conferences, the go-to event series for Nutritional Therapists seeking superior educational events. When the pandemic struck, it meant all our events had to be cancelled, but quickly, the team reacted and developed a series of virtual events, allowing practitioners to continue accessing the

quality education they expect from the IHCAN Conferences, but in a digital environment.

While these events won't replace our in-person events in the long-term, they have provided a stop gap for you as practitioners and students, and we are delighted to be hosting our IHCAN Summit in this format in June, before we anticipate bringing back our first in-person event of 2021 in September. Keep an eye out at [www.ihcanconferences.co.uk](http://www.ihcanconferences.co.uk), where we will continue to update.

And so to this issue, and there's much in the edition to support you in your studies. We place the focus on our joint and bone health, on male nutrition, and skin conditions, and we also bring you an in-depth guide to plant-based nutrition. Not only that, but we catch up with the team at Bionutri, we have a selection of giveaways, and offer up some good-for-you recipes.

And finally, don't forget that the BioCare Graduation Award, in association with *Nutrition I-Mag*, remain open for entries. We're delighted to be working with BioCare on this initiative and encourage all students who are eligible to apply. **Click here** to find out more.

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](mailto:info@targetpublishing.com) [www.nutritionimag.com](http://www.nutritionimag.com)

## Meet The Team

**EDITOR** Rachel Symonds **CONTRIBUTORS** Dr Trygve Bergeland, Jo Sharp, Colette Healy, Dr Marilyn Glenville  
**SALES & PUBLISHING DIRECTOR** Ruth Gilmour e: [ruth.gilmour@targetpublishing.com](mailto:ruth.gilmour@targetpublishing.com) **KEY ACCOUNTS DIRECTOR** Abigail Morris e: [abigail.morris@targetpublishing.com](mailto:abigail.morris@targetpublishing.com)  
**SALES MANAGER** Maria Francis e: [maria.francis@targetpublishing.com](mailto:maria.francis@targetpublishing.com) **DESIGN/PRODUCTION**  
 Annabelle Duggan e: [annabelle.duggan@targetpublishing.com](mailto:annabelle.duggan@targetpublishing.com)  
**MARKETING DIRECTOR** James Rix e: [james.rix@targetpublishing.com](mailto:james.rix@targetpublishing.com)  
**ACCOUNTS** Lorraine Evans e: [accounts@targetpublishing.com](mailto:accounts@targetpublishing.com)  
**MANAGING DIRECTOR** David Cann e: [info@targetpublishing.com](mailto:info@targetpublishing.com)

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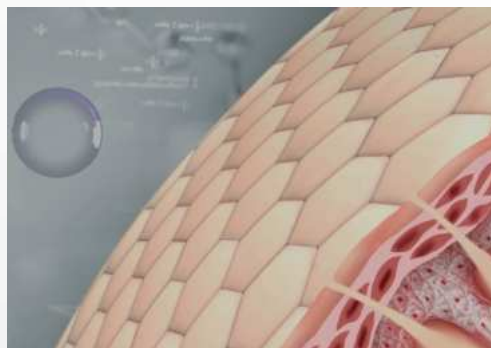
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## The BANT AGM & Conference 2021

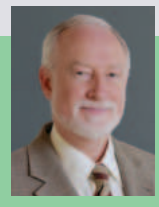
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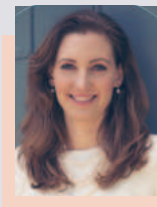
Jeffrey Bland,  
PhD



Dr Samel Yanuck



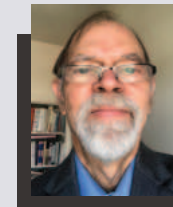
Dr Deanna Minich,  
PhD



Robyn Puglia,  
NT



Aristo Vojdani,  
PhD



William Grant,  
PhD



Patrick Holford,  
BSc, DiplON

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# OUR CONTRIBUTORS

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



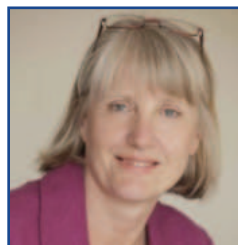
**Dr Trygve Bergeland**

Dr Trygve Bergeland is Vice President Science and Product Development at Kappa Bioscience AS, a Norwegian company and global provider of vitamin K2 as all-trans MK-7. Kappa Bioscience continually invests in R&D and manufacturing processes to offer best-in-class, cost-effective solutions to develop the vitamin K2 world a little further every day.



**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 16 internationally bestselling books, including *The Natural Health Bible for Women*. Dr Glenville runs clinics in Harley Street, London, Kent and Ireland by phone and Skype.



**Andrea Burton**

Andrea Burton BSc (Hons), DipNT, mBANT, CNHC is a BANT Registered Nutritional Therapist, graduating from the College of Naturopathic Medicine in 2017. She set up her own practice and, after gaining an NTEC in Nutrition & Cancer, specialises in nutrition to support cancer. She is a member of the British Association of Nutrition and Lifestyle Medicine and accredited by the Complementary and Natural Health Care Council. She is Technical Advisor at ADM Protexin, manufacturers of Bio-Kult and Lepicol.



**Jo Sharp**

Jo Sharp is a BANT registered Nutritional Therapist with a focus on neuroendocrine health. She runs an online and London-based nutrition clinic and is the Nutritionist for Minami.



**Dr Hogne Vik**

As a physician and researcher at Haukeland University Hospital, Bergen Norway, Dr Hogne Vik, MD, PhD, MBA specialised in clinical laboratory medicine and immunology/allergy. He has a long and successful track record in both the pharmaceutical and dietary supplement industries. Dr Vik currently serves as the Chief Medical Officer with NattoPharma ASA, the world leader in vitamin K2 research and development, and exclusive supplier of MenaQ7.

# News Bites

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



## BEE HEALTH ANNOUNCES IT HAS BEEN ACQUIRED BY GLOBAL NUTRITION BUSINESS

**T**he supplements manufacturer, Bee Health, has been acquired by the global nutrition and wellness business, INW.

US-based INW (Innovations in Nutrition + Wellness) is a leader in custom R&D, manufacturing and marketing support solutions for global brands that serve the fast-growing nutrition and wellness industry. In a simultaneous transaction, INW was acquired from Rosewood Private Investments by a group of investors led by private investment firm Cornell Capital LLC. Terms of the transactions were not disclosed.

Bee Health was founded by Steve and Bea Ryan in 1992 as a specialised producer of bee-derived nutritional ingredients and was joined two years later by entrepreneur, Jan Fletcher OBE. From its state-of-the-art facility in East Yorkshire, the company now employs over 350 staff and specialises in producing tablets, capsules, liquids and softgels for some of the largest global brands in more than 40 countries.

With manufacturing operations across four US States, INW has experienced rapid growth and has a proven track record of successful acquisitions in multiple health and wellness categories. INW and Bee Health's highly complementary product capabilities and geographic scope will further enhance the services provided to brand partners, a statement said.

Jan, Bee Health Chairman, commented: "INW's and Cornell Capital's interest in Bee Health is a testament to both the strength of the company we have built and the significant value creation potential ahead. Bee Health has seen virtually uninterrupted growth over the last decade as we have expanded our highly diversified customer base and grown our market share to become the UK's leading industry player.

"With an incredible team of dedicated employees, we have built a leading UK manufacturing business that will now form a key part of an ambitious global company. The partnership with INW will place Bee Health at the forefront of the health and wellness market and Steve and I could not be prouder and more excited about the future of the company."

Steve added: "After 27 years of innovation and development, we are delighted to find the right partners with

a shared vision that will further assist our growth. I'm confident that our partnership with INW gives Bee Health enormous potential."

Chief Executive Officer of Bee Health, Lewis Ryan, continued: "We look forward to continuing to build on our incredibly strong momentum as we partner with INW and Cornell Capital to bring together these two highly complementary businesses for the benefit of all stakeholders."

And Gary Giles, Chief Executive Officer of INW, concluded: "Today's announcements are an exciting next step in our journey. Our partnership with Bee Health is a key advancement in our ongoing efforts to expand our product offerings, broaden our geographic footprint and expand and diversify our customer base. The combined company will benefit from Cornell Capital's expertise and world-class resources, ensuring we are better positioned than ever to deliver on our mission of being the world's best solutions partner to the global nutrition and wellness industry."

As part of the transaction, Bee Health's shareholders have become equity partners in INW and Jan has joined the Board of Directors of the parent company, INW Global.



Lewis Ryan (left) and Steve Ryan

## COVID-19 TRIGGERS CHANGE IN SHOPPING HABITS TO CUT WASTE

New research has revealed that UK grocery shopping habits have changed dramatically to combat food waste.

The lifestyle changes UK consumers have made to reduce food waste since the start of the pandemic include that almost two-thirds (63 per cent) are more likely to shop more often and in smaller quantities to avoid having to throw away unwanted or spoiled food, and a similar number (67 per cent) are now likely to buy more frozen food for the same reason, and three-quarters (76 per cent) suggest they are prepared to buy the 'ugly' fruit and vegetables that so often sit unwanted on the supermarket shelf.

When asked where the responsibility for food waste primarily lies, UK shoppers felt it was a matter for them personally: 42 per cent said it was down to consumers to do the right thing, twice as many (21 per cent) as those who thought the responsibility lies with grocers and supermarkets.

The survey of more than 1,000 UK adults was commissioned by Proagrica, which also highlighted the growing number of UK consumers who take ethical considerations into account when buying food. Almost a third (32

per cent) say the ethical credentials of retailers and producers (for example, certification, where food is sourced, field to fork tracking) influence their purchase choices whenever possible. In addition, 71 per cent say they're more likely to try and reduce 'food miles' by buying more locally-sourced produce.

Graeme McCracken, Managing Director at Proagrica, commented: "The UK, like many countries, faces a serious food waste challenge and this research shows that consumers are changing their shopping habits accordingly. They're shopping more often, in smaller amounts, and buying more frozen food that will stay edible for longer.

"Even though many consumers feel it's down to them to throw away less food, businesses in the food and agriculture industries need to do their part. They need to actively show they are working together to make their operational processes more transparent and more efficient. That can also help them demonstrate their ethical credentials, which is another factor that heavily influences what people buy and from where."

## Support tools launched to promote healthy nutrition in workplace

New tools have been launched by The Consumer Goods Forum and Global Alliance for Improved Nutrition to develop healthy nutrition in the workplace.

With one in three people worldwide suffering from malnutrition, and with the health impacts of Covid-19 bringing heightened concerns to businesses, employers are increasingly investing in the nutritional health of employees. And now, a new set of innovative digital tools and resources has been launched to support and guide employers to maximise the benefits to their business and employees' wellbeing.

Through the Workforce Nutrition Alliance, its founding partners, The

Consumer Goods Forum (CGF) and the Global Alliance for Improved Nutrition (GAIN) have developed online assessment and planning tools for employers to use in developing or enhancing their workforce nutrition programme. The tools are built on a four-pillar framework that supports healthy food at work, nutrition education, nutrition health checks and breastfeeding support.

"We are delivering these new tools at an important moment in time – when Covid-19 is threatening the health and wellbeing of workers worldwide. By helping to bring healthier eating to employees at their workplace, we bring in a strategy for scalable success that can reach millions of people worldwide and have a powerful impact on fighting malnutrition globally, while protecting frontline workers and supporting our economies during these uncertain times," explained Lawrence Haddad, GAIN Executive Director.

Employers can now visit [www.WorkforceNutrition.org](http://www.WorkforceNutrition.org) to access the free online self-assessment and scorecard tool. The Workforce Nutrition Alliance is also developing an accompanying implementation support programme that will provide employers with access to leading technical experts that can guide them in putting their enhanced workforce nutrition programme into action.

The Alliance is also supported by a growing list of companies, including Ajinomoto, A.S. Watson, Bel Group, Google, Grupo Éxito, Mars Incorporated, Migros Ticaret, Olam International and Unilever.



## Prebiotic category forecast for exponential growth

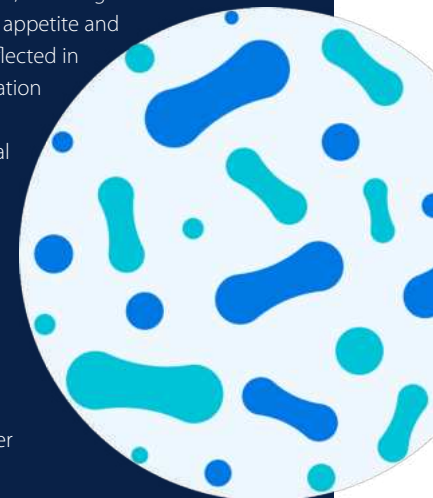
The global prebiotic category is on the cusp of exponential growth, according to an industry supplier.

Clasado Biosciences, which manufactures the galactooligosaccharide (GOS) prebiotic ingredient, Bimuno, has shared insight on increasing consumer awareness of the benefits of prebiotics and the upswing in demand from key players in the health and nutrition categories.

Per Rehné, CEO at Clasado, commented: "Consumers are now better connected with their physical health – now being proactive more than reactive. It's really no surprise that gut health is surging to the top of the public agenda. The inclusion of prebiotic ingredients in a wide range of foods and supplements is on the up and will only accelerate from this point. All signs point to exponential growth for the prebiotics market and significant opportunities for brands.

"Global Market Insights predicts a very solid 8.5 per cent global CAGR for prebiotics until 2024, but by all accounts, it is likely to surpass this. This acceleration is a perfect example of the right technology, connecting with the right market, at the right time.

There is real market appetite and we're seeing this reflected in new product innovation from some of the biggest international brands. We're only just scratching the surface of what prebiotics are capable of in terms of capturing consumer attention and unlocking fundamentally better gut health."







## Nutrition I-Mag publisher turns 21

Target Publishing, the well-known publisher and event organiser and publisher of this magazine, is marking 21 years in business.

The company publishes *Nutrition I-Mag* and *Integrative Healthcare & Applied Nutrition (IHCAN)* magazines, along with other natural health titles, *Health Food Business*, *Natural Lifestyle*, *Organic & Natural Business* and *Functional Sports Nutrition*. Target Publishing is also the organiser of the popular IHCAN Conferences and the Natural Health Trade Summit.

Despite challenging trading conditions caused by the pandemic, Target Publishing continues to flourish, as founder and Managing Director, David Cann, explained: "The ever-changing challenges the pandemic pose continue, but by evolving our business, our team have ensured our events continue to succeed – with over 2,500 delegates hosted virtually over the last six months and a portfolio of magazines we continue to publish on-time, every time."

Kate Cook, owner of the Nutrition Network, a group of more than 2,000 nutritional therapists, added: "Congratulations to Target Publishing on 21 years' service. The IHCAN brand, in both its magazine and conference, remains as strong as ever – and its unique brand of education is unparalleled."

Target Publishing will be celebrating with its loyal readers, advertising and exhibitors at its live events when safe and appropriate to do so. For more information, visit [targetpublishing.com](http://targetpublishing.com)

## NEED FOR HARMONISED REGULATION OF NATURAL COSMETICS, SURVEY FINDS

A new survey has suggested there is a need for better, harmonised regulation of natural and organic claims on cosmetics in Europe to prevent greenwashing.

NATRUE commissioned a consumer online study earlier this year that surveyed over 2,000 consumers in Germany and France to evaluate attitudes on 'naturalness' in the beauty market, brand perception and the risk of greenwashing, and performance of cosmetic certification seals and logos.

In Germany, where the organic beauty market is very established, 37 per cent indicated they had used a natural/organic cosmetic in the last six months, compared to 27 per cent in France. Naturalness was flagged as the most important aspect for consumers when considering the purchase of beauty products, the second most important being skin compatibility. In Germany, 'naturalness' accounts for 20 per cent of the decision-making process. Although this percentage is higher in France (24 per cent), the use of nature-inspired brands in France is more than twice that of authentically natural brands.

When asked which aspects best defined 'naturalness', German and French consumers highlighted 100 per cent natural/organic ingredients as the most important factor, closely followed by animal welfare. Whether a product is vegan was more relevant to French consumers. Products free from microplastics mattered more to German consumers.

The study also found that consumers willing to buy natural/organic cosmetics risk being misled by marketing plays from nature-inspired brands,

and that there will be more fragmentation in the market as conventional market leaders increasingly launch sub-brands whose products lines are a mix of nature-inspired or even certified natural/organic.

Consumers are increasingly confused about the variety of claims, logos and seals in the cosmetic market; 61 per cent of consumers in Germany and 71 per cent in France see labels alone as insufficient to indicate if a product is really natural.

NATRUE said that the take-home message is that consumers recognise that greenwashing is happening and feel there is not enough regulation in place to prevent it. On-pack certification seals can help consumers steer through the greenwash and have more confidence at point of sale that they are buying a genuinely natural or organic beauty product that meet their expectations and demands.



## Latest data from COVID-19 REACT-1 study reveal continued fall in infections

The results of one of the largest studies into Covid-19 infections has been published.

Findings from the 10th report of REACT-1, one of the country's largest studies into Covid-19 infections in England, have been published by Imperial College London and Ipsos MORI. More than 140,000 volunteers were tested with PCR tests between March 11-30 to examine levels of infection in the general population. The data shows infections in England fell by 60 per cent since the last

REACT report (covering February 4-23). When compared to the findings from February, the sharpest drops in prevalence were seen in London and the South East.

The study observed the speed of this decline started to plateau from mid-March, reinforcing the need to continue to follow the rules as we progress down the roadmap. The study also found the correlation between prevalence of infections and deaths is diverging, suggesting that infections may have led to fewer deaths since the start of widespread vaccination.

