



A DIGESTIVE INVESTIGATION

An in-depth guide to managing clients' gut health

JOINT PROTECTION

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The 'King of the Sea Vegetables' is undoubtedly **Fucus vesiculosus**, also known as Bladderwrack. **Bladderwrack** is one of the few dietary sources of the rare sugar molecule fucose. Seaweed is a simple and yet fascinating plant that is a treasure chest of natural chemicals and beneficial ingredients not available from land vegetables. Seaweed draws from the sea an incomparable wealth of mineral, macro, vitamins (A,B,C,D,E,K, folic acid) and trace elements like iodine. Because of their unique position at the interface of sea and land, sea vegetables have developed many unique characteristics and properties and are used extensively as food in coastal cuisines around the world. Sea vegetables and seaweeds have been a part of diets in China, Japan, and Korea since prehistoric times. **Seaweed has many uses – we are using it in our bread and cakes to reduce salt and to add nutrients. We also sell culinary seaweed, seaweed salt and seaweed for Thalassio bathing at home!**

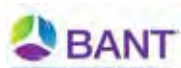
Help support and maintain optimal metabolic balance with Fucus Plus dietary supplement capsules. As readers of Eat Right For Your Type know, Dr. Peter D'Adamo is quite fond of the health benefits of sea vegetables. Sea vegetables contain many unique and healthful sugars known as polysaccharides that can be metabolized by the action of enzymes produced by the bacteria in our gut into 'prebiotics,' nutrients that encourage the growth of healthy bacteria flora. Seaweeds are also extraordinarily resistant to the development of 'biofilms,' the 'glue' that holds unhealthy bacteria together. Preventing the aging process may be the final one of the health benefits of Bladderwrack. The antioxidants in bladderwrack are able to keep the skin healthy and young.

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**Fucus vesiculosus – a
gift from the sea, find it
in a supplement or in a
loaf of bread!**



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Welcome



There are a lot of considerations to be made when studying Nutritional Therapy, not just when it comes to fulfilling your study requirements, but also when considering where your career will take you when you graduate.

These days, there are many options for graduates, whether that is going into practice in clinic, working with a nutritional brand to support practitioner

education, or moving into writing, to name just a few.

As a magazine dedicated to student and recent graduates of Nutritional Therapy, we want to ensure you have all the support you need to develop a good career. And so we have teamed up with Nutri Advanced to create the Education in Excellence Award. In partnership with Nutri Advanced, the award is designed to recognise students who have demonstrated commitment to learning, and we are encouraging all our readers – or tutors who want to put their students forward – to get their entries in.

It is simple to do, and, once nominated, you will then be asked to fill out a detailed application as to why you believe you are a deserving winner.

And it is worthwhile entering the award, as a number of prizes are up for grabs;

as well as securing the accolade, the winner will benefit from one hour per month of phone advice from Nutri Advanced, which can include both nutritional advice and/or setting up practice advice, as well as £500 of Nutri Advanced products.

The winner will also receive free subscriptions to *Nutrition I-Mag* and *IHCAN* for one year, the chance to write a mentoring scheme feature in *Nutrition I-Mag*, and will also win a place at the September *IHCAN* conference.

Nutri's Rob Sackett commented: "At Nutri Advanced, we are passionate about helping educate and develop students into successful healthcare practitioners. We know it can be a challenge to start your own practice and that's why we have created the student award in partnership with *Nutrition I-Mag*, to sponsor and support a student who is looking to make the move into practice."

So, what better reason than to visit www.nutritionimag.com and get your entry in!

Rachel

RACHEL SYMONDS, EDITOR

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

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

Meet The Team

EDITOR Rachel Symonds **CONTRIBUTORS** Wendy Richards, Marianna Sulic, Benjamin Brown, Sheila Downes **SALES DIRECTOR** Ruth Gilmour e: ruth.gilmour@targetpublishing.com
GROUP SALES MANAGER Abigail Morris e: abigail.morris@targetpublishing.com **SENIOR SALES EXECUTIVE** Maria Francis e: maria.francis@targetpublishing.com
DESIGN/PRODUCTION Hannah Wade e: hannah.wade@targetpublishing.com **MARKETING EXECUTIVE** Amelia De Grandis e: amelia.degrandis@targetpublishing.com
MARKETING DIRECTOR James Rix e: james.rix@targetpublishing.com **ACCOUNTS** Lorraine Evans e: accounts@targetpublishing.com
MANAGING DIRECTOR David Cann e: info@targetpublishing.com

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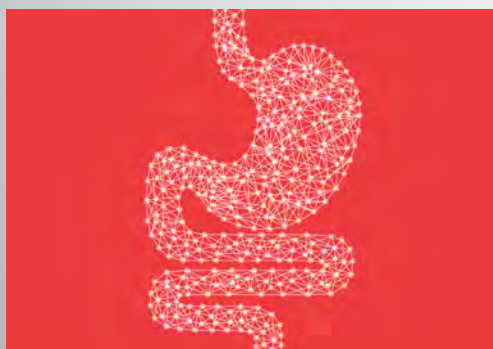
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Seminar, conference and webinar dates for your diary



in partnership with



NUTRITION I-MAG EXCELLENCE IN EDUCATION AWARD

We're on the look out for stand-out students who have excelled in the past year. You may have excelled academically, received glowing reviews from tutors or colleagues, or maybe you've gone that extra mile to help students in your class. Whatever the reason, we want to reward students of nutritional therapy for all their hard work and commitment.

The award is being run in partnership with **Nutri Advanced**, one of the leading suppliers of high quality nutritional supplements to practitioners in the UK. **Nutri Advanced** is passionate about nurturing students throughout their educational journey and hope these awards will inspire students to move into practice and form successful businesses that lead people towards living healthier lives.

So, if you think you deserve this award, or know someone who does, take two minutes to tell us why at:

www.nutritionimag.com/educationawards

Entries close Monday August 1, 2018, winner will be contacted by telephone on August 15, 2018.