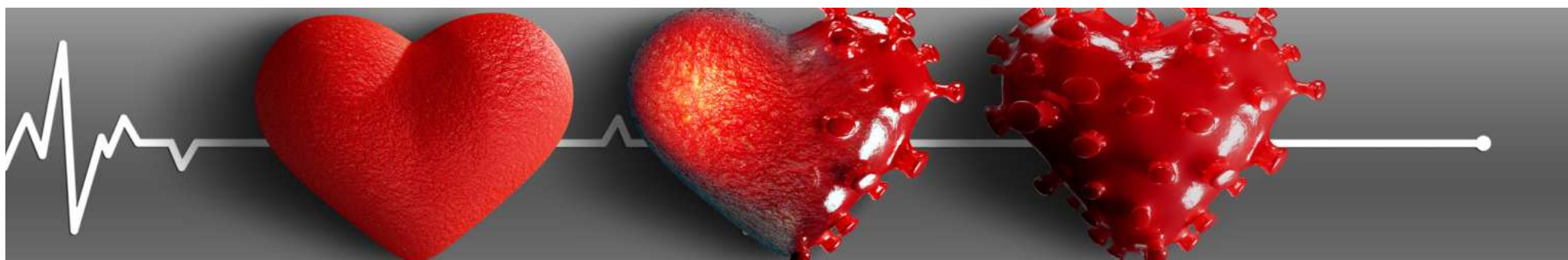
The main findings show there were substantial falls in regional prevalence from February to March and that the highest prevalence in March was in those aged five-12 at 0.41 per cent, compared with the lowest in those aged 65-74 and 75 and over at 0.09 per cent.

Kelly Beaver, Managing Director, Public Affairs at Ipsos MORI, commented: "Infection rates are expected to rise as we cautiously ease restrictions, and we have been clear that moving too fast, too soon through the roadmap risks putting unsustainable pressure on the NHS."



# In Research

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



## Grant announced for UK research into effects of Covid-19 on the heart

**H**ear Research UK has announced a grant for a University of Glasgow project investigating the effects of Covid-19 on blood vessels and blood pressure.

The project, which aims to better understand the effects that Covid-19 infection has on blood vessels and blood pressure, has received the funding of £250,000 from the national charity.

Research has shown that people who are older, obese, male or those who have other medical problems, including high blood pressure, heart disease, diabetes, cancer, or chronic lung conditions, have a higher risk of developing severe Covid-19. High blood pressure is a major risk factor for cardiovascular disease and is very common, with more than one quarter of adults in the UK affected.

The study, which will be led by Professor Sandosh Padmanabhan, Professor of Cardiovascular Genomics and Therapeutics, aims to answer whether high blood pressure makes Covid-19 infection worse and if so, why, if Covid-19 infection makes high blood pressure worse and if so, why, and that monitoring and management of high blood pressure

needs to be a greater priority during the pandemic.

The study will look at routinely collected health records for people in the west of Scotland who attended hospital or had a positive test for Covid-19 between April 2020 and April 2021. This will be compared to the records of patients who attended hospital during 2019 for another reason. They will also look in detail at a group of people with high blood pressure.

Professor Padmanabhan's team will also study a group of people that have recovered. They will undergo blood pressure monitoring, and tests of heart and blood vessel health. These tests will be repeated after 12 and 18 months to see if there have been any changes. They will be compared to a group of people who have not had Covid-19.

Finally, the study will look at markers in the blood (biomarkers) with the aim of identifying any which are linked with high blood pressure, cardiovascular disease or death in Covid-19.

Professor Padmanabhan explained: "The current Covid-19 pandemic, caused by the SARS-CoV-2 virus, has exposed unexpected cardiovascular

vulnerabilities at all stages of the disease. The mechanism by which the SARS-CoV-2 virus causes infection is believed to directly and indirectly affect the cardiovascular system, potentially resulting in new-onset hypertension, heart failure and stroke and represents an insidious feature of long-Covid.

"The burden of hypertension as a consequence of the Covid-19 pandemic is unknown, but given the scale of the infection, especially among the young, this will be a major concern for the future. In this project, we plan to generate valuable evidence that will inform hypertension management strategies and reduce cardiovascular risk for survivors of Covid-19."

Kate Bratt-Farrar, Chief Executive of Heart Research UK, added: "We have known for some time that those with pre-existing cardiovascular conditions are more susceptible to developing severe complications from Covid-19. We hope that this research will help to explain why this is the case, reduce the risk for this vulnerable group and, ultimately, help to save more lives."



# Memory and menopause examined in new UK study

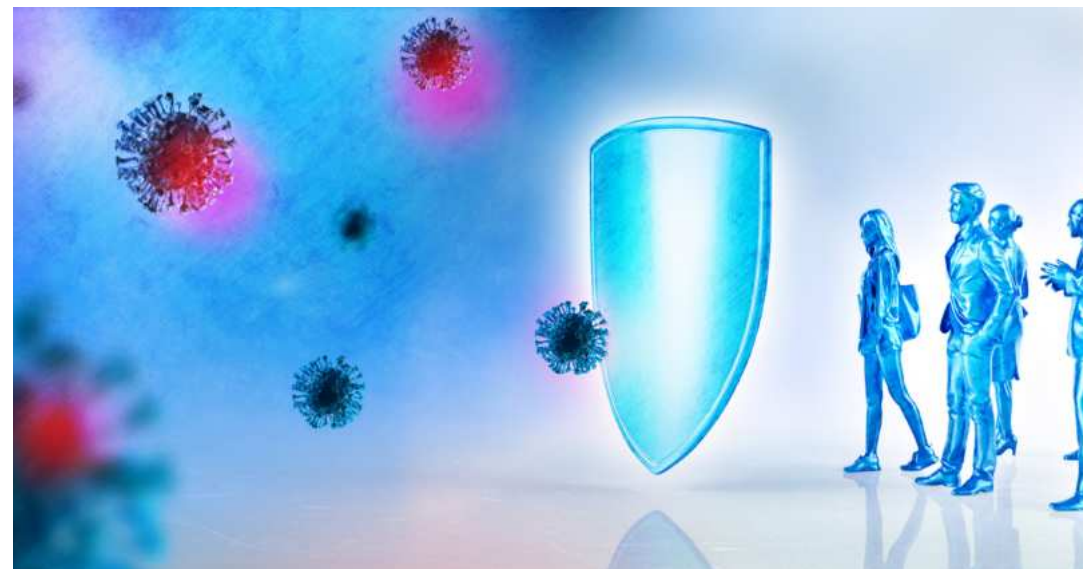
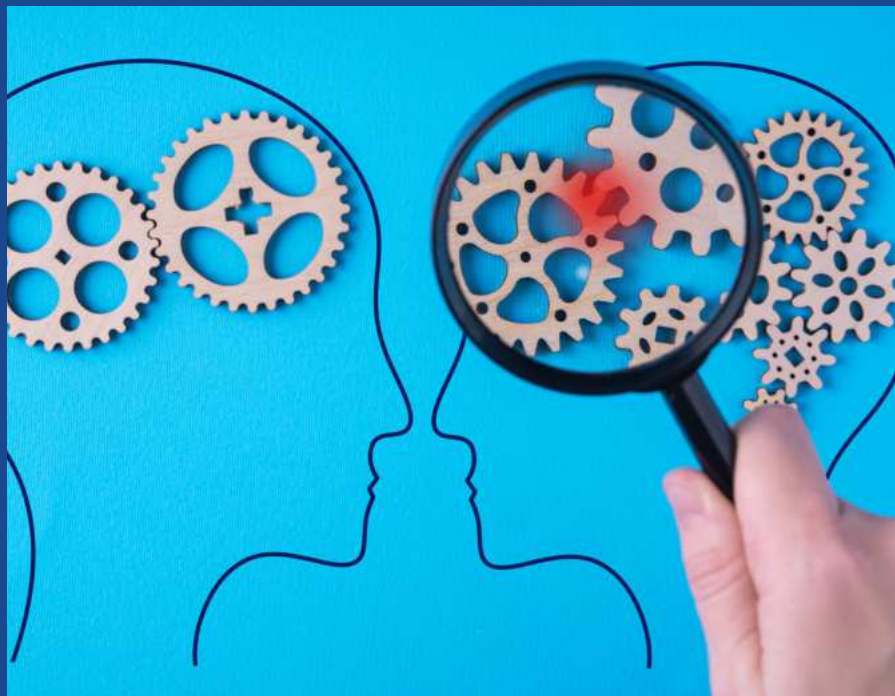
Researchers at Northumbria University are inviting women going through the menopause to take part in a new study investigating the power of rosemary on memory.

The team of researchers from Northumbria's Brain, Performance and Nutrition Research Centre and the University of Lancaster are investigating the benefits of using rosemary, a common herb, to improve memory and cognitive performance during the menopause transition.

The researchers are encouraging women aged between 45-60 who work either full- or part-time and are experiencing regular problems with their memory or concentration at work to take part in the new study. The participants will be asked to consume a rosemary product and complete short memory or cognition games on their mobile phone or internet-connected device over a three-month period. Participants will be asked to consume rosemary in one of two different ways, or they will be offered the most effective rosemary product at the end of the study.

Northumbria researchers have already conducted a number of studies that show rosemary can improve memory and alertness, but this is the first time they have examined the effect on women going through menopause.

The study is being funded by the Economic and Social Research Council.



# Long Covid sufferers display altered immune signature

A new peer-reviewed study has revealed a persistent alteration in the immune system of patients suffering with long Covid.

University of Manchester scientists discovered the alteration in the immune system of patients six months after they have been hospitalised for Covid-19, which could be associated with poorer health outcomes.

The study, published in the journal, *Med*, examined the impact of a SARS-CoV-2 infection on the immune system of hospitalised patients in the period after a Covid-19 infection, once they have been discharged. The team – based at the University's Lydia Becker Institute of Immunology and Inflammation and supported by the UK Coronavirus Immunology Consortium (UK-CIC) – identified an immunological signature occurring in some of the patients that was associated with unresolved chest X-rays, indicating those patients had a poorer clinical outcome.

The researchers therefore identified immune characteristics in convalescent Covid-19 patients are

associated with negative impacts on subsequent health.

The team compiled the immune cell characteristics of over 80 convalescent patients recruited from Manchester hospitals between July and October 2020 and found that changes to B cells – a type of lymphocyte – that occur during the peak of Covid-19 hospitalisation were largely restored by six months of convalescence. However, changes to T cells, another lymphocyte, persisted into Covid-19 convalescence.

Study author, Dr Joanne Konkell, from The University of Manchester, commented: "Our study details persistent immune alterations in previously hospitalised Covid-19 patients up to six months after hospital discharge. Significantly, we outline an immune signature associated with poorer clinical outcomes in convalescent patients.

"Association, however, is not a causation, and what we now want to understand is what other long Covid symptoms this signature could be associated with and whether it could be used to identify the patients that should be most closely followed after hospital discharge."





## BMI impacted by speed of eating, researchers suggest

Researchers believe that eating quickly leads to bigger waistlines and higher BMI in UK adults and children.

British adults are no different to children when it comes to the impact of fast eating on obesity, with new research from the University of Roehampton revealing that both adults and children develop larger waistlines and a higher body mass index (BMI) if they are quick eaters.

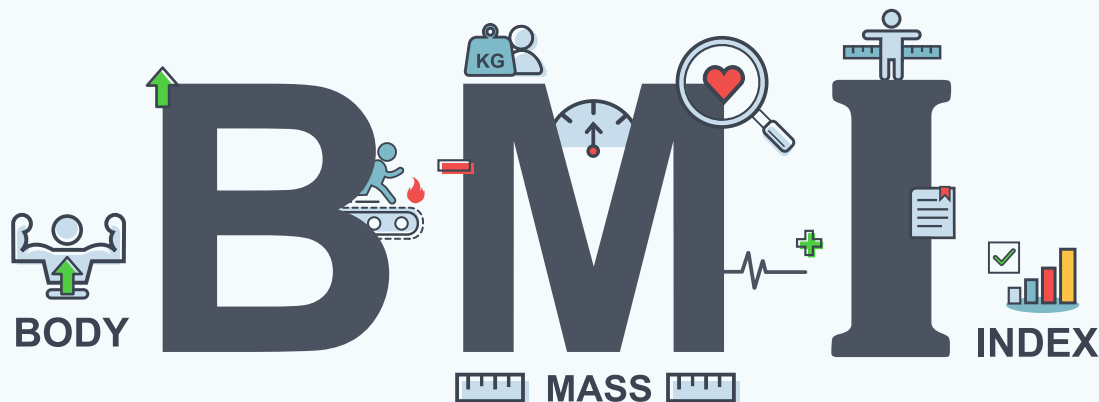
The study, carried out in collaboration with Bristol University, and published in the journal, *Clinical Obesity*, showed that quick eating rates resulted in bigger waistlines in both adults and children.

More than 800 adults and children in London took part in the research, which was based on a survey completed by participants providing their own self-reported eating rate, with response options ranging in a scale from very slow to very fast. Researchers recorded participants' height, weight, waist circumference and BMIs, measured under their supervision. Faster eating rate was significantly associated with a higher BMI and larger waist circumference in both

children and adults.

Dr Leigh Gibson, lead researcher on the study and Reader in the Department of Psychology at the University of Roehampton, explained: "What makes our research so significant is that it's the first to show definitively that eating quickly affects UK adults and children in the same way, with faster eaters consistently developing higher BMIs and larger waistlines.

"Previous studies that looked into the association between consuming foods at a fast pace and increased energy intake focused solely on children. However, by assessing both adults and children, we were able to debunk the notion that adults are immune from the effect of eating quickly on obesity that have been established in children. As such, guidance for preventing obesity in both children and adults needs to be revised to take into consideration not only the types, quality and quantity of foods consumed, but also the eating rate. By slowing down and taking longer to eat our meals, we can keep our waistlines and BMIs in check."



## ADM research expands into probiotic strain

ADM has called its latest research into its proprietary probiotic strain *Bifidobacterium lactis* BPL1 (CECT 8145) (BPL1) as a world first.

The company says it is a world first in elucidating a probiotic strain's mechanism of action. This refers to the specific biochemical interaction through which research shows its potential role in impacting biomarkers related to weight management and metabolic health, with evidence of it setting a new milestone for the understanding of probiotics.

"The publication of this new research is the result of more than 10 years of preclinical and clinical trials, demonstrating our commitment to using our scientific expertise to support innovations in the probiotic space," commented Daniel Ramón Vidal, ADM Vice President of Research and Development of the company's Health & Wellness business.

"We're excited to see how ADM can use this new evidence to support our partners in developing exciting new food, beverage and dietary supplement solutions."





# New to market

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

## New to Nutri

Three new products have been added to the line-up at Nutri Advanced.

Immune Protect is a new one-a-day formula designed to provide daily immune support, combining vitamins C and D with minerals, zinc and selenium, and the flavonoid, quercetin. 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.

Also launching is a new flavour for the MegaMag Muscleze powder; from April, the formula will now be available in cherry, alongside the original orange flavour. MegaMag Muscleze is a high strength magnesium powder, which incorporates malic acid, L-carnitine, creatine, glutamine and taurine to optimise mitochondrial energy metabolism and to regulate muscle and nerve function.

And finally, also new is Ashwagandha 500mg Capsules, which contains ashwagandha as KSM-66, a high potency extract. KSM-66 is a full-spectrum extract, meaning that all the natural constituents are present in their natural proportions. It has been extensively studied and there are many published clinical trials documenting its benefits. KSM-66 has been shown clinically to help reduce stress and anxiety and help to promote memory and cognitive function.



## HayMax develops range with multipack

Two new designs for its multipacks have been announced by HayMax.

In time for the 2021 hay fever season, the three for two triple tins of organic allergen barrier balms, exclusive to the independent channel, will feature a bright new colourful label, while the filled counter display units will now feature four of three varieties, instead of three of each plus tester pots.

HayMax founder and MD, Max Wiseberg, commented: "The attractive new tin label features the three colours of the popular varieties inside – the yellow Pure, orange Aloe Vera, and Lavender. The stylish tin is now plastic free to help with recycling, with paper labels replacing plastic ones on the aluminium tin – although we always encourage people to re-use the tin for storage of small items like paper clips or hairpins. We're also working on getting the pots plastic free too, but that's not so easy."



## PROBIOTICS RANGE ADDED TO SWEET CURES LINE-UP



Advanced 17 Probiotic Blend and Essential 9 Probiotic Blend, a blend of nine strains of friendly bacteria designed for everyday use to support a healthy gut.

Dave Smith, Design and Marketing Director at Sweet Cures, explained: "All strains of bacteria used in our UniBac products are backed by clinical studies which prove their effectiveness. This is important to us and our customers. Sweet Cures is a company that prides itself in providing the purest natural health food supplements available, made at the right dosage, with no unwanted additives."

A new range of probiotics including up to 17 live strains of bacteria backed by clinical studies has been launched by Sweet Cures.

The health food supplement manufacturer has built on the success of Sweet Cures Probiotic Blend Capsules and, in collaboration with DuPont, the new UniBac range contains a unique blend of friendly gut bacteria that are clinically proven to make their way down to the gut and support a healthy immune system.

The first two products launching are UniBac

## G&G FOCUSES ON MUSHROOM NUTRITION

Six organic mushrooms have been added to a new supplement from G&G Vitamins.

Organic Mushroom Blend comes in capsule format and features a range of mushrooms, which contain polysaccharides and beta glucans.

The blend contains chaga, which contains betulinic acid that induces mitochondrial apoptosis and inhibits the enzyme topoisomerase, essential for the unwinding and winding of the DNA strands in cell replication. It also boasts lion's mane, known mostly for cognitive support but contains many other properties and nutrients too, reishi, cordyceps, shiitake and maitake.



# A VIRTUAL VICTORY

We bring you the latest updates from the recent virtual IHCAN Conference, attended by hundreds of practitioners.

**W**ith 2021 well underway but in-person events still paused, the IHCAN Conferences returned with our third virtual event on Saturday, March 13.

Bringing together more than 750 practitioners to enjoy four headline speakers, four breakout sessions and seven exhibitors, the event was well-received by delegates and exhibitors alike.