NEW

THE WINNER RECEIVES:

- One hour per month of phone advice from Nutri Advanced, with guidance on how to set up your practice when you graduate
- £500 worth of free products from Nutri Advanced
- Free print subscription to *IHCAN* magazine for one year
- Free place at the September's IHCAN Conference
- Chance to write a mentoring scheme feature in *Nutrition I-Mag*
- Free lifetime subscription to *Nutrition I-Mag*

OUR CONTRIBUTORS

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



Victoria O'Neill

Victoria O'Neill is a graduate from the Institute of Optimum Nutrition, and has been a Nutritional Therapist for 20 years. She ran a practice in central London, specialising in mental health, she has a published book on children's health and writes recipe articles for a monthly magazine. She is a Clinical Psychoneuroimmunologist (cPNI) and a Master Practitioner in Neuro Linguistic Programming (NLP). Victoria is a Practitioner Account Manager with Hifas da Terra.



Jenny Logan

Jenny Logan DNMed is the Technical Training Manager for Natures Aid and has worked in the natural products industry for over 20 years. She is a Nutritional Therapist and ran her own very successful health food store for 13 years, before setting up in private practice.



Michela Vagnino

Michela Vagnino worked as a chef for over 10 years and has always been interested in healthy food and natural remedies. In 2010, she studied at the College of Naturopathic Medicine (CNM London), graduating as a Nutritional Therapist. In clinic, she combines the right foods for each person with traditional naturopathic remedies to create a specific plan unique to each and every one of my clients. She is also a Nutritional Advisor for Natures Plus UK.



Natalie Lamb

Natalie Lamb Dip NT mBANT is a qualified Nutritional Therapist, who studied a three year diploma in Nutritional Therapy at the College of Naturopathic Medicine (CNM) and is a member of The British Association of Nutritional Therapists (BANT). Natalie saw clients in a private clinic in London for two years before joining Probiotics International (Protexin), manufacturers of Bio-Kult and Lepicol ranges.



Beth Morris

After qualifying as a Nutritional Therapist from the College of Naturopathic Medicine, Beth Morris DipCNM works as a Clinical Nutrition Advisor at BioCare, while currently in the process of setting up her own private clinic. Her passion for nutrition developed from ill health as a child and she is keen to help others reach optimum health and wellbeing. She has now developed a particular interest in paediatric nutrition, allergies and atopy.



Benjamin Brown

Benjamin I. Brown ND is a naturopath, science writer and speaker. He is the author of *The Digestive Health Solution*, teaches nutritional medicine and speaks internationally, as well as contributing regularly to industry magazines and scientific journals.

**30 JUNE 2018
LONDON**

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FOR 2018**

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Book now from only £60 - www.nnaconference.co.uk or telephone 01279 810080

News bites

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

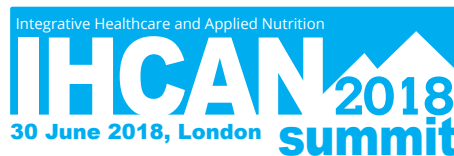
The UK's biggest integrative health event returns for 2018

Organised by the publisher of *IHCAN* magazine and *Nutrition I-Mag*, the IHCAN Summit returns for its fourth year in June.

Taking place on June 30, at its usual location of 155 Bishopsgate, London, the IHCAN Summit is now the UK's largest integrative health event, featuring more than 50 exhibition stands and four internationally-recognised experts, all covering their specialist subjects.

This year's speakers include:

- **Functional medicine-trained clinician trained by Dr Jeffrey Bland, Deanna Minich:** 'Why food alone is not enough: How to connect nutrition to nourishment'.
- **Research Microbiologist, Kiran Krishnan** (*below, middle*): 'A clinical update on the



surprising role of vitamin K2 in the brain, mitochondria and neurons. Arguably the most important nutrient to supplement'.

■ **NLP Master Practitioner and Trainer, Garner Thomson:** 'How language changes your brain – seven ways to talk to yourself and others (and never lose your keys again)'.

The final speaker will be confirmed in the next few days.

Book your place for only £65 (including VAT), which includes a full three course buffet breakfast and lunch, as well as a goody bag and all the video downloads sent to you after the event. Book securely online at www.ihcansummit.co.uk or telephone 01279 810080 (normal BT landline rates apply).



Ageing population to shape nutraceutical development, research finds

The ageing baby boomer generation has been pinpointed as the group set to shape the nutraceutical agenda over the next decade.

Research carried out ahead of Vitafoods Europe found that the industry is responding to the needs of millennials and generation Z, however, it is baby boomers that are expected to reign as the most important consumer group, even in 10 years' time.

The organisers of Vitafoods Europe asked 196 nutrition industry professionals to identify the two age groups that are currently most important to their business. Nearly three quarters (72 per cent) chose baby boomers – people currently aged between 49 and 72, with generation X (aged 36 to 48) close behind on 70 per cent. One in three (35 per cent) chose millennials (aged 25 to 35) and a quarter chose the 'silent generation' – people currently over the age of 72.

With baby boomers approaching old age – and expecting to live longer – their needs are prominent on the nutraceutical industry's agenda, with nearly a quarter (23 per cent) saying healthy ageing is the most important health benefit area for their company.



"Ageing boomers will indeed be an important target group," explained Dr Steffi Dudek, Senior Scientific Consultant at analyze & realize GmbH. "Their increased life expectancy and lifestyle require investment in health, wellbeing and performance. The optimisation of physical and mental performance will also be a strong need for this group."

When asked which groups would be most important to their companies in 10 years' time, boomers still came top on 55 per cent, but half of respondents (50 per cent) chose millennials. Reflecting that, some experts are advising nutrition companies to focus on the needs of younger 'digital native' consumers.

Many companies are also starting to focus on the needs of generation Z; one in five (19 per cent) companies said this group (currently aged 22 and under) is already a key market, with one in four (23 per cent) saying it will be in 10 years' time.

Family business shortlisted for accolade

HTC Health has been shortlisted for the Family Business of the Year Award in regional accolades.

The leading ingredient supplier has been shortlisted in the Inspiring Hertfordshire Awards 2018, organised by Hertfordshire Chamber of Commerce, which celebrate the expertise, achievements and outstanding contribution that businesses and individuals continually make to the growth of the county.

Founder of HTC Group, Gerry Olohan, commented: "We are constantly learning, progressing and are passionate about our customers and what we do. We are extremely proud and humbled to have been shortlisted, and this comes at a great time as we celebrate our 40th anniversary year and enter a new phase of growth."

European authority assess green tea catechin safety

EFSA has announced it has concluded that green tea catechins from dietary sources are generally safe following concerns.

The European Food Safety Authority (EFSA) carried out a review following concerns regarding their possible harmful effects on the liver, and has concluded that catechins from green tea infusions and similar drinks are generally safe. When taken as food supplements, however, EFSA said catechin doses at or above 800mg/day may pose health concerns.

Green tea is widely consumed for its purported health benefits, but there have also been reports in the EU and beyond of possible harmful effects. EFSA's assessment of green tea catechins was triggered by concerns from Nordic countries following reported cases of liver damage possibly associated with the use of green tea products.

Catechins are substances naturally present in green tea, the most abundant of which is epigallocatechin gallate (EGCG). In its safety assessment, EFSA looked at possible links between the consumption of EGCG in green tea infusions and food supplements and liver damage.

For green tea infusions, EFSA's experts concluded that there is generally no indication of liver damage, even after high consumption, and that the few cases of liver damage reported in humans are

likely due to rare and unpredictable reactions. Experts therefore considered catechins from green tea infusions brewed with hot water, and instant and ready-to-drink green tea beverages with similar catechin content, as generally safe.

For food supplements, EFSA's experts concluded – on the basis of human studies conducted with volunteers under medical supervision – that doses of EGCG at 800mg/day may be associated with initial signs of liver damage. While there was no indication of liver injury for doses below 800mg/day from green tea supplements, experts were unable to identify a safe dose based on available data.

In terms of recommendations, EFSA has recommended that further studies on the effects of green tea catechins be carried out. Experts also proposed clearer labeling of green tea products (in particular, food supplements) regarding catechin content and their possible health risks. EFSA's advice is now being forwarded to the European Commission, which will decide on the most appropriate risk management follow-up.



Micronutrients and heart health under spotlight at Parliamentary meeting

Parliamentarians met with health experts to discuss nutrient needs around cardiovascular health.

The first meeting of 2018 for the 'Micronutrients and Health' All-Party Parliamentary Group (APPG), the Secretariat for which is managed by the Health Food Manufacturers' Association (HFMA), was held at the Palace of Westminster, where Parliamentarians, stakeholders and industry professionals gathered to explore the topic 'Good for your heart? Claims for foods, micronutrients, and cardiovascular health'.

Introducing the meeting, new APPG, Chair Carolyn Harris MP, commented: "Cardiovascular, that is heart and circulatory, disease (CVD) causes more than a quarter of all deaths in the UK, that's over 150,000 deaths each year, an average of 420 people each day or one death every three minutes. This meeting will provide an opportunity to discuss this vital public health challenge, and emerging research on the central role of nutrition and micronutrients in relation to cardiovascular health."

Leading the presentations was Professor Julie Lovegrove, Director of the Hugh Sinclair Unit of Human Nutrition and Deputy Director of the Institute for Cardiovascular and Metabolic Research at the University of Reading. She argued that CVD can be effected for the better by improved diet, and shared insights into the impact of flavonoids on cardiovascular health and the importance of increasing fruits and vegetable intake in the population.

The next speaker was Professor David Richardson, a specialist in nutrition and food science, who currently holds a Visiting Professorship at the University of



Reading, School of Chemistry, Food and Pharmacy. In breaking down the extensive and costly process that companies are faced with when applying for health claims through the European Food Safety Authority, Professor Richardson highlighted recent success stories in the area of cardiovascular health, citing water soluble tomato extract, which had been shown to help maintain a healthy blood flow, and oat beta glucan, which lowers blood cholesterol in relation to reduced risk of heart disease.

Summarising both presentations, Harris urged the group to press for further recognition of the many foods that contain different bioactive compounds, as well as the micronutrients and other compounds, such as flavonoids, which are associated with a reduced risk of cardiovascular disease.

HFMA Chair, Robert Taylor, commented: "We were honoured to welcome Professor Julie Lovegrove and Professor David Richardson to share their insights into the issue of nutrition for cardiovascular health. The mortality rates cited by Carolyn Harris at the start of the meeting show that it is critical that associations like ours continue to work to raise consumer understanding of the nutritional interventions which can be so easily applied to help alleviate the pressure on the NHS."

In Research

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

Importance of vitamin D for athletic performance

A new review has examined the need for vitamin D and improving athletic performance.

Researchers writing in the *Journal of the American Academy of Orthopaedic Surgeons (JAAOS)* reported that higher vitamin D levels have been linked to reducing injury and improving performance.

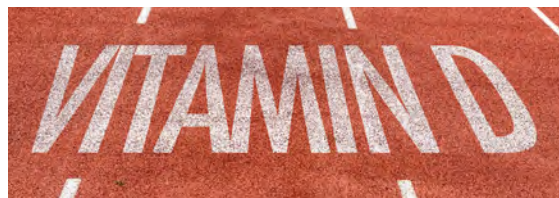
Orthopaedic surgeon and lead study author, Geoffrey D. Abrams, MD, explained that with higher serum levels of vitamin D playing a role in muscle strength, injury prevention and sports performance, it's essential for individuals to take necessary steps to ensure they're getting an adequate amount of vitamin D intake.

According to the review, vitamin D supplements help to increase muscle strength in athletes who are vitamin D deficient, with daily supplementation proven to be more effective than weekly or monthly doses.

In other vitamin D news, Rugby Super League Champions, the Leeds Rhinos, has undergone vitamin and mineral testing as part of its official partnership with BetterYou, to identify the nutritional gaps that could impair athletic gains.