The event began with Elaine Wilkins, ILM Accredited Wellbeing coach and CEO of The Chrysalis, who offered a welcome refresher on how to deal with post-viral fatigue, looking closely at a coaching-based integrated healthcare model that's designed perfectly to be delivered online to clients.

We then welcomed President of the Complementary Medical Association, Jayney Goddard, who inspired delegates with exciting strategies to grow their practices, with practical tips to take away which produce measurable results in patient volume, retention and overall practice profitability.

Kiran Krishnan then blew minds with his talk, The Microbiome's Control of Immune Function, which provided a review on the components of the immune

system, the kinetics of our immune response and the critical support and checkpoints managed by the microbiome. He explained how one of our most powerful tools when fighting invading pathogens is having a healthy microbiome – leaving delegates with specific action points that could be incorporated into practice straight away.

The day finished with Dr Ben Lynch, the best-selling author of *Dirty Genes* and President of Seeking Health. A previous headliner at the IHCAN Summit, Dr Lynch focused on cytokine storms – explaining why they happen, the underlying causes, tests to consider and how to treat them.

Just some of the comments from the evaluation forms included "Absolutely fantastic organisation", "As usual, a fabulous selection of speakers", "Fantastic event, amazing information, so easy to access" and "Very well presented and I really enjoyed the day".

If you missed a ticket, don't worry – you can catch up with the downloads, which include all the video recordings and presentation PDFs. Visit [www.ihcanconferences.co.uk/virtual-event-downloads](http://www.ihcanconferences.co.uk/virtual-event-downloads) for more information and to buy.





## A SNEAK PEAK

Exclusive to *Nutrition I-Mag* readers, here is a recording of Dr Tom Bayne's breakout session from March's virtual IH CAN Conference, Solving the Leaky Gut with Total Gut Restoration.



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# Breaking the barriers in male health

We know that men can be less active in seeking help for health concerns, and we also know rates of certain health issues – heart disease and depression being just two – can be higher in the male population. Here, experts discuss how you can support your male clients.

**T**he Covid-19 pandemic has served to highlight the gaps between men and women, with rates known to be higher among the male population. And away from infection data, statistics also reveal that men experience mental health issues to a greater degree, with rates of suicide also higher. Historically, men have also had higher incidence of heart disease, although this gap has narrowed in recent years.

What this tells us is while general health advice is similar for men and women, there are some very specific needs and concerns to be aware of in relation to male health.

Louis Soteriou, Dip(CNM), CNHC, Sales Executive and Nutritionist at NaturesPlus, commented: "The statistics show that the main issue regarding men's health compared to women is their health

literacy<sup>1</sup> and unwillingness to seek help, both with physiological health issues but also mental health issues.<sup>2</sup> Men are less likely to read the label when it comes to prescription medication, which is especially dangerous when buying online and also less likely to know the symptoms of severe disease which, in many cases, need to be caught early.

"Twenty-eight per cent of men compared to 19 per cent of women do not seek help for mental health issues and around 75 per cent of UK deaths from suicide are men.<sup>2</sup> More needs to be done to reduce the stigma in men about talking within certain issues and also to increase the understanding of the importance of health literacy."

Catherine Gorman, Nutritionist and Health Coach at Good



Health Naturally, continued: "Statistics show, on average, men die nearly four years earlier than women in the UK. According to the Men's Health Forum, one man in five dies before the age of 65. Across the UK, 19 per cent die before they retire, this rises to 22 per cent in Scotland.

"Possible reasons for this include diet, stress, exposure to risk and underuse of health services. Traditionally, men have had unhealthier lifestyles, and experienced higher rates of injuries compared to women. For example, three quarters of all road-traffic deaths occur among young men under the age of 25. Men are also less likely to acknowledge illness or seek help from a doctor or pharmacist compared to women. One survey discovered the top three reasons for ignoring health issues were being too busy, fearing the doctor might find a serious problem, or wanting to skip uncomfortable examinations like prostate checks."

She went on: "Heart disease is the leading cause of death for men in the UK. One in seven men die from cardiovascular disease, compared to one in 12 women; 1.6m men are living with the condition, compared to one million women. Each year, around 119,000 men have heart attacks, compared to 69,000 women. Risk factors include smoking, being overweight, high cholesterol or blood pressure and diabetes.

"One man in 10 now has diabetes. They are 26 per cent more likely to develop type 2 diabetes compared to women, with greater risk of complications such as leg amputations. Being overweight is one of the most common causes of type 2 diabetes. The Men's Health Forum found men are more likely to be overweight, and less likely to participate in weight management programmes compared to women. Other risk factors include high blood pressure, family history, ethnicity and inactivity."

## CHANGING HEALTH NEEDS

The modern world has revealed a number of health issues, which were different even compared to a generation ago. Among these are obesity-related issues, which ties in with the high incidence rates of type 2 diabetes and heart disease, among others.

So, what are the key health complaints to be aware of?

"World Health Organization data shows generally men in Europe are living healthier and longer lives than ever before, but there are concerns many are still dying far too young, compared to women," Gorman advised.

"Interestingly, men of today are not as strong as their counterparts 30 years ago. A 2016 study published in the *Journal of Hand Therapy* revealed men aged 20-34 have lower grip and pinch strength compared to three decades ago, which means they have weaker arms and hands. The average grip strength for the modern man is now 12kg less than it was in the 1980s. This is significant because a lower grip strength has been linked to a variety of serious health problems including arthritis, heart disease, stroke, and neurological conditions. Men are thought to be weaker now because they are less likely to work in manual jobs in manufacturing or agriculture.

"Also, men's testosterone levels seem to have been declining for decades.

Testosterone is the steroidal hormone associated with sex drive, motivation, bone health and muscle mass. An American study published in the *Journal of Endocrinology and Metabolism* in 2007 concluded testosterone levels had been dropping by an annual average of 1.5 per cent since the mid 1980s. More recent studies, including one in Denmark, have shown this trend is continuing. While it is usual for men over 40 to see a slight decline in testosterone levels, the research showed testosterone levels were much lower than those in the same age group 20 years earlier.

"There are multiple theories as to what is causing the phenomena. One is environmental, exposure to chemicals, such as phthalates in plastics. Another is obesity, it seems the more body fat men gain, the less testosterone they will have."

Soteriou added: "It seems that men are more prone to death via suicide due to mental health issues, metabolic issues and cardiovascular disease. Amongst men overall, the leading cause of death is ischaemic heart disease."

The prostate is also an important consideration to be made.

Gorman commented: "Roughly the shape and size of a walnut, this small gland sits between the bladder and the penis, surrounding the urethra. As men age, it can naturally begin to enlarge, known as benign prostatic hyperplasia. This increases pressure on the bladder and squeezes the urethra. It is estimated half of all men over the age of 50 develop an enlarged prostate, leading to problems such as frequent urination, increased trips to the toilet at night, weak flow, or dribbling.

"Prostate cancer is perhaps the biggest concern for men. In the UK, about one in eight men will get this cancer in their lifetime. Risk starts to elevate after the mid-40s and is higher for black men or those with a family history of prostate cancer. The vast majority of men will not even notice something is wrong unless they visit their doctor

and have a prostate exam, or PSA screening. Symptoms can include painful or frequent urination or blood in the urine.

"Erectile dysfunction, or impotence, is another condition experienced by 10 per cent of men at least once in their lifetime, with many suffering long-term problems. It can be a sign something else is wrong as the same factors causing obesity, high cholesterol, hypertension, diabetes, or cardiovascular disease can cause erectile dysfunction. For example, hardened arteries, the penis depends on blood flow to function properly, just like any other part of the body; therefore, when its blood supply is blocked or compromised, there is no way to achieve an erection. The penis also depends upon nerve impulses, so if the nerves are not working correctly due to a stroke or diabetes, an erection may not be possible."

And do the experts consider that the Covid-19 pandemic has exacerbated health concerns?

"Absolutely. Men are twice as likely to die of Covid-19 than women.<sup>5</sup> Those with metabolic disorders, anxiety and stress, cardiovascular disease, who are overweight or obese, and do not look after their health as much are more likely to be men, and so the correlation makes sense as these are all pre-requisites to bad outcomes when it comes to Covid-19," Soteriou pointed out.

And Gorman also pointed out: "A paper published in *The Lancet* last year suggested the 'Covid-19 pandemic is shining a cruel light on the state of men's health globally'. It found in 38 out of 43 countries for which provisional data was available, more men than women had died from Covid-19, despite a similar number of confirmed cases in each sex. In several countries, including the Netherlands and Spain, about twice as many men as women have died.

"This could be due to men's lower immune responses, behaviours such as smoking and drinking, less mask-wearing or handwashing, and delaying seeking healthcare. The higher prevalence of conditions like cardiovascular disease, diabetes, and hypertension in men than women is also likely to be a factor in men's susceptibility to severe Covid-19."





## MENTAL HEALTH IN FOCUS

Mental health is one of the biggest areas to discuss, both generally, but particularly in relation to men.

Soteriou pointed out: "Men are living longer now<sup>3</sup> due to advances in medical science and infrastructure, one of the triumphs of the modern era but are they living healthier? In some ways, yes and in some ways, no. Younger men in general are much more conscious of their health than previous generations but seem to be more prone to anxiety and generally less sure of their place in the world, which leads to more complex mental health issues, which has a knock-on effect to physiological issues.

"From 2001 to 2018, suicide and injury or poisoning of undetermined intent was the leading cause of death for both males and females aged 20 to 34 years in the UK; 27.1 per cent of these were male and 16.7 per cent were female.<sup>4</sup> These are very worrying figures and show that many aspects of society need to change and there needs to be work on improving the mental health of men in this demographic to reduce these tragic figures."

Gorman went on: "One in eight men are reported to have mental health problems, the most common are anxiety, depression and stress. Historically, men have been more reluctant to discuss mental health. Serious emotional problems and symptoms often remain undiagnosed. This failure to recognise mental health problems contributes to suicide rates being significantly higher in men.

"In the UK, men are three times more likely to take their own lives than women. One in 12 men take their own lives every day in the UK. Suicide is the single biggest killer in men under 45. Men are also more likely to respond to stress with risky behaviour such as abusing alcohol, which increases the risk of suicide by up to eight times. A relationship breakdown has a bigger impact on a man's suicide risk than a woman's. Divorced men are three times more likely to commit suicide than their married peers, whereas divorced women show no increased risk."





## NUTRITIONAL GUIDANCE

From a nutritional perspective, there are specific points to make when it comes to male health, and particularly with regards to nutrients men need an adequate intake of.

"The body needs a full range of nutrients to function optimally, so it is important to encourage men to eat as varied a diet as possible, full of nourishing foods, in particular, good quality proteins such as eggs, lean meat, wild fish, tofu, nuts, seeds, and healthy fats, including olive oil, coconut oil, and avocados. Plus, lots of different coloured vegetables full of antioxidants and phytonutrients," Gorman commented.

Focusing on the prostate, she added: "Saw palmetto is a very well-researched botanical with a rich history for treating sexual problems in men, such as loss of libido and impotence. Scientific data shows it may also help improve mild to moderate cases of enlarged prostate. It may also increase testosterone levels by stopping the activity of 5-alpha reductase, an enzyme which breaks it down into the by-product, dihydrotestosterone. Low testosterone can affect body composition, sex drive, mood, and cognition, and may even contribute to conditions like heart disease. It has also been linked to hair loss.

"Also rich in antioxidants, epicatechin and methyl gallate, saw palmetto may help prevent damage to cells, decrease inflammation, and protect against chronic disease. Selenium is an essential trace element widely distributed throughout the body. It is a component of multiple antioxidant enzymes. Studies indicate it may be a potential prostate cancer preventive, decreasing the growth rate of prostate cancer cells. Plasma, serum, and tissue levels of selenium are inversely associated with the risk of developing prostate cancer. It is found in Brazil nuts, walnuts, fish, meat, eggs, whole grains, garlic, onions, broccoli, cabbage, and mushrooms.

"Zinc, an essential mineral which is a cornerstone for male fertility. Studies show low zinc status or deficiency is associated with low testosterone levels, poor sperm quality, and an increased risk of male infertility. It is found in high amounts in animal foods, such as meat, fish, eggs, and shellfish."

And when it comes to supplementation?

Frank Brogan, Senior Nutritionist at Pharma Nord UK, suggested: "Aside from the nutrients which we all need, men do face specific health issues where nutritional supplementation could help out. For example, declining male libido is something which can affect men of any age. For the



majority of men, sex drive and erectile function are linked. Difficulty to maintain or even get an erection (commonly known as erectile dysfunction/ED) can make a man fear sex, specifically, the possible rejection and disappointment of performance issues.

"A range of factors may influence erections, including physiological conditions such as high cholesterol, high blood pressure, hormonal issues

or the side-effects of medications, as well as mental health issues such as anxiety and depression. Men may opt for ED treatment, including the medication Cialis or Viagra (the infamous blue pill) but natural alternatives do exist that may help to sustain blood flow to the genital regions,



including the bark extract, Pycnogenol, and the amino acid L-arginine.

"Related to sexual health, supplementation may also help in terms of male fertility. For example, a recent study<sup>1</sup> concluded that supplementation of both Q10 and selenium resulted in significantly improved sperm concentration, motility and elevated antioxidant status in infertile men.

"BPH can also lead to various complications, including urinary tract infections (UTIs). In a recent study<sup>2</sup>, Pycnogenol supplementation demonstrated effectiveness in relieving symptoms of the condition, even in comparison to medicines. In the study, men with symptoms of BPH were given either placebo pills, medicinal treatment (dutasteride and finasteride) or Pycnogenol supplements. After eight weeks, the group receiving Pycnogenol was shown to have their symptoms reduced significantly more than both the placebo and medication groups. Improvements in urine flow, decreased urine frequency and an improved ability to fully empty the bladder were all noted in the Pycnogenol group as well."

Soteriou continued: "Men are much less likely to consider their micronutrient profile and also less likely to buy supplements in a store, but I would suggest that to lead a long, healthy and happy life, supplements should be considered. Vitamin D3 would be my first recommendation as this becomes harder to absorb and convert in our bodies the older we get. Don't forget that that in order to make D3, we need adequate sunlight hitting our skin, then the right amount and type of cholesterol in our skin which then goes to our liver to be converted before going to our kidney to be converted again into its active form so if any of these factors are sub-par, so will our vitamin D3 levels be.

"Vitamin D3 is very important in modulating the immune system and can tone down our inflammatory response when we needed to help reduce the chances of a cytokine storm, which causes lung destruction and death in Covid-19. So yeah, quite important. The next nutrient I would recommend is zinc. Men lose a lot of zinc in their sperm and so need to replace it, especially if they are very active in this regard! It is important in over 300 enzymatic processes in the body, including helping to make testosterone and immune support.

"Pine bark extract is another of my favourites, helping

to increase blood flow, erection strength and cognitive function, alongside nettle extract, which helps to increase free testosterone. Pine bark extract has been shown to significantly improve blood circulation, which is of high importance when trying to induce and maintain an erection. It has been shown to increase erection strength<sup>9</sup> due to its ability to increase nitric oxide and has also been shown to increase libido and sexual stamina.

"Due to its high proanthocyanidin<sup>10</sup> content, pine bark extract has powerful anti-inflammatory properties<sup>11</sup> and most high-quality pine bark extracts will contain at least 75 per cent proanthocyanidins<sup>12</sup>. B vitamins are also extremely important for mental health and mood regulation, and there are also many herbs that can help with this.

"Low testosterone and other factors will affect sexual desire. In one study, the South American root, maca, was shown to increase sexual desire in trained male cyclists and has long been used as an aphrodisiac traditionally. Maca has been shown to work on the hypothalamus and pituitary glands in the brain, which are the main hormone governing glands of the body and thereby have a positive influence on all other hormonal glands in the body, such as the testes, which produce testosterone.<sup>6</sup> Pantothenic acid has been shown to increase blood levels of testosterone<sup>7</sup> in animal models and is essential for oxygen utilisation."

Gorman continued: "Vitamin C, as well as supporting immunity, it may also help improve fertility, particularly in men suffering with high levels of oxidative stress. Evidence suggests vitamin C supplements may even improve semen quality. One study showed taking 1,000mg of vitamin C twice a day for up to two months increased sperm count, motility and reduced the proportion of deformed sperm cells.

"Magnesium is involved in more than 300 processes in the body. Low levels of this mineral may increase the risk of heart disease. Studies suggests most men consume only about 80 per cent of the recommended daily magnesium, so it may be worth considering supplementing. Coenzyme Q10 facilitates production of ATP, necessary for energy and healthy muscles including the heart. Its highest concentration is in the heart, but as you age, CoQ10 gets depleted, so it may be worth considering a supplement."



## PROTOCOLS TO CONSIDER

Factors to consider when advising male customers can be varied, depending on the issues.

Soteriou advised: "Compliance is the biggest priority. If the guy won't do what you suggest, then the plan isn't going to work! It's really important to meet the client where he is at. Take a thorough case study on a timeline, noting all major events in his life and understanding his psychosomatic approach to life, food and health. Small, doable suggestions to begin with, explaining exactly why I'm making those suggestions.

"Some guys need tough love, and some need more sensitivity. It's about walking with them on their journey, introducing them to things they will not have known about and guiding them once they have made a commitment to live, and helping them do that!"

And in terms of the specific considerations that men should make, Gorman suggested:

- Physical activity can help control weight. One of the simplest ways to exercise is a daily walk in a fast, strong, purposeful way, with a long stride. Keep hands moving from chest to belt level with each stride. Regular strength and weight training will also help retain muscle and balance.

- Stress and anxiety can creep in and affect every part of our client's life. Finding ways to relax is crucial. Encourage mindfulness, meditation, yoga, or tai chi. Long-term stress and chronic anxiety can be a significant contributing factor in many chronic illnesses such as cardiovascular disease or cognitive decline. A paper published in the *International Journal of Impotence Research* in 2003 found anxiety contributes to erectile dysfunction and may be more of a problem than men have been led to believe. Counselling or therapy can help get to the root cause of stress and anxiety.

- Oxygen is one of the foundation blocks for good health, improving breathing can be critical. There are two types of breathing: anxious shallow breathing in the chest, and relaxed breathing from the diaphragm. Chest breathing should only be temporary, it is related to a fight-or-flight response. If stressful breathing becomes chronic, the body will retain carbon dioxide and cortisol and may start affecting general health and immunity. Retraining the body to breathe in a relaxed, healthy manner will help clear out carbon dioxide and cortisol."







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Testosterone is responsible for sperm production and erectile function, growth of muscle mass and strength, red blood cell production in bone marrow and bone density. With added vitamin D3, which contributes to the maintenance of normal muscle function and astaxanthin to give an athletic edge and combining a powerful and effective botanical blend including nettle, lycopene, pine bark extract, pomegranate, saw palmetto, pumpkin seed and maca, along with selenium and zinc, to support fertility, performance and endurance.







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# Have you entered the BioCare Graduation Award?



Shaping a healthier society

Get your entry in for the inaugural BioCare Graduation Award.

**D**on't miss out on giving your new business the best possible chance of success, with a £1,000 bursary, one to one mentoring, free BioCare products and more. If you haven't heard about BioCare's new graduation award yet, and you're a nutrition student studying in the UK and graduating in 2021, then you are eligible to apply for one of three awards being given away. Each winner will receive £1,000 cash

towards college fees or the set-up of your business, £250 worth of free BioCare products and one-to-one mentoring, including support with resources for clinic practice, a guide to BioCare CPD accredited education and BioCare essentials product training. The winners will also receive a free print subscription to *IHCAN* magazine for one year, as well as free lifetime subscription to *Nutrition I-Mag*.

## COMMITMENT TO EDUCATION

BioCare has always been passionate about providing education and support to practitioners and was excited to launch this new award, in partnership with *Nutrition I-Mag*, to continue their commitment to the practitioners of tomorrow.

Chris Newbold, Head of Nutrition Strategy for BioCare, commented: "Practitioners are at the core of the BioCare brand, and our team are passionate about providing you with support and education to enable you to play your part in shaping a healthier society too. With years of experience working with practitioners, we have a wide breadth of clinical experience. Coupled with our drive for sharing knowledge, we're here for you, as your trusted experts, every step of the way as you make the

transition from nutrition student, to practitioner."

Industry support for the award has been strong, with Sally Duffin, Assistant Course Director, Nutrition Science & Practice at Northern College of Acupuncture, enthusing: "Thank you for the information about the new BioCare graduate prize. I've seen the advert in *IHCAN* magazine too and think it's such a brilliant idea!"

Julie Pichler, final year student of Nutritional Therapy at ION, added: "What an awesome start to launching a business to have this kind of support."

The winners will be announced at the IHCAN Summit on June 26. To enter, complete the form at [www.biocare.co.uk/student-graduation-award](http://www.biocare.co.uk/student-graduation-award) before May 31, 2021. Ts and Cs apply. Visit website for full details.



## THE BIOCARE DIFFERENCE

All applicants registering for the award will be set up with a BioCare trade account, if you don't already have one, which you can start using straight away, even before graduating. The range of account benefits include:

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and receive a referral payment.

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# How would you like to receive the BioCare Graduation Award?



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**Includes a £1,000 bursary, one to one mentoring, free BioCare products and more!**

With years of experience of working with practitioners, we have a wide breadth of clinical experience. Coupled with our drive for sharing our knowledge, we want to be here for you, as your trusted experts, every step of the way as you make that transition from nutrition student, to practitioner.

If you are a nutrition student studying in the UK and graduating in 2021, then don't miss out by applying for one of three BioCare Graduation Awards\*!



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- ✓ **£250 worth of FREE BioCare products**
- ✓ **One to one coaching that includes:**
  - Support with resources for clinic practice
  - Mentoring support
  - Guide to our CPD accredited education
  - Our Essentials product training
- ✓ **A FREE print subscription to IHCAN magazine for one year**
- ✓ **A FREE lifetime subscription to Nutrition I-Mag**

## How do you enter?

Simply complete the online form on our website at:

**[www.biocare.co.uk/student-graduation-award](http://www.biocare.co.uk/student-graduation-award)** before the deadline of **May 31, 2021**. \*T's and C's apply.

By registering you will also be set up with a BioCare account, if you don't already have one, which you can start using straight away, before graduating!







# A skin health protocol

Nutrition is a key indicator of skin health, and with cases of skin disease in their millions, an effective protocol is required. Here, the experts discuss what that should include.

**W**hen we talk about skin disease, in some form or another, it is a big problem in the UK. Not only are there huge numbers of children and adults experiencing some of the most common complaints, such as eczema and psoriasis, but there are also many other issues that fall under the category of skin conditions.

The collective issues we're facing when it comes to our skin health is multi-factorial, some can be hereditary, others environmental – but there is certainly action clients can take to allow skin the best chance of being restored back to health, and nutrition is at the heart of any recommended protocol.





### THE SCALE OF THE PROBLEM

Andrea Burton, Technical Advisor at ADM Protexin, which has the Bio-Kult and Lepicol brands in its portfolio, agreed that we are facing a big problem when it comes to skin health.

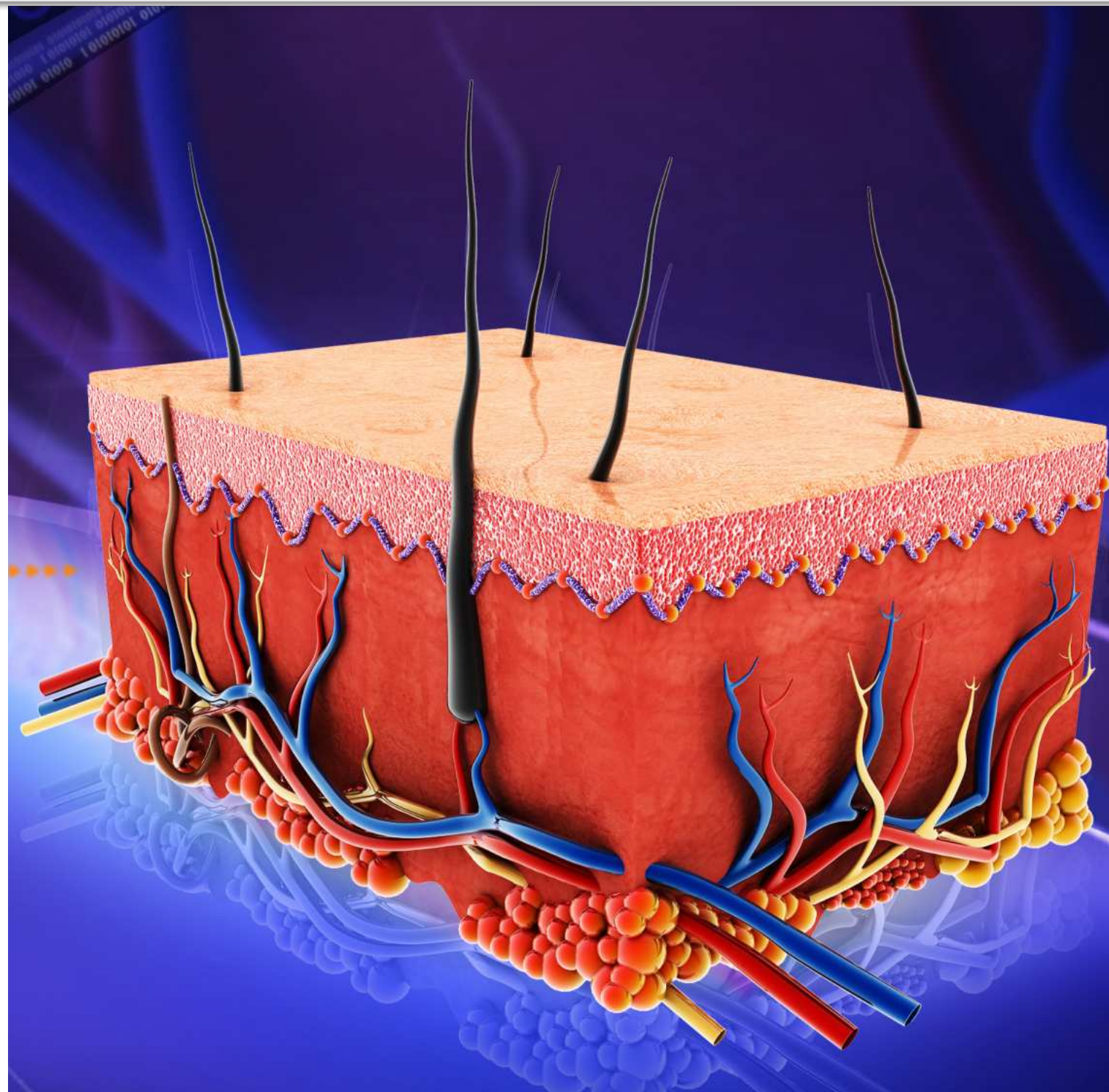
"Skin diseases account for over 13m GP consultations per year<sup>1</sup>, with approximately 55 per cent of the UK population affected by a skin complaint.<sup>2</sup> The most common chronic skin disease of childhood is atopic dermatitis (also known as eczema), which affects between 10-20 per cent of children and up to 10 per cent of adults globally.<sup>3</sup> Specialist dermatology departments in England most commonly see people with skin lesions, eczema, psoriasis, contact dermatitis and acne<sup>2\*</sup>" she advised.

"Fungal skin infections (such as athlete's foot, ringworm and yeast overgrowth) are also prevalent and represent the fourth most common health condition globally.<sup>4</sup> Other common skin complaints include rosacea, pruritus (itching without attributable cause), alopecia, urticaria (hives), scabies, impetigo, abscess and other bacterial skin diseases, cellulitis, warts, and non-melanoma skin cancer.<sup>4</sup>

"Skin diseases might also be more prevalent than previously thought. Skin diseases are ranked as the fourth most common cause of human illness, but many affected people do not consult a physician. In one survey of 2,701 individuals at an event in Germany, at least one skin abnormality was observed in 1,662 of the participants (64.5 per cent).<sup>5</sup> Nearly two-thirds of the affected participants were unaware of their abnormal skin findings."

Rose Holmes, Nutritionist and Education and Training Manager at Rio Health, went on: "Skin conditions are a common reason for visiting the doctor. As the largest detox organ of the body, skin also is our interface with the outside world and so skin has to deal with both internal and external toxin exposure. Common complaints include eczema, acne, psoriasis, contact dermatitis, rosacea and warts.

"Skin is a major detox organ and many common skin conditions associate with this function. Skin pores need to be open and able to participate in this as well as other skin functions. Often, in an attempt to address skin problems, topically applied products further exacerbate the problem, either by impacting the detoxification function of the skin, or by directly adding to the body's toxic burden."





## IDENTIFYING RISK FACTORS

One of the most important considerations to make in clinic is understanding the known risk factors when it comes to developing a skin condition.

"Many factors may increase risk for skin conditions – poor nutrition, poor hydration, medications, impaired mental status, insufficient physical exercise, inadequate protection from the sun, poor immune status, and poor detoxification," Holmes commented.

"Many common skin conditions today link with increased exposure to toxins, alongside altered diet and lifestyle habits that reduce natural detoxification processes. Skin that looks dull and dry or is acne-prone or with other skin condition may be an indication that skin needs a detox.

"We are constantly bombarded by toxins through the food we eat, the beverages we consume, the air we breathe and the products we place on our bodies. These add to the burden our detoxifying organs (including skin) need to cope with just from normal metabolic processes (we may also have exposure to toxins and heavy metals via smoking, dental amalgams, cooking methods, cosmetics/personal hygiene, automotive and construction industries, hair dressing and nail salons). This is in addition to dealing with alcohol, non-filtered water and pesticides from non-organic foods, not to mention prescription and some over-the-counter medications."

She added: "Any hormonal imbalance may also impact the skin. It's easy to see then, why teenagers and menstruating women may be particularly susceptible. Older individuals are also susceptible to skin conditions, as connective tissue health can be impacted. Using inappropriate skincare (and home cleaning) products may contribute to risk of developing skin conditions. As can other lifestyle choices like alcohol consumption, smoking and consumption of non-organic foods.

"Ageing is another risk factor. Ageing, and premature ageing of skin manifests as fine lines and wrinkles and sagging skin. Skin may be more easily bruised as it can become thinner, less able to repair and defend itself. Immune health is also important since many bacterial, viral and fungal infections manifest as skin conditions; for example, cold sores are manifestation of the virus HSV (herpes simplex virus), some rashes are a manifestation of fungal infection by *Candida albicans* and impetigo, which is often caused by bacterial infection by *Staphylococcus aureus*."

Burton went on: "Mood disorders such as stress, anxiety and depression are linked to skin health via the gut-brain-skin axis. Skin conditions such as acne, rosacea and psoriasis often form a vicious cycle of stress, poor food choices, gut dysbiosis and a flare-up of the skin condition.<sup>8</sup> A lack of physical exercise reduces blood flow to the skin and can result in the reduction of nutrients to the skin.<sup>21</sup>

"Chronic sun exposure is damaging to skin, so whilst it is important to get outside amongst nature, it is best to seek shade during the midday sun in the summer months.<sup>22</sup> Getting enough beauty sleep is important for our skin health. Adults should try to achieve between seven to nine hours each night, aiming to go to bed at the same time and wake at the same time each day to enable our bodies to maintain their natural circadian rhythms.<sup>23</sup> A number of studies have found differences between the gastrointestinal microbiota in children with and without atopic dermatitis, supporting the idea that the gut microbiome may play an important role in the development and severity of the disease<sup>6,7</sup>."

Alice Bradshaw, Head of Nutrition Education and Information at Terranova Nutrition, continued: "It's often said that the skin is an outwards reflection of the health of the body. It may reflect nutrient deficiencies, hormonal imbalances, digestive problems and even poor lifestyle habits. A number of nutritional imbalances may compromise skin health. Deficiencies in vitamins A, C and E, essential fatty acids and protein are possibly the most detrimental to skin health and integrity. Excess sugar, refined foods, poor quality fats and inadequate fluid intake also compromise skin health."







## FOCUS ON NUTRITIONAL STATUS

Our skin says a lot about our internal health, and, therefore, the cornerstone of restoring skin health is to look at what a client is eating, and deficiencies they could be experiencing.

"The diet for healthy skin will be nutrient-rich and be based upon fresh wholefoods and plant focused. Fresh, antioxidant-rich vegetables, fruits, nuts, seeds and quality protein sources are the basis of this diet," Bradshaw advised. "Drinking good quality water will also support detoxification and, therefore, skin health. Exercise, sleep and stress management should also be considered. Supporting gut health and being mindful of any food intolerances will be key for anyone suffering with more serious or hard to treat skin imbalances.

"The key nutrients involved in supporting skin health include vitamins A, C and E, zinc, omega 3 fats, biotin, probiotics and sulphur. Adequate protein intake is also vital. Any of these nutrients can be missing from a diet that lacks variety and fresh, nutrient-dense wholefoods."

Burton went on: "Nutrition is very important for skin health. Poor nutritional status alters the structural integrity and function of the skin, resulting in an abnormal skin barrier.<sup>9</sup> Deficiencies of vitamin A, vitamin C, riboflavin, niacin, pyridoxine, vitamin E, zinc, selenium, and certain essential fatty acids or amino acids have been shown to cause skin and hair anomalies<sup>10</sup>."

And moving on from that, what would be recommended as an effective protocol, taking into account diet and lifestyle?

"Given the strong link between the health of the skin and the gut, the first and most important advice would be to heal the gut. Supporting the integrity of the intestinal tract allows efficient absorption of skin-supportive nutrients and favourable metabolites from the digestive tract, whilst also preventing toxins, undigested food particles and less favourable by-products which could negatively affect the skin health," Burton commented.

"Soluble fibres (prebiotics) feed our gut microbes and can help to increase beneficial metabolites produced by them. Some of these synthesised metabolites can improve skin health.<sup>12</sup> Prebiotic foods include onion, garlic, asparagus, leeks and slightly green bananas. In particular, short-chain-fatty acids (SCFAs) are produced as the gut bacteria ferment the prebiotics, these SCFAs have shown to have anti-inflammatory effects on the skin.<sup>12</sup>

"Fermented foods, such as sauerkraut, kimchi, kombucha and kefir, are reported to have positive effects on skin by modulating the immune

system, reducing inflammation.<sup>13</sup> These foods contain large numbers of diverse microbes, which can produce beneficial metabolites such as dopamine and GABA that appear to improve skin health, although mechanisms are not entirely clear. More research needs to be conducted to ascertain whether the mechanism is through inflammation control or from an interaction of the gut-skin axis with the central nervous system<sup>12</sup>."

Holmes agreed, adding: "Skin health is a reflection of gut health and if our internal skin (our gut lining) is allowing substances to pass through that should not (either because the lining is not in optimum condition or because it is having to cope with toxins), the body needs to process these in addition to its normal load. Waste material must exit the body to maintain health. One of these routes is via the skin.

"Many skin conditions, including acne, psoriasis, eczema and rosacea, suggest detoxification may not be optimal and/or, exposure to toxins may be too high. Those with skin conditions may also be using chemical (toxin)-laden skincare products, which may further exacerbate the problem."

Moving on from the gut,

there's much more to consider here and being aware of sugar is one of the key starting points.

Holmes explained: "One of the worst offending toxins in terms of skin health is sugar, which impacts not only blood sugar level (potentially associating with acne) but also, via its ability to cross-link with proteins. Sugar, via its ability to cross-link with proteins, can prematurely age skin, causing fine lines and wrinkles. Sugar has become ubiquitously present in processed foods, even traditionally savoury foods.