Players undertook a vitamin D NHS blood spot test along with a hair sample mineral analysis (to check magnesium levels) at the beginning of the season in 2017.

Reporting on the results, BetterYou's nutritional expert,



Greg Weatherhead, commented: "As a collective, the majority's vitamin D levels were optimal (equal or higher than 100nmol/L) due to recent sun exposure, which is good news as vitamin D is essential for strengthening bones and immune function.

However, even though their levels were on average higher than the general population, a third of the players had sub-optimal levels, which needed to be improved.

"Vitamin D levels in athletes is greatly important, as demonstrated in this new review. When we looked at the players' mineral analysis, close to all of them had sub-optimal levels of magnesium, based on their calcium/magnesium ratio. Over half had high levels of calcium in relation to magnesium intake," he added.

"The key here is keeping magnesium and calcium in balance. An imbalance could be associated with numerous health conditions, ranging from cramping to heart disease. Where calcium is high relative to magnesium, there could be a risk of excessive deposition of calcium into the soft tissues (arteries and muscles)."

Stronger people demonstrate healthier brains

A large new study has concluded that people with greater muscular strength are likely to have healthier brains.

The trial, involving nearly half a million people, has revealed that muscular strength, measured by handgrip, is an indication of how healthy our brains are.

Dr Joseph Firth, an Honorary Research Fellow at The University of Manchester and Research Fellow at NICM Health Research Institute, used data from the 475,397 participants from all around the UK, which showed that on average, stronger people performed better across every test of brain functioning used. Tests included reaction speed, logical problem solving, and multiple different tests of memory.

The study revealed that the relationships were consistently strong in both people aged under 55 and those aged over 55, which is in contrast to previous studies, which have only shown this applies in elderly people.

Dr Firth commented: "When taking multiple factors into account such as age, gender, bodyweight and education, our study confirms that people who are stronger do indeed tend to have better functioning brains."

The study, published in the journal, *Schizophrenia Bulletin*, also showed

that maximal handgrip was strongly correlated with both visual memory and reaction time in over 1,000 people with psychotic disorders, such as schizophrenia.

"We can see there is a clear connection between muscular strength and brain health," Dr Firth added. "But really, what we need now, are more studies to test if we can actually make our brains healthier by doing things which make our muscles stronger – such as weight training."

Previous research by the group had already found that aerobic exercise can improve brain health, however, the benefit of weight training on brain health has yet to be fully investigated.

Dr Firth continued: "Our research has shown that the connections between muscular strength and brain functioning also exist in people experiencing schizophrenia, major depression and bipolar disorder – all of which can interfere with regular brain functioning. This raises the strong possibility that weight training exercises could actually improve both the physical and mental functioning of people with these conditions."



Obesity in the young linked with poor sleep

Researchers believe that lack of sleep could raise the risk of obesity in children and adolescents.

A new research study at the University of Warwick found that children and adolescents who regularly sleep less than the recommended amount of sleep for their age gain more weight when they grow older and are more likely to become overweight or obese.

The study, 'Sleep duration and incidence of obesity in infants, children and adolescents: a systematic review and meta-analysis of prospective studies', was published in the journal *Sleep*. It reviewed the results of 42 population studies of infants, children and adolescents aged 0-18 years, which included a total of 75,499 participants. Their average sleep duration was assessed through a variety of methods, from questionnaires to wearable technology.

The participants were grouped into two classifications; short sleeper and regular sleepers. Short sleepers were defined as having less sleep than the reference category for their age. This was based on the most recent National Sleep Foundation guidelines in the U.S. which recommends that infants (four to 11 months) get between 12-15 hours of nightly sleep, that toddlers (one to two years) get 11-14 hours of sleep, children in pre-school (three to five years) get 10-13 hours and school aged children (six-13) between 9 and 11 hours. Teenagers (14-17 years) are advised to get eight-10 hours.

Participants were followed for a median period of three years and changes in BMI and incidences of overweight and/or obesity were recorded over time. At all ages, short sleepers gained more



weight and, overall, were 58 per cent more likely to become overweight or obese.

One of the co-authors, Dr Michelle Miller, Reader of Biochemical Medicine, Health Sciences at Warwick Medical School, commented: "Being overweight can lead to cardiovascular disease and type-2-diabetes, which is also on the increase in children. The findings of the study indicate that sleep may be an important potentially modifiable risk factor (or marker) of future obesity.

"The results showed a consistent relationship across all ages, indicating that the increased risk is present in both younger and older children. The study also reinforces the concept that sleep deprivation is an important risk factor for obesity, detectable very early on in life."

Co-author, Professor Francesco Cappuccio, added: "This study builds on our previous analysis of cross-sectional data published in 2008. The importance of the latest approach is that only prospective longitudinal studies were included, demonstrating that short sleep precedes the development of obesity in later years, strongly suggesting causality."

Fatty fish and its effect on cholesterol under the spotlight

New research has confirmed the importance of both fatty fish and camelina oil for healthy cholesterol levels.

The new study, from the University of Eastern Finland, found that fatty fish increases the size and lipid composition of HDL particles in people with impaired glucose metabolism. These changes in the size and lipid composition of HDL particles make them beneficial for cardiovascular health, it was found.

The results, Published in *Molecular Nutrition & Food Research*, also found that camelina sativa oil decreases the number of harmful LDL particles.

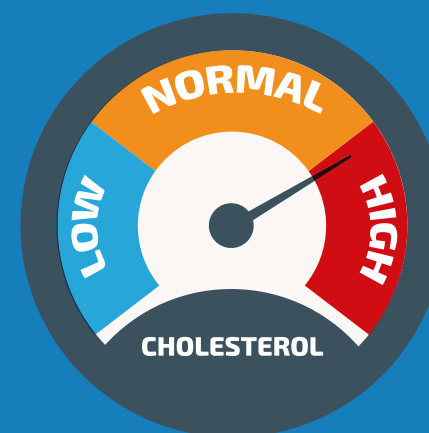
The researchers studied the effects of camelina oil and fatty fish intake on the size and composition of cholesterol-carrying lipoproteins.