"A common problem is inadequate hydration. Dry, irritated skin and acne, as well as redness/flushing are common skin complaints. These are indications that skin is not optimally nourished and hydrated. Inflammation and oxidative stress impact skin health and manifest in a variety of ways, including redness and dullness. Good levels of antioxidants can help. A healthy, balanced diet with good sources of protein and plenty







of vegetables in all colours. Protein is needed for skin repair and renewal and a 'rainbow' of vegetables can provide the vitamins, minerals and antioxidants needed for healthy skin."

Burton went on: "A variety of nutrients are important for skin health, and many work synergistically together. Therefore, eating a varied, balanced wholefood diet, rich in fruit and vegetables and healthy sources of fat and protein, is paramount. There are a few nutrients/foods that are of particular importance:

- Omega 3 levels appear to be important in skin health, with studies showing beneficial effects in skin ageing, sunburn, dermatitis, hyperpigmentation and healing wounds.<sup>11</sup>
- Vitamin E is integral to the skin's antioxidant defences, primarily providing protection against UV radiation and other free radicals. It is stored in our fat cells and secreted onto the skin through the sebum roughly seven days after consuming vitamin E-rich foods.<sup>15</sup>
- Other antioxidants, such as vitamins C and A and polyphenols such as lycopene from tomatoes, carotenes from orange coloured vegetables and flavonoids from green tea have all been reported to help protect the skin from free radical damage and reduce inflammation.<sup>14</sup>
- Certain minerals, such as zinc, copper and selenium, are also known to be beneficial for skin health. Zinc protects from photo-damage, has antimicrobial activity and assists in the proper structure of cell membranes. Copper serves as an antioxidant, stimulates the maturation of collagen and modulates melanin synthesis. Selenium protects skin from UV damage and is useful for the prevention and treatment of psoriasis.<sup>9</sup>
- Dairy and a high GL diet have often been reported to be linked to acne.<sup>24</sup> Eliminating dairy and refined carbohydrates, such as pasta, cereal and biscuits, whilst increasing the intake of antioxidants from colourful vegetables and fruits, could help reduce acne symptoms.
- Good quality protein, such as lentils, quinoa, nuts and seeds, wild fish and organic meat is theorised to help the skin form healthy keratinised cells as proteins form an important part of body tissues and organs. Their primary physiological functions are to construct and repair tissues, mediate physiological functions, and supply energy. All tissue cells in the body are constantly renewed, and only adequate protein intake can maintain normal tissue renewal and repair. Skin is no exception, and the skin renewal cycle is generally considered to be 28 days<sup>25</sup>."







## PRODUCT RECOMMENDATIONS

Advising clients to add in targeted supplements, depending on the skin complaint, is a good idea. But what to consider?

Holmes suggested silicon, explaining: "Skin, hair (hair follicles) and nails contain connective tissue which can be supported by ensuring optimal amounts of protein (for collagen), vitamins and minerals. Silicon is an especially important, and often overlooked, nutrient that supports connective tissue and is important for the maintenance of healthy hair, skin and nails. Zinc and other minerals also contribute synergistically with silicon in this respect. Bioavailability from food sources of silicon (green beans, oats and brown rice) is thought to be limited, but when delivered as liquid orthosilicic acid (the form in which it exists in the human body), it is readily absorbed."

She also pointed towards certain antioxidants, commenting: "Vitamin C provides excellent connective tissue support, providing antioxidant support and helping to protect skin from stress caused by pollution, toxins and UV rays. Vitamin C is needed to create collagen, which is the protein that makes up more than 70 per cent of the dry weight of skin. In addition to stimulating collagen synthesis, and providing antioxidant protection, vitamin C (status of which is compromised in those with skin inflammation) influences gene expression of antioxidant enzymes and organisation/accumulation of phospholipids, and promotes the formation of the stratum corneum (skin's outer layer) and differentiation of the epithelium in general.<sup>1</sup> Additionally, vitamin C greatly assists wound healing, minimises raised scar formation and ameliorates the signs of ageing in human skin. Liposomal vitamin C provides excellent bioavailability, without the osmotic (bowel tolerance) side effects."

She added: "Selenium can help ensure protection against free radical damage and inflammation, as well as boosting white blood cell function, which may help prevent skin infections. Selenium is also important for boosting glutathione for skin healing and detoxification functions. Glutathione supplementation may also benefit skin health by improving the body's ability to deal with toxins. Glutathione is also important for detoxifying methylglyoxal,

a toxin produced during metabolism that can induce formation of AGEs – advanced glycation endproducts – which contribute to both diabetes and skin conditions.

"The botanical *Centella asiatica*, aka gotu kola, is a traditional Chinese medicine herb with extensive benefits including for skin conditions. Other common names for *Centella asiatica* include Indian pennywort and brahmi. Gotu kola strengthens connective tissue and aids wound healing and may help reduce appearance of scars."

And Burton added: "An omega 3 supplement could be beneficial for anyone not achieving two servings of oily fish each week. A fish oil supplement is preferable, however, a vegetarian algae oil high in DHA and EPA could also be used.

Bradshaw added: "Nutrients such as vitamins A, C and E, as well as zinc and selenium can easily be found within a multivitamin formula. Additionally, these nutrients can be combined with botanical compounds, such as nettle leaf, pumpkin seeds, watercress and other nutrient-dense green foods. There are also some speciality products that may offer additional support. They may contain ingredients such as methylsulfonylmethane or MSM, which supports collagen production and hyaluronic acid, a water-loving molecule that is found in skin."

Turning back to the gut, Burton highlighted probiotics.

She commented: "A live bacteria supplement which contains many strains with pleiotropic effects may be of more benefit than a single or dual strain formula. Multi-strain live bacteria supplements also help to rebalance the microflora and improve immune function, which could potentially play a role in improving the recovery of a disturbed skin barrier and decrease the signs of skin inflammation.<sup>16</sup>

"Certain strains of beneficial bacteria have also been shown to help support the integrity of the intestinal wall, reducing leaky gut, which is implicated in a number of skin conditions. A 12-week study using a *Lactobacillus*-fermented dairy drink in 56 patients with acne significantly improved clinical aspects of the condition, such as reduced sebum production and a reduction in total lesion count<sup>17</sup>."



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# Structuring a joint and bone health protocol

Addressing deficiencies, upping the nutrition stakes and getting clients moving should all factor into a client care plan in relation to joint and bone health. Nutrition leaders offer their insights into what such a plan could look like.

**T**he statistics are rather stark when it comes to the changes to our overall joint and bone health in the UK; rates of arthritis and osteoporosis, the two most common issues affecting the musculoskeletal system, are known to be on the rise, they account for an increasing number of GP visits, and there is concern that the Coronavirus pandemic could have exacerbated problems.

Keeley Berry, Nutritional Expert and Product Developer at BetterYou, commented: "The health of the UK's musculoskeletal health has at times been deemed, 'the elephant in the room', due to the societal perceptions that problems with the bones, joints and muscles inevitable as we age. More problematically, these types of concerns are as 'invisible' in conversation as they are to look at – it's perceived that nothing much can be done about them.

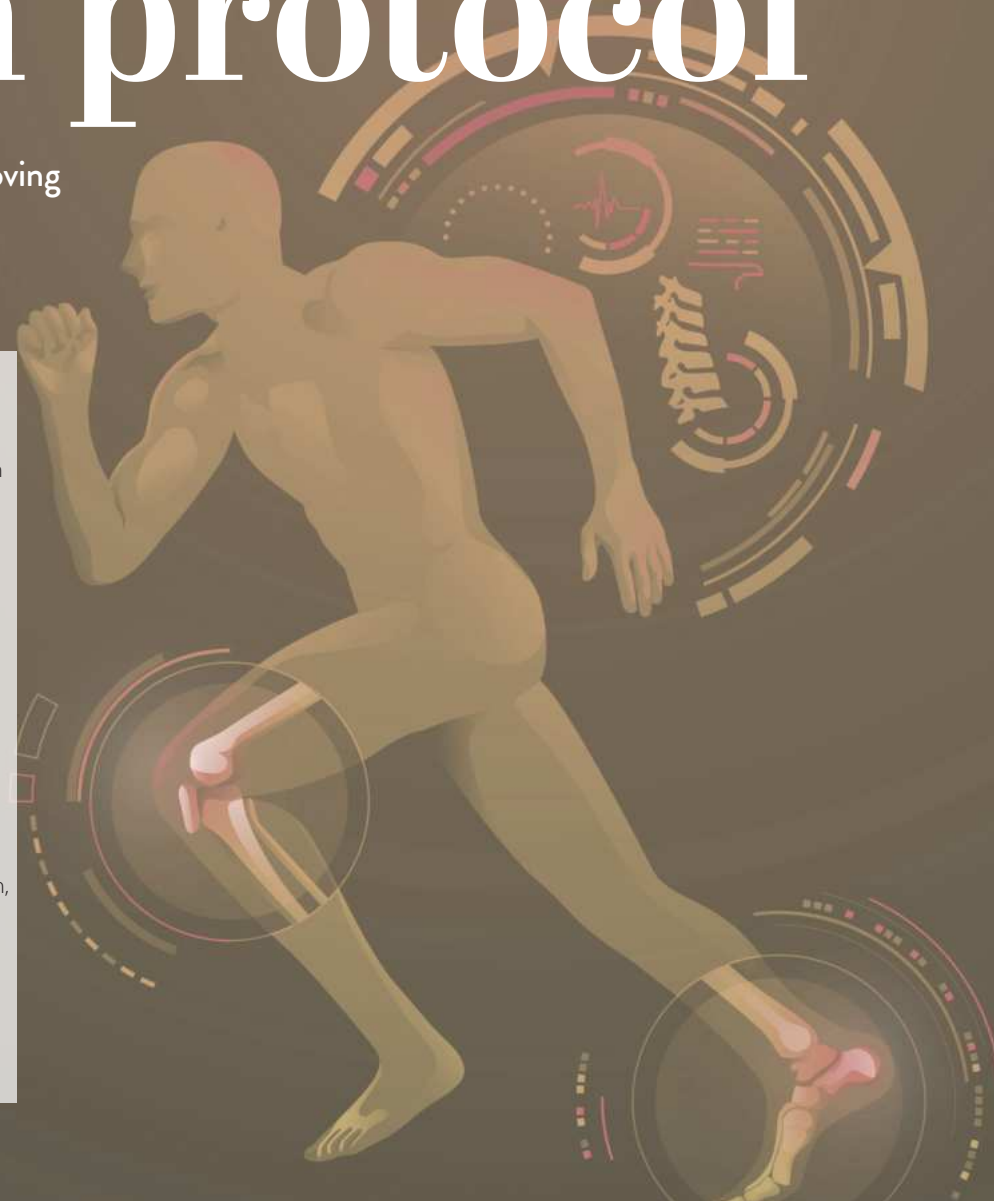
"Yet the NHS has previously reported as many as one in five people visit their GP about a problem relating to the joints, bones or muscles each year, and there are an estimated eight million people living with musculoskeletal conditions in the UK\*. The effects of modern life on our joints and bones is continually

being researched, for example, it is believed that even things such as spending long hours looking at our mobile phones will affect the shape of our skull in years to come – so it's no surprise that each generation may see a difference in the most prevalent problems experienced.

"Rickets, for example, has almost come full-circle, with cases of the somewhat Dickensian-considered condition increasing four-fold amongst children, from 1995 to 2011\*\*. Arthritis and osteoporosis are among the more common conditions, which sadly is no different for our generation than those of our grandparents."

Nutrition expert and author, Patrick Holford, went on: "Although our calcium intake has stayed relatively constant, the incidence of osteoporosis has rocketed. Consequently, one in three women, and one in 12 men, has a fracture by the age of 70, most commonly of the hip.

"In the UK, 50,000 people fracture a bone as a result of osteoporosis every year – that's one every three minutes. Four-fifths of fractures occur after the age of 50 and the risk becomes quite significant from 70







onwards. One in two women and one in five men will suffer a fracture after the age of 50. It is estimated that the cost of treating all fractures resulting from osteoporosis in postmenopausal women is £2bn."

Dr Trygve Bergeland, Vice President Science & Product Development at Kappa Bioscience AS, continued: "A 2017 study by Global Burden of Disease estimated that 18.8m people in the UK had a musculoskeletal condition.[1] Over three million people in the UK are estimated to have osteoporosis.[2] Each year, almost a third of people aged over 65 years fall at least once, and there are an estimated 500,000 fragility fractures[3]."

Dr Marilyn Glenville PhD is one of the UK's leading nutritionists. She is the author of *Osteoporosis, how to prevent, treat and reverse it* and pointed out: "I think all these conditions are more common than a generation ago. When I wrote my osteoporosis book, the statistics were that one in three women over the age of 50 would get osteoporosis but by the time it was published, the statistics were one in two. For osteoporosis, people are generally less active than years ago, and also dietary changes will affect bone density and also increase the risk of osteoarthritis."

Let's also consider the effect various facets of modern life have on the health of this system.

Berry advised: "It's important to correlate the 'digital age' with an increasingly sedentary lifestyle – which is not exclusive to the older population – and which is believed to significantly contribute to poor health of the joints and bones. Non-use of the joints sends the wrong signal to the body, stemming nutrient flow to that area and causing damage, so it's recommended that those with desk jobs try to take regular movement breaks during the working day and, where possible, make time for daily exercise."



## THE RISE IN ARTHRITIS

Arthritic issues are the most commonly reported, and not just in the older age category, with it becoming a problem earlier for many people for a variety of reasons.

Jo Sharp, Nutritionist at Minami, which specialises in essential fats, advised: "The most common condition we see is osteoarthritis, which is classed as a degenerative disease, also referred to as general wear and tear. Usually seen on the large weight bearing joints, it's when the cartilage that protects the bone starts to erode, eventually exposing the bone and causing friction."

"Another commonly seen joint condition is rheumatoid arthritis, an autoimmune condition where the immune system attacks the joint cells. This leads to swelling, pain and in many cases, deformed joints. In a similar way to arthritis, over time, it can damage the cartilage, joints and bones. Gout, another form of inflammatory arthritis caused by increased uric acid in the body, is also common. It can cause severe pain, swelling and redness, which starts with one joint at a time, often seen on the big toe."

She added: "Whether there is a genetic predisposition to any condition or not, we always have the power to control its progression. It's key to look at the root cause of these, being an immune response, diet or lifestyle."

Holford continued: "The most common type of arthritis in the UK is osteoarthritis, in particular, osteoarthritis of the spine. But the usual story we are told is that joint aches and arthritis are just about wear and tear on the joints, but this is a very partial truth. Firstly, more and more younger people are diagnosed with arthritis. According to Phillip Conaghan, rheumatologist and spokesperson for the Arthritis Research Campaign, 'We start seeing signs of it in people in their 30s and 40s'."

"Musculoskeletal (MSK) conditions such as arthritis and back pain affected an estimated 18.8m people across the UK in 2017. They accounted for more than 22 per cent of the total burden of ill health (morbidity) in the UK, and low back and neck were the biggest cause of ill health overall across all ages."

And Dr Glenville went on: "With osteoarthritis, just being overweight can be a problem because of the extra pressure on the joints, especially the knees. Gender can also be a factor as women are more prone to osteoarthritis in the knees and hands. Changes in hormones may increase the risk of osteoarthritis as oestrogen is anti-inflammatory and there will be a drop in oestrogen as women get older. But being pregnant can put stresses and strains on joints and also other hormones, such as thyroid or adrenal hormones, may affect the joints. Genetics can also play a part in joint and bone health."



## FOCUS ON BONE HEALTH

Moving away from the joints, we must also highlight bone health and the very real issues present in our modern society.

Dr Hogne Vik, Chief Medical Officer with NattoPharma ASA, supplier of MenaQ7 vitamin K2 as MK-7, commented: "Unfortunately, compromised bone health is a global issue that needs to be addressed. According to the International Osteoporosis Foundation, osteoporosis causes more than 8.9m fractures annually worldwide, resulting in an osteoporotic fracture every three seconds. Worldwide, one in three women over age 50 will experience osteoporotic fractures, as will one in five men aged over 50.

"Bones grow and develop most intensively during childhood and adolescence, with up to 90 per cent of peak bone mass acquired by age 18 in girls and by age 20 in boys. We achieve our peak bone mass in our late 20s to early 30s, and from there, it is a steady decline. For women, that decline takes a sharper turn when they reach menopause. Most view compromised bone health as a natural symptom of ageing, but in truth, we can help to stave off that decline with proper nutrition. Specifically, by balancing our calcium intakes with vitamin K2. This balance is critical because it simultaneously supports our bone and cardiovascular health."

Holford added: "The epidemic of osteoporosis is particularly prevalent in women after the menopause as oestrogen production decreases that helps keep calcium in the bones. Changes in diet are also strongly related to increased risk of osteoporosis. This could be too much dietary protein, which is acid forming. The body cannot tolerate substantial

changes in acid level in the blood and neutralises this effect through two main alkaline agents – sodium and calcium. When the body's reserves of sodium are used up, calcium is taken from the bones.

"Previous studies have shown that an elevated homocysteine concentration is associated with increased risks osteoporotic fractures. Elevated homocysteine is recognised as a sensitive marker for folate and vitamin B12 deficiency because high plasma concentrations of total homocysteine are associated with low concentrations of folate and vitamin B12.

"Homocysteine is also elevated in association with low vitamin B6, high alcohol and caffeine intakes, smoking, hypertension, and impaired renal and thyroid function. More and more evidence is accumulating to show that dietary calcium intake is only one of a number of factors that influence the proper use of calcium in the body. Your intake of magnesium, vitamin D and protein, plus weight bearing exercise, play a significant role."

Dr Bergeland added: "If age is a risk factor for poorer bone health, menopausal women are at increased risk for osteoporosis. On average for the first five years, they can lose an average of 2.5 per cent of their bone mass per year.[4]

"While some risk factors are inevitable – age or genetics – some others may be mediated. For example, studies show that supplementation of postmenopausal women with either vitamins D or K2 limit bone loss, and

supplementation with the two vitamins together actually improves bone mineral density.[5] D and K2 work in synergy and truly form the perfect pair for our health."