Earlier research has shown that large HDL particles are associated with a reduced risk of

cardiovascular diseases, whereas a small HDL particle size may increase the risk. The LDL lipoprotein, on the other hand, is the precursor of LDL, which is also known as 'the bad' cholesterol. Previous studies have shown that long-chain omega 3 fatty acids found in fish have a beneficial effect on lipoprotein size and composition. Camelina oil, on the other hand, is rich in alpha-linolenic acid, which is an essential omega 3 fatty acid, whose associations with lipoproteins aren't well understood yet.

The study involved 79 Finnish men and women aged between 40 and 72, with impaired glucose metabolism. Study participants were randomly divided into four groups for a 12-week intervention; the camelina oil group, the fatty fish group, the lean fish group, and the control group. People in the lean and fatty fish groups ate lean or fatty fish four times a week, and people in the camelina oil group were asked to use 30ml of camelina sativa oil daily. Participants in the control group were allowed to eat fish once a week, and the use of camelina oil and other oils containing alpha-linolenic acid, such as rapeseed oil, was prohibited.

The researchers found that eating fatty fish increased the size and lipid composition of HDL particles, and that the use of camelina oil decreased the number of harmful LDL particles. Eating lean fish, however, was not associated with changes in the number, size or composition of lipoprotein particles.



New to market

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

MIND SUPPORT FROM MOTION



Mental and emotional health has been the focus of the

latest innovation from sports nutrition brand, Motion Nutrition.

Power Up and Unplug have been developed under the brand's Neuro Motion range, comprising day and night nootropics, which have been developed in partnership with Clinical Neuroscientist, Miguel Toribio-Mateus.

Power Up, for the start of the day, has been formulated to increase mental energy, memory, mood and brain health and contains gotu kola, panax ginseng, and organic lion's mane, in addition to the most bioavailable forms of B vitamins, vitamin D, iron, folate and manganese.

And Unplug, for the night time, is designed for stress relief, restful sleep and brain longevity, blending powerful adaptogens, ashwaganda, rhodiola and bacopa monnieri. It also boasts the most easily digested sources of magnesium, zinc, iodine and L-theanine.

NEW TO NUTRI

Nutri Advanced has unveiled its latest innovation in the form of Cardi-E, an innovative liquid preparation of vitamin E containing a mixture of natural tocopherols.

Previously, alpha tocopherol was thought to be the main type of vitamin E and is still commonly found as the main source of vitamin E in many supplements. However, more recent research has shown that there are actually three significant types of tocopherol – alpha, delta and gamma, and a blend of these may be more beneficial than just alpha tocopherol alone.

This new formula is suitable for vegetarians and vegans and the liquid form means it's easy to achieve varying dose levels, ideal if you're recommending to a variety of age ranges. Cardi-E is also free from any added extras, with each dose providing people with pure vitamin E.



PHARMA NORD FOCUSES ON K2 WITH NEW LAUNCH

Vitamin K2 is the latest launch from Pharma Nord with the creation of K-Pearls Bio-Vitamin K2.

Developed using a patented organic process that uses natural plant sources, this new supplement provides a form of K2 shown to be safe, stable, bioavailable and bioactive. It provides menaquinone-7 (MK-7), the most biologically effective and long-lasting K2 form in research, and contains 100 per cent trans isomers, the most bioactive form of K2 MK-7.

Manufactured to pharmaceutical standards, K2 is lipid soluble so it's best absorbed by the body in the presence of fats. Bio-Vitamin K2 comes in small, easy to swallow oil capsules to help ensure digestive absorption.

BETTERYOU UNVEILS IRON INNOVATION

Described as revolutionary, BetterYou has launched its new creation in the form of Iron Oral Spray.

The new innovation delivers 5mg of highly bioavailable iron combination, contributing to the normal function of the immune system, cognitive function, and helps with the reduction of tiredness and fatigue.

It is designed to offer a solution to the digestive discomfort and poor absorption experienced from ingested iron supplements as the tiny droplets absorb quickly into the inner cheek for immediate absorption into the rich vein network below, passing the nutrient directly into the bloodstream for immediate use. The natural baked apple flavoured formula is suitable for vegetarians and vegans.

BetterYou has also further developed its transdermal magnesium range with Magnesium Sleep Mineral Lotion (available in adult and junior variations) and Magnesium Bone Mineral Lotion.

The Magnesium Sleep Mineral Lotion contains a combination of magnesium, lavender and chamomile to relax tired muscles and quieten the mind to promote a restful night's sleep. The dermatologically tested formula is free from parabens, synthetic fragrance and colour.

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BANTNews

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



NETWORKS – LOCAL NETWORK MEETINGS AND REGIONAL BRANCH EVENTS BRING EDUCATIONAL AND NETWORKING OPPORTUNITIES FOR MEMBERS

The BANT Networks now number 33 across the UK and Europe. They are an invaluable member benefit, giving full and student members an opportunity to gain new information from speakers, network with each other, discuss nutritional therapy-specific issues and provide support for one another. The meetings also give members a chance to discuss matters related to managing their businesses, sharing ideas and methods, ultimately building a thriving local community of Nutrition Practitioners.

"Running a Local Network for BANT is a great chance to get to know other practitioners in your local area, opening up networking and cross-referral opportunities, as well as making new friends. Local Network Coordinators (LNC) have the additional benefit of making contact with a range of speakers as part of the process of organising talks for the group," commented Caroline Sherlock, Local Network Coordinator and London and South East Regional Branch Chair.

"The meetings are obviously arranged at a time that suits the LNC, meaning you'll never miss out on a free education session! Volunteering for BANT as an LNC also enables you to be part of the large nationwide team of like-minded

individuals, a nice change if you work alone. Knowing that there is a support structure in place to assist in the role is hugely helpful."



The Regional Branch Meetings have been a great success, with 14 events being held across the UK over the past two years. These subsidised local events give members an opportunity to listen to leading speakers on topical subjects relating to nutrition and nutritional therapy practice, and they are also another opportunity for members to connect with one another, as well as the wider healthcare community. The majority of Regional Branch conferences are open to BANT members and non-members alike while the Local Network meetings are for BANT members only.