Holford went on to highlight the factors that can affect our bone density, commenting: "Major well-known risk factors are early menopause, previous fracture from slight injury, anorexia, significant corticosteroid use, bulimia, lost several inches in height, over-dieted, close relatives with brittle bones, over/under exercised, heavy intake of alcohol and drugs, many missed periods and history of heavy cigarette smoking.

"Osteoporosis is mostly a 'silent' disorder, and a fracture is often the first indication of a problem. Loss of height, back pain, tooth loss and a bent posture are indicators for osteoporosis, particularly after the age of 50.

"Factors influencing bone mass density are lack of minerals (calcium, magnesium, boron), excess of protein, resulting in high levels of acidity, lack of vitamins D, K, C and Bs, excess of refined carbohydrates, resulting in blood sugar problems, thyroid and parathyroid hormone deficiencies, lack of oestrogen and progesterone after the menopause, stress, lack of exercise, lack of sunlight, excess of alcohol and stimulants, and lack of stomach acid.

"Take a look at your client's diet and lifestyle over the last 20 years. Which of these factors may have contributed to the state of their bones and joints? Since most of them are the direct consequence of diet and lifestyle."



## THE NEED FOR GOOD NUTRITION

As already discussed, so many factors affect the health of our joints and bones, and a critical one to consider is nutrition.

"There are two sides to bone and joint health. The first is keeping bone and the cartilage that surrounds it strong and healthy, and the second is reducing the inflammation, which is the primary cause of the cartilage destruction that makes joints painful," Holford advised. "Today's diet has drifted a long way off the ideal intake and balance of nutrients. We eat more saturated fat and sugar and less starch and polyunsaturated fats.

"Don't consume more than 40g of protein a day. This is not usually a problem for vegetarians, who should aim to have two servings daily of a protein vegetable food, such as lentils, beans or tofu. For a meat-eater this means meat certainly no more than once a day and, ideally, no more than three times a week. Fish is preferable, because it provides more anti-inflammatory essential fats and fewer oestrogenic hormones.

"Eat plenty of nuts, seeds and yellow and green vegetables. A heaped tablespoon of ground sesame, sunflower, flax or pumpkin seeds will give you significant amounts of calcium, magnesium and zinc, plus essential fats. Rely on seeds and nuts for minerals, not dairy products. Dairy products, especially cheese, are high in protein and oestrogenic hormones and low in magnesium."

Berry went on: "At times, a reminder that approaching diet and lifestyle with a simple, colourful and balanced approach is the most effective way to encourage healthy habits, without overwhelming the client. Dependent on the individual's diet, job, genetics and, therefore, the nutritional gaps they may experience, I would encourage careful and tailored supplementation should always go hand-in-hand with a healthy diet and lifestyle. Interestingly, some research suggests that excessive sugar consumption can contribute to conditions such as osteoporosis\*\*\*, as it increases urinary excretion of both calcium and magnesium, so nutritional therapists should be mindful of modern eating habits such as eating too much processed sugars."

Dr Glenville continued: "Diet plays a crucial role in any joint or bone condition. The person needs to eat well generally but also need to pay particular attention to keeping blood glucose in balance because if they are on the rollercoaster of blood sugar swings, the increase in cortisol as the blood glucose drops can produce inflammation. Caffeine is also going to act as a stimulant, causing the release of cortisol and more inflammation over time.

"With most joint problems, the aim is to control inflammation, so diet can have a huge impact on the health of the joints. Include good quantities of essential fatty acids in the diet, particularly omega 3 to help

control inflammation, and so work on prevention. Research has shown that people who have diets high in omega 6 (found in vegetable oils and evening primrose oil) and low in omega 3 fatty acids produce more inflammation.

"For osteoporosis, it is again important to eat well and to also make sure enough exercise is included in the daily routine in order to make the demand on the skeleton. Reduce intake of saturated fat from foods such as dairy and red meat. Saturated fat contains arachidonic acid, which causes the body to produce more inflammation and this fat can also interfere with omega 3 levels, making it harder for the body to use them in a healthy and efficient way.

"The aim is to emphasise a more alkaline rather than acidic diet in order to keep the joints healthy and this is also important for osteoporosis. So, be sure to eat more oily fish, eggs and pulses as protein rather than red meat. Include plenty of vegetables but reduce the deadly nightshade family of potatoes, aubergines, peppers and tomatoes. Do include berries as these contain anthocyanins, which have an anti-inflammatory effect and cherries have been shown to reduce attacks of gout."

But getting enough of these nutrients needs real consideration in our modern world.

"The food itself does not contain the nutrients it used to. For example, compared to the 1930s, the fruits and vegetables we eat contain an average of 20 per cent fewer minerals (magnesium 24 per cent, calcium 46 per cent, iron 27 per cent and zinc 59 per cent). With regard to meat and dairy, iron in meat has been depleted by 47 per cent, iron in milk by over 60 per cent, calcium loss in cheese by 15 per cent and Parmesan cheese by 70 per cent (*The Independent Food Commission's Food Magazine* 2005)," Dr Glenville explained.

"The problem is that even with our best intentions, the soil that our food is grown in has become depleted in vital nutrients from over-farming and the use

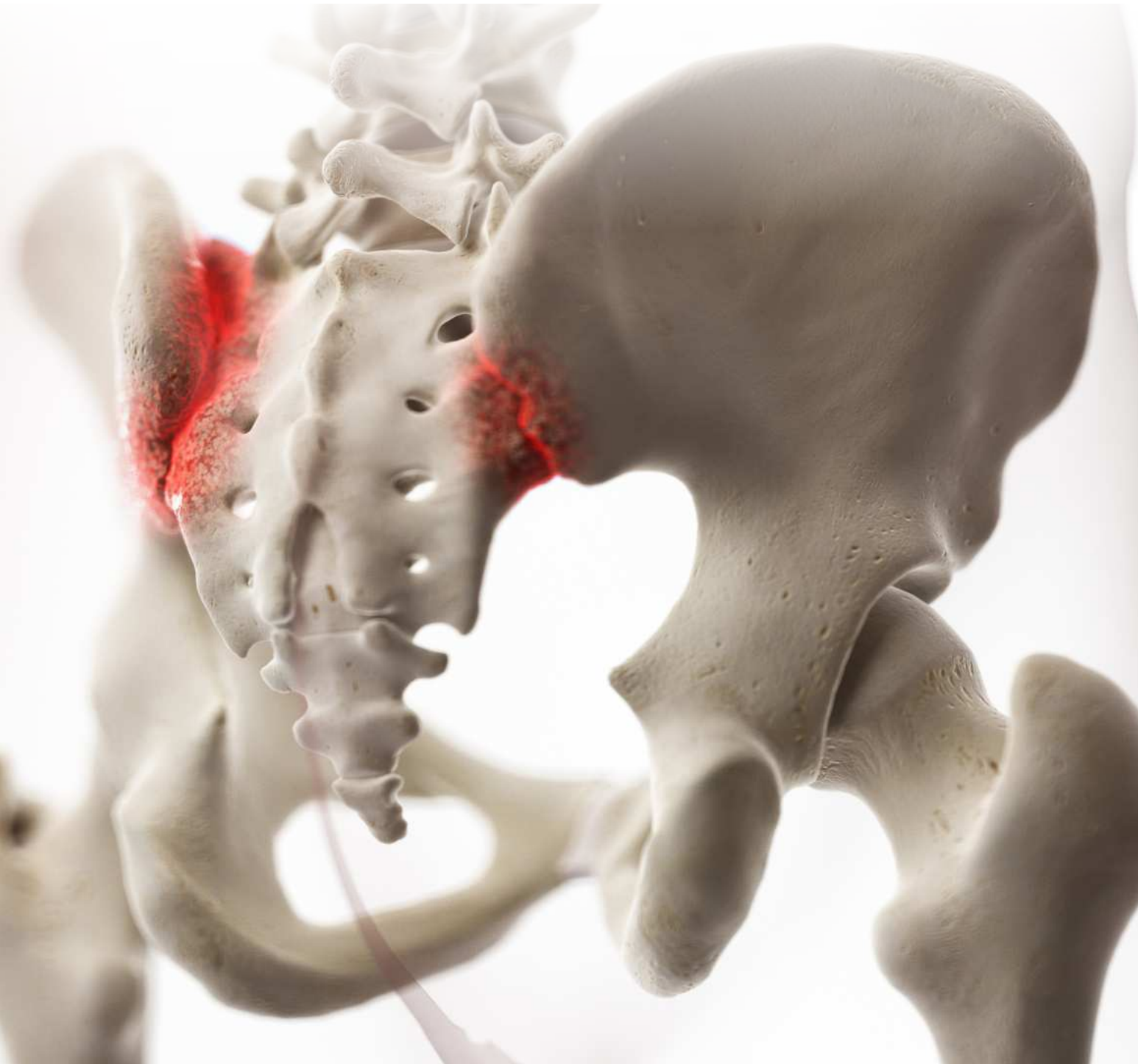
of pesticides. Another reason is that many fruits and vegetables are flown hundreds of miles and can sit in a warehouse for a period of time before getting to the shelves, creating yet more nutrient depletion. Additionally, if you buy ready prepared vegetables, such as sliced carrots, they will contain fewer nutrients than if the whole carrot home, cut up just before cooking."

Berry highlighted magnesium for a host of reasons.

"Magnesium has been somewhat of a wellbeing underdog, yet it is increasingly recognised as a key mineral for human health and, when it comes to the joints and bones, plays an essential role by stimulating the







activity of cells that are critical to bone formation,” she explained. “Magnesium influences the types of cells that the body requires for bone growth and repair, such as osteoclasts and osteoblasts, and it is believed that bones deficient in magnesium can be more brittle and susceptible to fractures. This hard-working mineral also assists with activating vitamin D, in order for the body to absorb and utilise calcium.

“Over-farming and our reliance on heavily processed foods continues to contribute to a decline in magnesium found in western diets, meaning supplementation is essential to elevate levels.”

And Dr Vik reiterated the need for the correct balance of vitamins and minerals for the bones.

“Put simply, it is a safe bet to say that anyone consuming a Western diet – even the healthiest Western diet – is K2 deficient. In fact, a recent study has confirmed that 97 per cent of the Western population does not obtain adequate vitamin K2 to enjoy bone and cardiovascular support.[1] Part of this issue stems from confusion about vitamin K. Vitamin K is actually a family of vitamins, the most important being K1 (phylloquinone) and K2 (menaquinones),” he explained.

“Vitamin K1 is found in leafy green vegetables, such as spinach, broccoli, and kale. However, K1 from food is very poorly absorbed – only about 10 per cent of it reaches the circulation, meaning a small amount can reach peripheral parts of the body. Moreover, the liver takes what it needs of K1 with little left for other tissues.

“Most believe that if they are consuming ample amounts of vitamin K1, they are getting bone and cardiovascular support, but this is not true. Because of its molecular structure, vitamin K2 (specifically as MK-7) is available extrahepatically to support other systems, such as bones and the vasculature, but it is much harder to obtain from diet alone. Natural vitamin K2 is produced during bacterial fermentation and is present in foods, such as quality cheeses (the most popular Western source). But even these products contain relatively small levels, which would require large amounts to be consumed.”



### ADDRESSING DEFICIENCY

So, looking specifically at nutrition, what do the experts consider to be the most important nutrients for healthy joints and bones, and how can you better support your clients in this regard?

"For joint problems, there is active research into natural substances that can help damaged cartilage such as glucosamine and MSM and other nutrients that could help with inflammatory arthritis, such as omega 3 fatty acids and vitamin D. Also, botanicals which contain turmeric (which has a long history of use in Ayurvedic medicine for the treatment of inflammatory problems), black pepper (which acts as an anti-inflammatory and also helps reduce the perception of pain), olive leaf, ginger, hops and quercetin," Dr Glenville recommended.

"For osteoporosis, the first nutrient that comes to mind is calcium. But many other nutrients are equally crucial for healthy bones, and these include magnesium, vitamin C, vitamin D3, vitamin K2, zinc and boron. Boron is an important mineral in relation to osteoporosis as it plays a crucial part in the conversion of vitamin D into its active form, which, in turn, is necessary for calcium absorption."

Sharp highlighted essential fats, commenting: "We know that omega 3 fatty acids help lubricate and thicken the synovial fluid, while also having an anti-inflammatory effect, especially in conditions like arthritis. Vitamin C

can also strengthen cartilage and prevent the loss of synovial fluid, while supporting collagen formation. It also contributes to a healthy immune system.

"Antioxidants such as polyphenols and anthocyanins are brilliant for modulating inflammation. Other well-known anti-inflammatories include curcumin, which may also act as pain relief. Opting for Meriva Curcumin phosphatidylcholine complex is best, as it has been shown to have high bioavailability without causing gastrointestinal complaints, which is often observed.

"They often lack in our modern diets, especially when looking at omega 3, vitamin D and antioxidants. The rise of ultra-processed foods and decrease in fresh produce rich in antioxidants coupled with high levels of stress, toxins and other poor lifestyle habits can have a detrimental impact on overall health, not just conditions relating to bones and joints."

Rachel Bartholomew BA (Hons), Dip ION, mBANT, CNHC, GHW, Nutritionist and Health Writer at Nutri Advanced, continued: "Ultimately, at the root of all of these joint issues, you will find inflammation. Therefore, in all instances, nutrients, herbs and spices that support inflammation will be indicated. Pure omega 3 is one of the most powerful supplements that you can take to help support inflammation, as the majority of us are

omega 6 fatty acid dominant, which fuels inflammation. Omega 3 fish oils help to swing the balance back to where it should be.

"Curcumin is the king of bringing down inflammation across numerous pathways in the body, all at the same time. Make sure you choose a high quality, well absorbed form which can get to work super-fast. A herb that complements the actions of curcumin is boswellia, which has been shown to maintain joint health and support joint flexibility."

She continued: "Collagen is the most abundant protein in our bodies, providing the building blocks for the structure and support of the connective tissues, which are vital for healthy joints. It is what holds the body together, like scaffolding, to provide structure and strength. Rheumatoid arthritis is a complex health issue involving the immune system, as well as the joints. Immune health and balance is linked to the gut, so supporting a healthy gut is important too. Vitamin D is essential for a healthy and balanced immune system and in the UK, we are commonly low in vitamin D, especially in the winter months. Non-dairy *Lactobacillus acidophilus* NCFM and *Bifidobacterium lactis* are beneficial bacteria that may support an optimal balance of bacteria in the gut."

And Holford suggested: "Glucosamine is a basic building material of your joints, while the mineral sulphur acts like the nails that hold it





together. Everyone knows about the link between glucosamine and healthy joints, although you'd do better with the more absorbable form, which is glucosamine hydrochloride. The best source of sulphur, found in onions, garlic and eggs, is MSM. If you have joint inflammation, take a daily supplement of fish oil to help reduce inflammation and a natural anti-inflammatory formula containing ashwagandha, turmeric, hop extracts, as well as glucosamine hydrochloride and MSM.

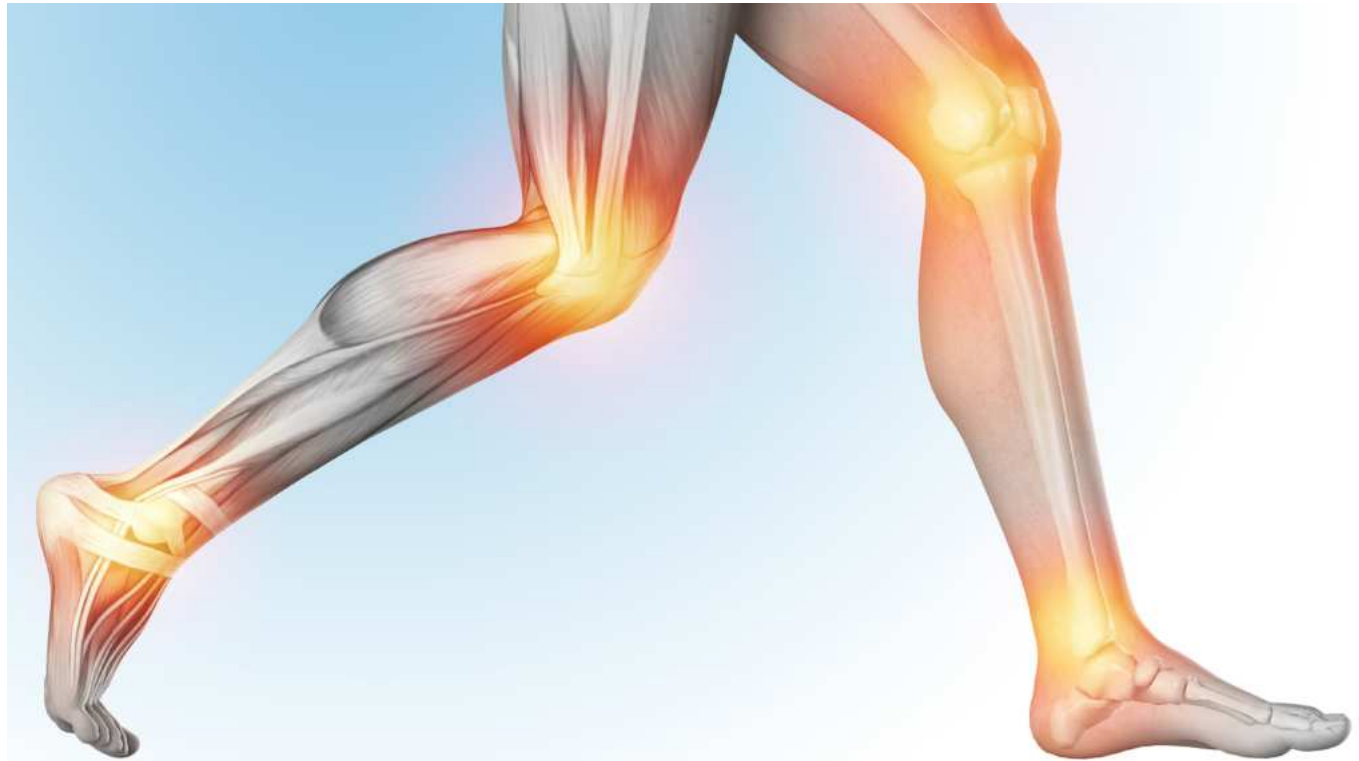
"Much less familiar than MSM and glucosamine are the B vitamins – a key element in the process of ageing. Inflammation is the root of the problem with arthritis, and inflammation is one of the symptoms found with 'inner global warming, which is linked to high levels of homocysteine. These excessive levels promote the release of pro-inflammatory agents in the body. Vitamin B6, another homocysteine-lowering vitamin, has also proven helpful for arthritis sufferers. Vitamin B6 shrinks inflamed membranes that line the weight-bearing surfaces of the joints, perhaps by helping decrease homocysteine and increasing SAME and glutathione, both proven anti-inflammatory agents. B6 also helps to regulate production of the prostaglandins, the body's own anti-inflammatory agents."