Aileen Smith, North Regional Branch Chair, added: "I am really enjoying my role as Regional Branch Chair as it allows me to arrange events that BANT members living outside of London get a chance to attend. The role also gives me the opportunity to network with colleagues and suppliers in the profession. It's really rewarding when members tell us they enjoy the events and ask that we keep arranging them. I feel my volunteer role makes a difference. The regional events are supportive to all of us in practice and

great for student members too"

To see which events are coming up, BANT members should [click here](#).

Non-BANT members should follow the BANT Facebook Page, @bantonline, to receive notifications of BANT events.

 BANT Local Networks	 Regional Branch Meetings
<ul style="list-style-type: none"> 30 Local Networks across the UK, 7 internationally 	<ul style="list-style-type: none"> 5 RBs across the UK acting as regional hubs to the Local Networks
<ul style="list-style-type: none"> Each Local Network run by a LNC 	<ul style="list-style-type: none"> Each RB run by a committee; typically a collaboration of LNCs in that region
<ul style="list-style-type: none"> Local networking & knowledge sharing with other NTs 	<ul style="list-style-type: none"> Regional Networking with NTs & other healthcare professionals
<ul style="list-style-type: none"> Meeting agenda based on local group's interests 	<ul style="list-style-type: none"> Meeting agenda based on regional interests and industry research & development trends
<ul style="list-style-type: none"> Types of speaker – typically limited to speakers from either a supplement company, laboratory testing company or relevant professional services 	<ul style="list-style-type: none"> Types of speaker – typically, 1+ speakers including industry experts, disease specific researchers, supplement companies, laboratory testing companies
<ul style="list-style-type: none"> Some collaboration between LNCs 	<ul style="list-style-type: none"> Opportunities for greater collaboration & networking between LNCs
<ul style="list-style-type: none"> Atmosphere informal, intimate 	<ul style="list-style-type: none"> Atmosphere mini conference style
<ul style="list-style-type: none"> Open to all BANT members 	<ul style="list-style-type: none"> Open to BANT members and non-members
<ul style="list-style-type: none"> *Meetings free 	<ul style="list-style-type: none"> Meetings low cost (subsidised) for BANT members; normal charge to non-members



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May conference sold out – book your place for Functional Sports Nutrition before it's too late

Ensure you don't miss out on the popular 2018 IHCAN Conference series.

Our 2018 conference series has had the best start yet, with the third event on Alzheimer's with Dr Dale Bredesen selling out in record time.

On May 19, internationally recognised Dr Bredesen, expert in the mechanisms of neurodegenerative diseases, will address more than 200 practitioners for the entire day on the topic 'First Survivors of Alzheimer's: What Have We Learned?'

And don't worry if you've signed up – you will have breaks! Dr Bredesen is delivering his fully referenced material in three 90-minute slots.

Although this event is sold out, some places may become available due to late cancellations, so to add yourself to the waiting list, please go to www.ihcanconferences.co.uk/alzheimers-may-19-2018-waiting-list/

PLACES RUNNING OUT FOR FUNCTIONAL SPORTS NUTRITION

After the success of last year's conference on Functional Sports Nutrition in association with *Functional Sports Nutrition* magazine, we will be back by demand with four of the industry's top experts to bring you a full day of cutting-edge, CPD accredited sports education – taking place on Saturday, June 9, at the Cavendish Conference Centre, London.

Kickstarting the day will be Ross Austen, who excels in providing the highest level of support of those looking to take the first steps towards a more health and active lifestyle. He will be here to present 'Preventing inadvertent doping – Best Practice'.

Renee McGregor, leading performance and eating disorder specialist dietitian with over 15 years' experience working in nutrition, will be joining us as the second speaker and will look



into 'How food trends and food fads can cause a dysfunctional relationship within athletes on the pursuit for optimal performance'.

"We know that nutrition plays an integral part in athletic performance, ensuring that there is sufficient fuel to train and optimal recovery after. Athletes are always looking for ways to improve and further their progression. While manipulating your diet is key for success, it is important to understand how food trends and food fads can cause a dysfunctional relationship within athletes on the pursuit for optimal performance," Renee explained.

Our third speaker of the day is Nutritional Therapist and Sports Nutrition Consultant, Paul Chamberlain, who is recognised in helping people with all kinds of health disorders, and athletes from different sports, to achieve their personal health and performance goals.

An energetic speaker who has lectured extensively around the world, Paul will present 'Why Athletes DO need supplements' in a unique approach in which he is able to combine his extensive nutritional expertise with Neuro Linguistic Programming (NLP) techniques that allow his clients to have both the knowledge and motivation to make the changes necessary for optimal health and performance.

In this session, Paul will explore the role of supplements in helping athletes to achieve a health base, incorporating them into an overall programme that keeps them healthier for longer periods and thereby supports consistent, high quality training.

This session will delve into some recent developments in the science of supplementation for athletes, especially around immune and gut health, with a view to maintaining both consistent health and consistent training.

And to finish off an exceptional day of Functional Sports Nutrition education will be Dr Samuel Impey, presenting on the topic of 'Fuel for the work required: Practical application of nutritional periodization in elite cycling'.

Every conference features an exhibition area populated by specialist professional-practice exhibitors.

Places at the June Functional Sports Nutrition conference are very close to selling out, so we recommend securing your place now to avoid disappointment. Standard tickets are priced at £95, with significant discounts available for previous attendees, students and members of associations.

To book your place, go to www.ihcanconferences.co.uk or call the team on 01279 810080 now to book your place.



Saturday, June 30, is the date for the renowned IHCAN Summit, which for 2018 will be co-located with the Naturopathic Nutrition Association (NNA) annual meeting. Bolt on this event for £65 – saving another £10 – when booking your place at the IHCAN Conferences.

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'How food trends and food fads can cause a dysfunctional relationship within athletes on the pursuit for optimal performance.'