Looking in greater detail at bone health, we know there are certain minerals of critical importance, yet can be lacking.

"A typical GP prescription to ageing patients and postmenopausal women is calcium supplements, sometimes combined with vitamin D. Now, we all know calcium is a key constituent of bone, critical for building and maintaining a healthy skeleton. Vitamin D is needed to increase the absorption of calcium in our gut. But it's vitamin K2 that ensures calcium will reach bones and be incorporated into the bone matrix. [6] [7] [8] Without K2, calcium will remain in the bloodstream, where it can form deposits that harden our vessels, instead of helping build bone mass. Arterial calcification is a recognised risk factor for cardiovascular disease[9] [10]," Dr Bergeland explained.

Dr Vik went on: "Calcium supplementation is typically the first step we take to support bone health. But too much calcium left unattended in the body can have a negative effect – it can collect in the arteries and blood vessels, causing calcification, which puts a strain on the cardiovascular system.

"Think of vitamin K2 like a traffic cop. By activating K-dependent proteins already present in the body – osteocalcin and matrix Gla protein (MGP), respectively – K2 helps guide calcium to the bone matrix (supporting bone health) and inhibits calcium from depositing in the blood vessel walls (protecting cardiovascular health)."



### REDUCING RISK FACTORS

In addition to the already discussed dietary and supplement changes, much can be built into an effective protocol for clients with joint or bone related health issues.

Berry advised: "The saying 'If you don't use it, you lose it' has real clout here – it's important to remain active and keep the joints moving as we age. That being said, mediating risk also comes with a warning of too much exercise, or repetitive activity that can also put the joints and bones under too much strain – repetitive activity can also accelerate wear and tear. It's important to strike a balance, so ensure that exercise is varied, and that sports and activities are modified based on any ageing concerns, aches or pains."

Looking at it from an overall protocol perspective, Dr Glenville advised: "Depending on the issue and the underlying cause, the focus may need to be slightly different, for example, helping someone to lose weight or improving digestive function. But overall, it is helping someone get back into good health by eating well and using certain nutrients to help

with the problem. It is important to help the client control or manage stress where possible. The release of the stress hormones, adrenaline and cortisol, can increase inflammation generally in the body, including joints, and that can also increase bone turnover, inducing osteoporosis.

"Exercise is important as it has been shown to help control chronic inflammation. The client might think that exercise could make joint pain worse, but it is lack of exercise that may make joints more painful. When a person is not exercising, muscles can weaken, causing more stress on the joints. Exercise will help to increase strength and flexibility. Exercise is also going to help reduce weight if that is an issue, as being overweight will cause extra pressure on certain joints like knee joints. And, of course, exercise is crucial for osteoporosis because it is an issue of 'use it or lose it'."

And Dr Bergeland recommended: "Regular exercise is a very important and often overlooked parameter. Smoking is also associated with increased risk of osteoporosis, low bone density and increased risk of hip fracture[11]."



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# EXPERT ADVICE

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



I know there is an association with vitamin K2 and the heart, but can you explain more about how wide-ranging vitamin K2's benefits are to other areas of health?

**DR TRYGVE BERGELAND EXPLAINED:** Indeed, vitamin K2 participates in many functions in the body. As a necessary co-factor for the activation of calcium-binding proteins, K2 preserves both bone and cardiovascular health.

Calcium is among the top ingredients for supplementation and food fortification, and awareness and usage among consumers is high. Yet calcium metabolism requires tight regulation for this precious mineral to reach the bones, instead of remaining in our vascular system.

Vitamin K2 provides dual-action regulation of calcium in the body. This regulation helps maintain calcium balance and good health. First, K2 is the necessary co-factor for activation of matrix Gla protein (MGP) a calcium-binding protein. When activated, MGP binds excess calcium in the blood and prevents it from being deposited in arteries. The relationships among vitamin K2, MGP and arterial calcification are well-established.<sup>[1][2]</sup> Studies show that high levels of non-activated MGP are correlated with lower vitamin K intake and lower survival rates among cardiovascular patients.<sup>[3][4][5]</sup>

Another K-dependent protein is osteocalcin, produced by osteoblast cells in bones. Activated osteocalcin binds free-floating calcium in the blood and transports to the bone matrix. Fully activated osteocalcin ensures that the maximum amount of free calcium is utilised for bone building.<sup>[6][7][8]</sup>

Interestingly, latest research shows that poor Covid-19 outcomes correlate with low vitamin K2 status. A recent study evaluating serum vitamin K levels in Covid-19 hospitalised patients showed that those with poor outcomes of Covid-19

had the lowest levels of vitamin K.<sup>[9]</sup> In comparison, people who tested negative for SARS-CoV-2 infection showed adequate vitamin K levels. A second study later confirmed this correlation; K2 status was significantly lower among Covid-19 patients, and a statistical analysis showed mortality among Covid-19 patients to be strongly dependent on vitamin K status.<sup>[10]</sup> "This suggests that vitamin K plays a role in the disease mechanisms," the authors noted.

A review published in the *British Journal of Nutrition* even presented vitamin K deficiency as the potential missing link between lung damage and thromboembolism, two of the most severe outcomes observed in Covid-19.<sup>[11]</sup>

There is obviously a need for further experimental evidence. A clinical trial investigating possible benefits of vitamin K2 supplementation in Covid-19 patients has already been initiated by the Canisius Wilhelmina Hospital, Nijmegen, Netherlands. Funded by Kappa Bioscience, the randomised, double-blind, placebo-controlled KOVIT trial aims to evaluate whether vitamin K status affects elastic fibres degradation in the lungs.<sup>[12]</sup> This could open up new applications for vitamin K2.



## ABOUT THE EXPERT

Dr Trygve Bergeland is Vice President Science and Product Development at Kappa Bioscience AS, a Norwegian company and global provider of vitamin K2 as all-trans MK-7. Kappa Bioscience continually invests in R&D and manufacturing processes to offer best-in-class, cost-effective solutions to develop the vitamin K2 world a little further every day.





## Why is omega 3 so critical for children, and what considerations should be made when recommending a supplement?

**JO SHARP ADVISED:** We know that the omega 3 fatty acids are extensively researched and for good reason. The n-3 PUFAs have a profoundly positive effect on all body systems and play a role in cardiovascular health, brain development, neural pathways, immune health and so much more. That's because they are a key component of healthy cell membranes and affect the function of the cell receptors.

With fish consumption decreasing, especially that of oily fish, we need to consider what the best, purest and most bioavailable sources of omega 3 are, as well as how to get the optimal amount. It's no surprise that a 2016 global survey found that levels of EPA and DHA in most countries and regions are considered low to very low. This is alarming, especially when we take into consideration that over 60 per cent of the brain is made up of fat and DHA makes up over 90 per cent of the n-3 PUFAs. In humans, the development of the brain starts as early as week three of gestation, while the accumulation of the n-3 PUFAs increases in the last trimester of pregnancy and peaks in the early years.

Looking at children's brain development alone, its structure changes throughout the years; white matter increases in late childhood and adolescence, while grey matter decreases so the ratio of EPA and DHA must be considered to support each stage.

Research shows that omega 3 supplementation leads to improved cognition and focused attention, as well as having a positive impact on neurotransmitters and mental health. Naturally, we mainly tend to associate n-3 PUFAs with children's brains, but the impact of omega 3 supplementation in children goes beyond that. We have also seen that supplementation may lead to lower rates of allergies and other atopic conditions, as well as improved respiratory health. Some research also indicates it can improve sleep quality and duration, which is hugely important for their overall growth and development.

When recommending an omega 3 supplement, consider the following:

- The formulation – look for the optimal ratio of EPA and DHA. Children need both.
- High purity – avoid fillers, binders and other superfluous fats that we simply do not need.
- Bioavailability – omega-3 in triglyceride form will offer better and faster absorption.
- Third-party testing – limiting exposure to any contaminants, toxins and heavy metals.



### ABOUT THE EXPERT

**Jo Sharp** is a BANT registered Nutritional Therapist with a focus on neuroendocrine health. She runs an online and London-based nutrition clinic and is the Nutritionist for Minami.





## Can you explain how mycotherapy can support clients through seasonal allergies season?

### COLETTE HEALY

**RECOMMENDED:** Mycotherapy can provide timely support for seasonal allergies. The main support at this time is from Royal sun agaricus (*Agaricus blazei Murill*) because of its proven antihistaminic and immunomodulatory effects as a nutraceutical in allergies, including those to tree pollen. In addition, reishi (*Ganoderma lucidum*) can also help reduce inflammation and inhibit histamine release by mast cells.

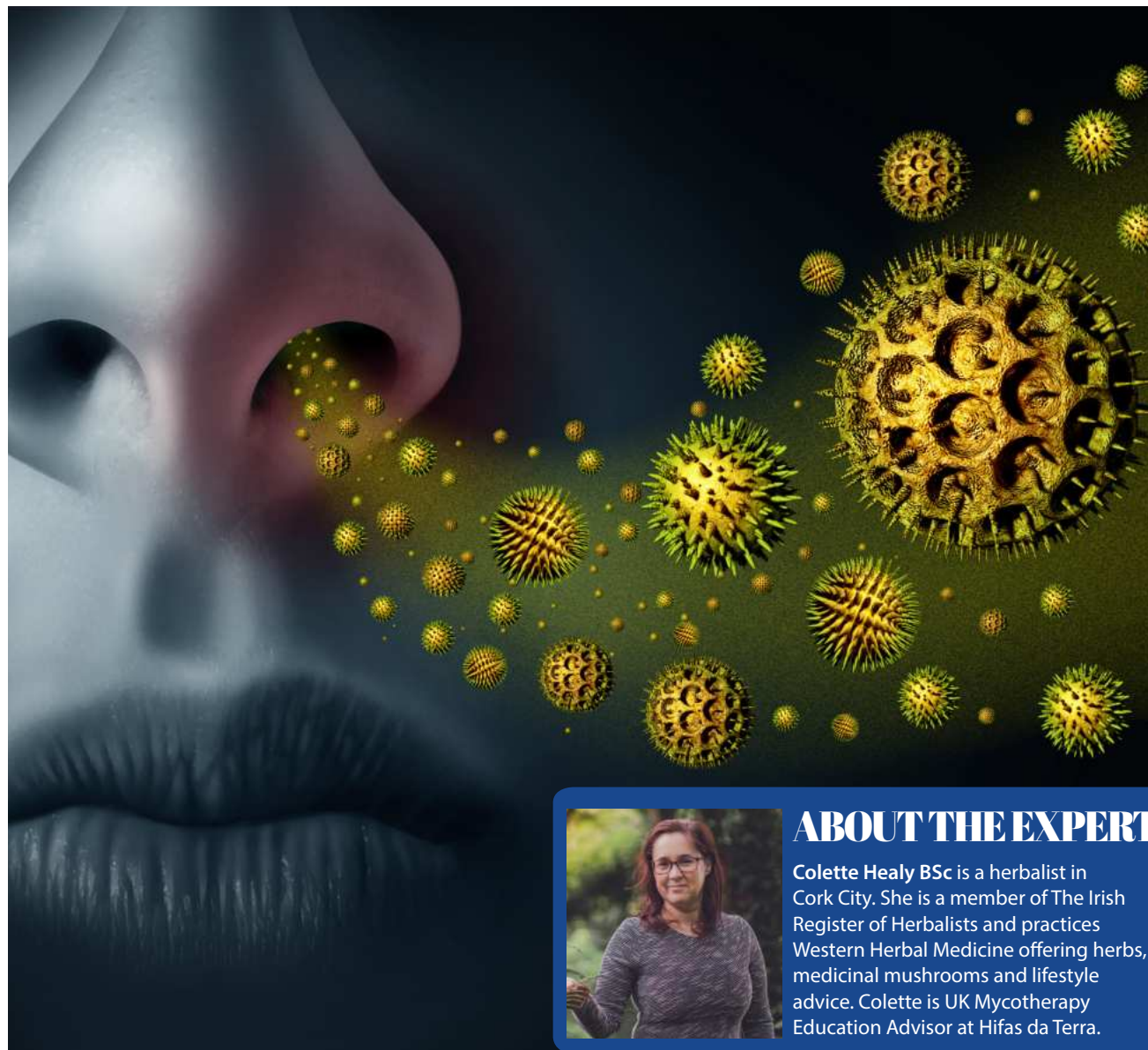
Allergy is a hypersensitivity reaction where the presence of foreign peptides in the mucous membranes triggers a Th2 dominant pro-inflammatory state. Medicinal mushrooms can dampen down this reaction. As immunomodulators, they have the ability to either upregulate or downregulate pathways to achieve a return to homeostasis and, with it, symptom relief.

*Agaricus blazei Murill* (AbM) not only stimulates a weak immune system but also brings balance to the Th1 and Th2 response and acts, therefore, as an anti-histaminic remedy, also due to specific biocomponents that inhibit histamine release by mast cells and reduce IgE specific allergy antibodies. Studies show that extracts of AbM may both prevent allergy development and be used as a therapeutic substance against established allergy (Ellersten

et al., 2009). Interestingly, a study in 2019 showed a significant reduction of general allergy and asthma symptoms, as well as in the use of medication, when supplementing with a mushroom extract of AbM in birch pollen allergic participants (Mahmood et al., 2019).

*Ganoderma lucidum* (reishi) has been characterised as a wonder herb and is considered a powerful medicinal mushroom with immune-modulating and immune-potentiating capabilities (Bhardwaj et al., 2014). The extracts of this mushroom contain triterpenes with antioxidant, antihistamine and a significant anti-inflammatory activity. In fact, it's suggested that *Ganoderma lucidum* has an anti-inflammatory action comparable to hydrocortisone without the negative side effects.

Any protocol would ideally be started two weeks before normal allergy symptoms appear each year and continued throughout the allergy season. Additional support is also available from other natural sources, such as nettles, cleavers, elderflowers, and quercetin. Quercetin, found in some foods such as onion and apples, can also be bought as a supplement, often with other supportive flavonoids. Some sufferers have found a physical barrier such as salve applied at the nostrils also useful to reduce irritants entering airways.



### ABOUT THE EXPERT

**Colette Healy BSc** is a herbalist in Cork City. She is a member of The Irish Register of Herbalists and practices Western Herbal Medicine offering herbs, medicinal mushrooms and lifestyle advice. Colette is UK Mycotherapy Education Advisor at Hifas da Terra.

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# Important nutrients for those following a plant-based diet

Leading Nutritionist and author, Dr Marilyn Glenville PhD, turns the focus on the critical nutrients for those adopting a vegan diet.

There has been a considerable increase in people following plant-based diets and those looking for more ethical products where none of the ingredients are sourced from animals. There are now over 600,000 vegans in the UK, a four-fold rise since 2006, and there are over 360,000 people who would describe themselves as lifestyle vegans who only buy products that are free from animal products, for example, supplements, clothing, cosmetics, etc. Many supermarkets now have a dedicated vegan section as they are noting the rise in people choosing plant-based foods.

There is also strong evidence to suggest that eating a more plant-based diet is healthier. A meta-analysis of nearly 100 studies on fruit and vegetable intake has shown that an intake above five a day shows major benefits in reducing the risks of cardiovascular disease, total cancer and all-cause mortality.<sup>1</sup> Eating seven portions or more of fruit and vegetables a day showed a 42 per cent lower risk of death by any cause compared to those eating less than one portion a day.<sup>2</sup> This study looked at general mortality, as well as death from cancer, heart disease and stroke, and found the risk of premature death from any cause decreased as fruit and vegetable consumption increased.







### INGREDIENT CAUTION

Over 90 per cent of vegans and vegetarians look for products that have an independent vegan verification – certified vegan rather than vegan friendly – and look for the most globally recognised and trusted trademark of The Vegan Society.

It is important that vegans and those following a plant-based diet support their health nutritionally and many will be wanting to know what the key nutrients that they need to think about are and also, what ingredients are contained in a supplement that could make it non-vegan. There are a number of animal ingredients in supplements that would not be suitable for vegans:

- The most obvious one is the capsule itself which can be made of gelatine. This is extracted from the skin, boiled crushed horn, hoof and bones, connective tissues, organs and some intestines of cattle, chicken, pigs and horses.
- If the supplement contains vitamin D3, it can come from lanolin which is obtained from sheep's wool wax. Vitamin D3 is an important nutrient as it carries many health benefits.
- Magnesium stearate may also be mentioned on the label and it is often pork derived. It is used as a lubricant to aid the manufacturing process as it means the machines can operate faster with the lubricant there, so more capsules can be filled in a shorter space of time. It, therefore, has a financial benefit to supplement companies. Without the lubricant, the machinery has to be slowed down, less heat is generated, and this is beneficial when formulating supplements using natural ingredients, such as herbs and enzymes. The lubricant has no nutritional benefit to the consumer, it is an inactive ingredient, it is only beneficial for the manufacturer.
- Ingredients from bees, such as bee pollen, may be contained in some supplements or superfoods.
- In digestive enzyme supplements, there may be lipase, which is an enzyme that helps digest fats, and this can be derived from the tongues of animals. Also, pepsin can be animal derived too.