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²Journal of Appetite, 2012: the Alpro Foundation awarded results in obesity

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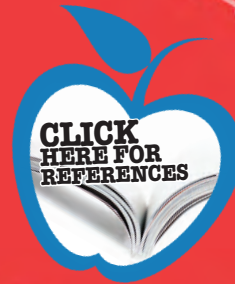


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RESET THE GUT

With specific nutritional interventions, alongside a range of effective lifestyle recommendations, you can make a huge difference to the digestive health of your clients.



When you consider that there are more than 25 different conditions all relating to the digestive system – and that's without adding in associated conditions that can be caused or made worse by an unhealthy gut – it is quite clear that our collective guts aren't in the best of health.

Some may be short-term (constipation, diarrhoea, etc.), but others are more chronic, affecting sufferers in the long-term; here, we're talking about such wide-ranging issues as IBS, Crohn's, IBD and diverticulitis, to name a few.

The good news is gut health is one of the most heavily researched areas when it comes to nutrition, and this can only make your jobs as Nutritional Therapists easier in terms of being able to better understand the correct protocol.

"More than 2,000 years ago, Hippocrates said that 'all disease begins in the gut'. I feel this is still relevant today and believe too that means that optimal health throughout the whole body must also begin in the gut," commented Nutritional Therapist, Natalie Lamb, who is Technical Advisor at Protexin, advising for both the Bio-Kult and Lepicol brands.

FOCUS ON THE GUT

Gut health has become one of the most widely discussed topics in recent years, not just among the nutritional therapy community but among the general public too. And while this is to be welcomed, we do also see a lot of misinformation, meaning people are perhaps misdiagnosing themselves without seeking the appropriate advice.

Lamb commented: "I would say the media has had a big part to play in bringing gut health to the forefront of health pages and people certainly seem more open to talking about their tummy troubles – it is less taboo

than it once was I guess. There are a number of top selling books on gut health, popular TV documentaries, such as Michael Mosely, and modern-day podcasts listened to from a phone are increasingly popular as an educational tool for those on the go.

"In terms of Nutritional Therapists, there is an abundance of research being published on the gut microbiome, much influenced by Tim Spector's British Gut Project. I find it a really exciting area to be working in."

"Ongoing research is highlighting the novel, complex, and far-reaching ways in which the health of the gut impacts the health of the entire body and how it can drive dysfunction in every body system, ranging from autoimmunity to sex hormone imbalance and anxiety."

Nutritional Therapist, Beth Morris, Senior Clinical Nutrition Advisor at BioCare, continued: "The topic of gut health has always been a key interest for registered Nutritional Therapists as it has long been considered the seat of all health, but it has certainly gathered momentum in recent years with the surge of research interest in this field. Ongoing research is highlighting the novel, complex, and far-reaching ways in which the health of the gut impacts the health of the entire body and how it can drive dysfunction in every body system, ranging from autoimmunity to sex hormone imbalance and anxiety. Therefore, gut health can be an incredibly fruitful avenue to explore for most clients. It is for this reason that I think more and more registered Nutritional Therapists are focusing on it.

"In terms of the general public, much of this research is feeding into mainstream media, with many articles and TV programmes now available which are discussing the broad topic of gut health and our microbiome. As such, more and more of the general public are now trying fermented foods, supplementing probiotics and experiencing first-hand the positive effects which these health interventions can have."

DECLINING GUT HEALTH

We talk about it a lot, and we read about it a large amount, but is it the case that our gut health is in decline, or is it simply that we are more open to talking about it that it seems so prevalent?

"It certainly appears to me that gut health is on the decline in the UK. I speak to many more people in and out of work that report having gut issues of some sort. IBS, for example, is now reported to affect between 10-20 per cent of the population.¹ The typical Western lifestyle of a nutrient sparse diet high in additives and pesticides, lack of exercise, sleep and sunshine, busy, often stressful lifestyles, alcohol consumption, increased hygiene and the overuse of antibiotics are just some areas that are believed to affect our gut flora balance and our overall health," Lamb pointed out.

Morris pinpointed the huge role that our changing diets has had on the health of our gut.

"We cannot underestimate the impact of the shift in our eating habits, and the types of foods we are currently consuming, on the digestive health of us as a nation. In the 1940s, rural and even urban households relied on gardens and allotments to provide local, organic, and seasonal fruit and vegetables. Today, however, the majority of the UK population relies on processed food laden with additives, salt, and rancid fats, and only a limited amount of fruits and

vegetables which, to make matters worse, have been conventionally grown and often shipped from the other side of the world," she explained.

"One recent study revealed that 49 per cent of the people surveyed only ate fresh food less than once a day in an average week, a shocking statistic and a far cry from the diet of previous generations! Combined with our stressful, modern lifestyles, it is no wonder that digestive disorders and conditions associated with poor gut health, like IBS, IBD, and autoimmune disease, are a common clinical encounter and seemingly on the rise."

ISSUES TO WATCH

So, what do the experts cite as the most common issues you are likely to see in clinic when you come to practice?

Lamb reported: "The majority of calls I receive are from those with Irritable Bowel Syndrome (IBS). IBS is not a disease in itself, but a syndrome with a collection of symptoms, consisting of bloating, pain, diarrhoea and/or constipation. IBS is typically a diagnosis of exclusion, when the GP has ruled out any other complicated diagnosis. IBS could be described as a malfunction of the digestive system, with no damage identified. An imbalanced microbiota, low grade level of inflammation in the digestive tract post a bout of gastroenteritis, small intestinal bacterial overgrowth (SIBO), or a malfunction of the nerves in the gut wall are all possible causes."

Morris added: "The most common digestive complaints I tend to see as a registered Nutritional Therapist are symptoms such as bloating, constipation, acid reflux, abdominal pain, flatulence, and diarrhoea. Even clients with conditions seeming unrelated to digestion do often present with these symptoms.

Common diagnosed conditions are coeliac disease and food allergies/intolerances, IBS, IBD, Crohn's disease, ulcerative colitis, and gastroesophageal reflux disease (GERD)."