### PLANT-BASED ALTERNATIVES

There are so many alternative ingredients available now so all the animal-based ones mentioned above can be avoided.

The capsule can be made from vegetable cellulose and not animal gelatine. Vitamin D3 can now be obtained from lichen and not sheep's lanolin.

I prefer supplements not to contain any lubricants (or any other non-active ingredients like anti-caking agents, fillers, binders) at all as they are not for your benefit. But, if the label says magnesium stearate, it needs to say that it is vegan. With digestive enzymes, these can also be vegan, but the label would have to confirm that.







### ADDRESSING DEFICIENCY

The one major nutrient that a vegan can become deficient in is vitamin B12, found mainly in animal foods. A vitamin B12 deficiency can give symptoms such as fatigue, weakness and memory loss. Iron is also an important nutrient for the reduction of tiredness and fatigue.

Calcium is important and needs to be included in a good multivitamin and mineral supplement for vegans, especially in the organic form of calcium citrate, which does not require stomach acid to be absorbed. Also, good levels of a vegan vitamin D3 is important to ensure efficient calcium absorption. Vitamin D2 can be obtained from mushrooms but research shows that vitamin D3 is 87 per cent more effective in raising and maintaining vitamin D levels than D2.<sup>3</sup>

Choline is in high amounts in eggs, harder to come by on a vegan diet and is important for liver function, healthy memory and cognitive function. Biotin is crucial for the release of energy.

Other important nutrients are magnesium for the reduction of tiredness and fatigue, zinc for the normal function of the immune system and vegan certified seaweed, providing iodine, which is crucial for healthy thyroid function and nervous system and cognitive function.



Dr Marilyn Glenville PhD is one of the UK's leading nutritionists. She is the author of 16 internationally bestselling books, including *The Natural Health Bible for Women*. Dr Glenville runs clinics in Harley Street, London, Kent and Ireland by phone and Skype.





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# Building Bionutri

**With a team of nutrition experts developing the business, Bionutri leads the way in product excellence and its commitment to the practitioner community. Co-founder, Robert Joy, set out the company's future plans.**

**T**he last year has undoubtedly been one of challenge for all, and for many Nutritional Therapists, it has meant adopting a whole new virtual way of working to ensure they could continue to meet the needs of their clients. By their side has been Bionutri, which also adapted to offer practitioners continued support from its expert team. It is this commitment to the sector that makes Bionutri one of the leading brands within the field.

Co-founder, Robert Joy, commented: "We've always regarded that direct interaction with practitioners as a fundamental part of Bionutri – the two-way discussion and development of subject matter between practitioners throughout and at the end of our talks is the way we learn from practitioners and from students, as much as the other way around.

"It seems an age away, but during February last year, Bionutri held seminars in London, Edinburgh, Dublin, Manchester and Brighton as the start of our Spring schedule. The rest of our seminar schedule in towns throughout the UK went the way of everything else from the start of lockdown last March, but we immediately replaced them with an online weekly event that has since become the favourite hour of the week for hundreds of practitioners. They can either watch live on Wednesday mornings or watch later, at their convenience (or both). CPDs certificates are supplied for those watching live."

It is this initiative, alongside the product range itself, that clearly sets Bionutri apart, with its vast array of expertise within the experienced team.

Robert added: "These presentations are from our own Technical Support team of Sue McGarrigle and Edward Joy so that the material comes from the people our practitioner customers are talking to by phone and email daily anyway. So, we've been able to offer very much more than simply a stream of CPD material and we've supported the new difficulties that distance practice has brought for so many practitioners over such a protracted period."



## BEHIND THE BRAND

Bionutri was founded by Robert, with John Stirling as Technical Director, back in 2007 and with some set goals. Both brought much experience to the trade, having worked together at a number of supplement companies prior to this,

"For those who have not yet got to know Bionutri, we like to think of ourselves as a breath of fresh air with a very different approach to the standard big brands of catalogues that offer hundreds of vitamin and mineral combinations that make it difficult to spot the wood for the trees," Robert advised.

"Bionutri takes a system approach to supplementation so that with a portfolio of less than 30 products, we provide a comprehensive range of supplements, so simplifying the practitioner prescribing task and removing the need to recommend several different supplements at a time. Our approach supports the practitioner in their prescribing task and improves client compliance."

In terms of product development, there are set parameters that the company operates when launching anything new.

"The nutritional value of many of the ingredients we use can be easily lost in an automated production process and we use the most up-to-date technology to ensure that we retain the most sensitive aspects of nutrients," Robert pointed out.

By way of example, Bionutri's Aquasorb process uses food ingredients rather than chemicals to emulsify fat-soluble nutrients into a freeze-dried powder that can then be encapsulated.

He added: "We also incorporate freeze-drying of botanical ingredients to remove moisture from the plant without rupturing the cell wall and we use very low temperature grinding to retain volatile



## PRODUCT INNOVATION

The company has continued to push forward with innovation, right from the launch of its first product, Ecobalance, back in 2007, which won Best New Product in *CAM* magazine (now called *IHCAN* and *Nutrition I-Mag's* sister magazine) and has continued to win awards ever since.

"That continues to be a favourite first-line supplement for many practitioners. Ecodophilus, Elderberry Complex, Immunophilus, Kefir Complex and Neuralactin Plus have been similarly awarded by *IHCAN* readers," Robert commented.

Developing new products remains important.

"We have about 20 different products and there are always products in development. Sometimes, a new product can go from drawing board to introduction within a year, but it can also be much slower. We have products not yet introduced that we started to think about five or six years ago," Robert explained.

"The first lockdown started just after the launch of our new range of Aquasol pure instant herbal tea powders, a brand new concept that we have managed to grow from an initial range of six products up to the current 18 different teas that support the work of nutrition and naturopathic practice quite differently to supplementation and have become as popular with practitioners for themselves as they are for their clients."



Edward Joy presenting one of the Bionutri webinars

actives, such as the essential oils within many botanical ingredients. These can be costly and time-consuming processes but are fundamental to maintaining the nutrient content of a fresh fruit or herb within a manufactured supplement. Without such techniques, a formula that can look impressive on paper may have little or no efficacy in practice."

In terms of how the products are made to such high quality, importantly, they are UK manufactured to full HFMA Good Manufacturing Practice (GMP) under a Quality Assurance System accredited to ISO 9001 so every stage of

the manufacturing process is documented, scrutinised and audited.

And Robert pointed out: "Purity criteria of raw materials are established so that when these are delivered in bulk, they are checked against the standard before they enter the production process. You would be amazed to see how often delivered raw materials can vary from an initial sample. Testing provenance is a constant requirement."

Nutritional Therapists have always been a key component of the business, especially when you consider the background of the senior team. The reason for such a commitment to this sector is simple, Robert explained.

"Bionutri products are formulated specifically for practitioners so the product focus is quite distinct from a supplement looking to sale in a self-service environment, whether retail or online," he explained. "A simple example is our Vitamin C Complex, where the broad spectrum of bioflavonoids we regard as fundamentally essential to the functionality of the vitamin C would not be appreciated by a retail customer who will commonly opt for a less

expensive alternative, but its value is understood by the practitioner to be intrinsic to its overall quality of the product, its bio-availability and its biological activity.

"Any food supplement is an expensive commodity. People who take the trouble to consult a Nutritional Therapist or Naturopath before deciding what supplements to take expect the best value from them, both in terms of overall cost and benefit and that is what Bionutri provides by considering the overall context of a nutrient, its co-factors and the secondary metabolites that are a necessary part of its function. We use the term 'integrative nutrition.'"

He added: "And because so many supplement companies are now controlled by the pharmaceutical industry, I think it's fundamental to our ability to deliver the best in nutrition with no outside agenda that Bionutri is independent of any outside interests."





# The compassionate cook

A leading pioneer of modern compassionate cuisine, chef, Day Radley, offers some vegan recipe ideas with her new offering, *Bo's Book*.



Fishfree fingers



Perfect hummus



Roti with spiced cauliflower



Chocolate nice cream





## Fishfree fingers

A great weeknight dinner. Serve with mash and peas or avocado, mayonnaise and mangetout.

**Serves/makes eight-10 fingers**

**Proper prep time: 30 minutes**

**Cooking time: 15 minutes**

### Ingredients:

- 2 sheets of nori
- 1 can (400g) chickpeas, drained and rinsed
- 1 can (400g) green/immature jackfruit
- 80g leek, finely sliced
- Sunflower or rapeseed oil
- ½ t salt
- 50g gluten free breadcrumbs

### Equipment:

- Frying pan
- Blender or food processor
- Large bowl

### Method:

- Heat a frying pan on a high heat. Add a sheet of nori, cook it until it starts to blacken and crumple. Remove it from the pan and do the

same with the other nori sheet.

- Put the nori into the chopper attachment of a hand blender or a food processor. Grind it until it becomes small flakes, put it into a large bowl.

- Add the jackfruit to the blender or food processor and mix until it is flakes but not so much that it becomes mush, add to the bowl with the nori.

- Heat a little oil, fry the leeks on a low heat until soft. Add the leeks, chickpeas and salt and blend until smooth. Add to the bowl and mix everything well. If the mixture is too dry, add a small splash of plant milk.

- Take a small handful of the mixture, squeeze it between your hands and roll into a sausage shape. Pour the breadcrumbs onto a plate, take one of the fingers and roll it in the breadcrumbs. Repeat this until you use all of the mixture.

- Pour a thin layer of oil into a frying pan, heat until very hot and fry the fingers on each side until browned and crispy. Drain on a clean tea towel to remove any excess oil.



PERFECT HUMMUS



ROTI WITH SPICED CAULIFLOWER



CHOCOLATE NICE CREAM





## Perfect hummus

This recipe for hummus is light and very flavoursome. It isn't heavy like some recipes can be.

**Proper prep time: 10 minutes**

### Ingredients:

- 1 can chickpeas, 400g
- 1tbsp extra virgin olive oil
- 2tbsp lemon juice
- 1tsp ground cumin
- ½ tsp salt
- ½-1tsp garlic powder
- 100ml plant milk

### Equipment:

- Hand blender or food processor
- Jug or bowl
- Chef's knife
- Chopping board

### Method:

- Drain and rinse the chickpeas.
- Add all of the ingredients to a jug or bowl. Blend until smooth. You may need to move the blender up and down so that the ingredients are blended well.

## Dukkah topping

Dukkah is a mix of ground spices, nuts and seeds. You can use it as a condiment for many different dishes. In this recipe, it makes hummus, an old time vegan favourite, go high end. It's a perfect dish for dinner party nibbles as it is quick and easy to make but looks a bit fancy!

### Ingredients:

- 1tbsp hazelnuts
- ½ tbsp sesame seeds
- 2tsp coriander seeds
- 1tsp cumin seeds

### Equipment:

- Baking tray
- Pestle and mortar

### Method:

- Preheat the oven to 200c/390f/GM6.
- Put all of the ingredients on a baking tray and toast for 10 minutes until browned. Cool and remove the hazelnut skins.
- In a pestle and mortar, roughly grind the nuts and seeds. Sprinkle the dukkah onto the hummus just before serving.



FISHFREE FINGERS



ROTI WITH SPICED CAULIFLOWER



CHOCOLATE NICE CREAM





## Roti with spiced cauliflower (by Chef Student, Oliver Lean)

This is a perfect recipe for sharing with a bunch of friends. Simply serve in big bowls and pop in the centre of the table. Let everyone create their own loaded roti but don't forget the napkins, this gets delightfully messy!

### Serves 4

**Proper prep time: 30 minutes**

**Cooking time: 30 minutes**

### Equipment:

- Large bowl
- Large baking tray
- Saucepan
- Small bowl
- Large bowl
- Rolling pin
- Non-stick frying pan

### Ingredients:

#### Spiced cauliflower

- One large cauliflower, broken into large florets
- 3tsp garam masala
- 2tsp turmeric
- 2tbsp cooking oil
- 2tsp salt

### Lentils:

- 2tsp cooking oil

- 1 large white onion, finely chopped
- 4 cloves garlic, grated
- A thumb-sized piece of ginger, grated
- 100g green lentils
- 4tsp garam masala
- 2tsp Hodmedod's Fava Bean Umami Oaste, yeast extract or dark miso
- 2tsp salt
- 600ml water

### Roti:

- 280g Hodmedod's Fava Bean Flour or gram flour
- 120g potato starch or tapioca flour
- 1tsp salt
- 4tbsp melted coconut oil, plus extra for brushing
- 140ml water

### Method

- For the spiced cauliflower, heat the oven to 200c/390f/GM6.
- In a large bowl, toss the florets with the garam masala, turmeric, oil and salt. Put the cauliflower onto a wide baking tray. Roast in the oven for around 25 minutes, until cooked through and slightly charred.
- For the lentils, heat the oil in a saucepan, and add the onion. Once it has started to soften, add the garlic and ginger. Fry for a few more minutes.

• Add the garam masala and stir. After a minute, add the lentils and cover with the water. Bring to the boil and cook on a high heat for about 10 minutes. Reduce heat and simmer until the lentils are very soft and the water has been absorbed. This should take no more than another 10 minutes.

• Add the fava bean umami paste and salt to taste.

• For the roti, mix the flour, potato starch, salt, oil and water in a large bowl. The texture should be only slightly sticky so add more water or flour if you need to.

• Use a rolling pin to make around 16 small, round and thin rotis. You may need some more flour to dust the surface and rolling pin.

• Heat a non-stick frying pan to a high heat. Brush the rotis with coconut oil, then place them in the pan. When bubbles start to form and the underside is starting to brown, flip them and cook on the other side. Once they are cooked, put them onto a plate and cover with a tea towel. Do this with all the roti.

### Finishing elements:

- Dairy free yoghurt
- Fresh coriander leaves
- Dried chilli flakes



FISHFREE FINGERS



PERFECT HUMMUS



CHOCOLATE NICE CREAM



## Chocolate nice cream

Nice cream, made with frozen bananas, is the easiest and healthiest vegan ice cream you can make. With our simple guide, you can create nice cream with all your favourite flavours.

### Makes one portion

**Proper prep time: 1 hour freeze time, plus 5 minutes**

### Ingredients (base recipe):

- 1 large banana

### Our additions:

- 2 large dates
- 1 tbsp cacao or cocoa powder

### Equipment:

- Hand blender
- Jug

### Method:

• Peel and roughly chop the banana. You should use either ripe or overripe bananas but not under ripe bananas. Under ripe bananas will not give you a good banana taste or the level of sweetness required. You can use bananas with slightly browned skin but should not use mushy bananas.

• Pop it into a bag and place it in the freezer for at least one hour. When freezing the banana, make sure the pieces are not stuck together, but rather lay side by side. If they are stuck together, it will be difficult to separate them when they are frozen so the pieces will be too big for a hand blender to deal with. You should freeze the banana for at least one hour until it is hard. You can freeze bananas for several months, so it's a great way to use up any uneaten bananas. The coldness of the frozen bananas and their thickening qualities make them a great addition to smoothies.

• Put the frozen banana into a jug, add the dates and blend until smooth. When blending the bananas, your hand blender may struggle, particularly if the bananas have been frozen for some time. You will need to push the blender down with some force in order for it to blend the bananas. It is advisable to use a hand blender that is 500 watts as the motor will be up to this job. When using dates, they must be soft. If they are not soft when you buy them, simply soak them in hot water for 10-15 minutes until they soften.

• Add the cacao/cocoa powder and blend again. Serve immediately.



FISHFREE FINGERS



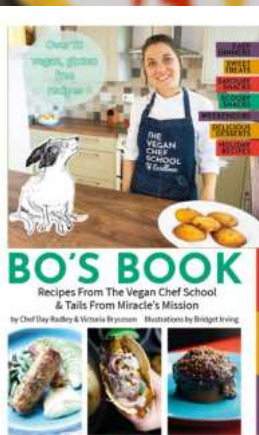
ROTI WITH SPICED CAULIFLOWER



PERFECT HUMMUS



*Bo's Book – Recipes from The Vegan Chef School & Tails from Miracles Mission, by Chef Day Radley and Victoria Bryceson, illustrations by Bridget Irving. Day is an international professional chef, food writer and founder of The Vegan Chef School, in London. She is considered a leading pioneer of modern compassionate cuisine. She is developing a new way of cooking and training the next generation of chefs how to create food that is good for the body, the planet and animals.*





# I-Mag giveaways



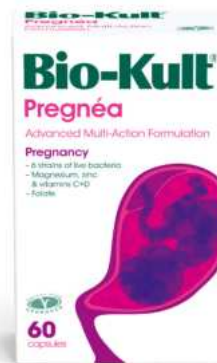
We showcase a selection of giveaways on offer to readers this issue.

## 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 to give away.**



## BIO-KULT PREGNÉA

New Bio-Kult Pregnéa, an advanced multi-action formulation, contains six strains of live bacteria, magnesium, zinc, vitamins C and D and folate to support women during pregnancy, from pre-conception to beyond birth.

Zinc contributes to normal fertility and reproduction, folate contributes to maternal tissue growth during pregnancy and magnesium contributes to a reduction of tiredness and fatigue. Zinc, vitamins C and D, and folate all contribute to the normal function of the immune system.

**I:Win: We have five boxes of 60 capsules up for grabs.**

## Enzyme Science GI Motility

The GI tract requires a healthy peristaltic function in order to achieve effective digestion, absorption, and elimination. GI Motility Complex works to support the small bowel and the stomach to promote healthy transit times.

This vegan formula contains ProDigest, a blend of two plant extracts: a lipophilic CO2 extract of ginger root (*Zingiber officinalis*) and a unique, patented triple standardised extract of artichoke leaves (*Cynara cardunculus*). This is further boosted with the beneficial compounds of apple cider vinegar.

**I:Win: We have three 60-capsule packs to give away.**







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