But she also reiterated the issues to be aware of that stem from poor diet.

"Put simply, some of the most common factors affecting our digestive health are stress,ⁱⁱ medications (for example, antibiotics,ⁱⁱⁱ proton pump inhibitors^{iv}), alcohol,^v a low intake of plants, and a sedentary lifestyle. We also need to consider the role played by the rise in use of food additives, such as bulking agents, colourings, emulsifiers, flavour enhancers, preservatives, and sweeteners. This increased intake of food additives is starting to raise health concerns, not least in relation to gut health and the systemic health impact of a dysfunctional gut," she explained, adding: "For instance, they have been identified as a possible mediator of increased intestinal permeability (or 'leaky gut') and so, implicated in the rising prevalence of autoimmune disease^{vi} along with other well-established mediators such as gluten containing grains.^{vii} Regular intake of dietary emulsifiers, in particular, has also been associated with IBD risk.^{viii}

"It is also commonplace nowadays for us to eat on the go or eat alone in front of the television (the opposite of mindful eating!), and most families no longer sit down for a meal together. Meal settings and habits can affect food intake, the type of food consumed, and how well we chew and digest that food. Various studies show an association between family meal times and higher intakes of fruits and vegetables, and an inverse association with ready-meal consumption.^{ix} These factors indicate that family meal times may be associated with higher fibre intakes, vital for optimum digestion."

Marianna Sulic, Nutritional Therapist for Udo's Choice in the UK, continued: "Complaints of heartburn and indigestion which may be accompanied with burning, abdominal bloating after eating, cramping in the stomach, excessive burping or flatulence, constipation, diarrhoea or alternating between both, as well as, gastritis, nausea and pale coloured stools are all signs and symptoms that the digestive system is having difficulty coping with food, and this is frequently due to a lack of stomach acid and digestive enzymes in the small intestine, as well as, a possible imbalance of gut bacteria."



And let's not forget the volume of health concerns that are inextricably linked with the gut.

"I believe that any health issue in the body could arise if the gastrointestinal tract is not functioning optimally. It is imperative the digestive system is working well to be able to break down and absorb nutrients from all the valuable food that we consume, while preventing the absorption into the bloodstream of undesirable molecules, such as undigested proteins, pesticides, heavy metals etc. A nutrient deficiency in any organ or system in the body could be overcome by adequate digestive function," Lamb pointed out.

"Many experts now believe that the development of auto-immune disorders begins in the gut. An imbalance in gut microbes and intestinal inflammation is increasingly linked to debilitating inflammatory joint and bone conditions such as arthritis and osteoporosis."

"With over 70 per cent of the immune system situated and functioning in the gastrointestinal tract³ and influenced by the microbial balance there, any inflammatory condition could arise if gut health is not maintained. There are over 70 classified diagnosable auto-immune conditions, with over 200 now suspected. Auto-immunity is where the body's immune system mistakenly attacks and destroys the body's own healthy cells and tissues. Many experts now believe that the development of auto-immune disorders begins in the gut. An imbalance in gut microbes and intestinal inflammation is increasingly linked to debilitating inflammatory joint and bone

conditions such as arthritis⁴ and osteoporosis⁵. An imbalance of gut flora, and subsequent inflammation, has by some researchers been associated with the initial development of cancer, namely bowel cancer."^{6,7}

And Morris continued: "There are many health conditions that can be related to certain digestive signs and symptoms, including IBD, autoimmunity, and cancer, so it is essential that any individual experiencing 'red flag' digestive symptoms, such as blood and mucus in stools or a recent change in bowel habits, should visit their GP for further investigation."

THE BALANCE OF BACTERIA

The category of probiotics is worthy of a whole other feature, given the integral link they have with digestive health.

"Many people suffering from digestive health complaints also benefit from supplementing with broad-spectrum microbiotics containing strains of *Lactobacillus* and *Bifidobacteria*, as well as a digestive enzyme supplement to help further support the breakdown of foods," Sulic commented. "Strains of *Lactobacillus* are found from the mouth to small intestine while *Bifidobacterium* strains are predominantly found in the large intestine/colon, so by taking a multi-strain microbiotic you are restoring good bacteria within your whole digestive tract.

"When choosing a digestive enzyme, you want one that contains a range of enzymes that work synergistically to break down fats, proteins, carbohydrates, lactose and vegetable fibre. A formula that contains alpha-galactosidase is beneficial as it's an enzyme that helps to digest fermentable carbohydrates/oligosaccharides such as legumes, beans, pulses and certain vegetables."

Lamb added: "The gastrointestinal tract is home to

trillions of microbes that line the gut wall and play an essential role in supporting strong immune and digestive systems. Each of us will have a completely different mix of these microbes – like our gut fingerprint. Research is indicating that it is the wide diversity of these strains that is appearing to be more beneficial than the presence of individual strains. It is this lack of bacterial diversity that is now commonly being seen in many gut related conditions.²

"Probiotics have been shown to help restore a healthy gut flora and lining, support digestive function, regular healthy bowel movements and immunity. Probiotics regularly show benefit in gut conditions, such as bloating, constipation, loose stools, IBS, diverticular disease and pouchitis. The mechanisms of actions are thought to be the reduction of luminal pH, competition with pathogens for adhesion sites and nutritional sources, secretion of antimicrobial substances, toxin inactivation, and immune stimulation.⁸

"A recent study showed multi-strain probiotic Bio-Kult to significantly improve overall symptom severity in IBS patients and was well tolerated. Abdominal pain and frequency reduced by over 70 per cent, quality of life improved significantly, with 34 per cent completely symptom free at the end of the four-month trial."

IN CLINIC APPROACH

Morris offered some important advice in terms of how to best support clients with gut related issues.

She explained: "First of all, establishing the foundations of digestive health is essential. Key initial recommendations include keeping to a mealtime routine, chewing food properly without distractions (mindful eating), enjoying a wholefood diet, reducing sugar and alcohol, supporting stress management,

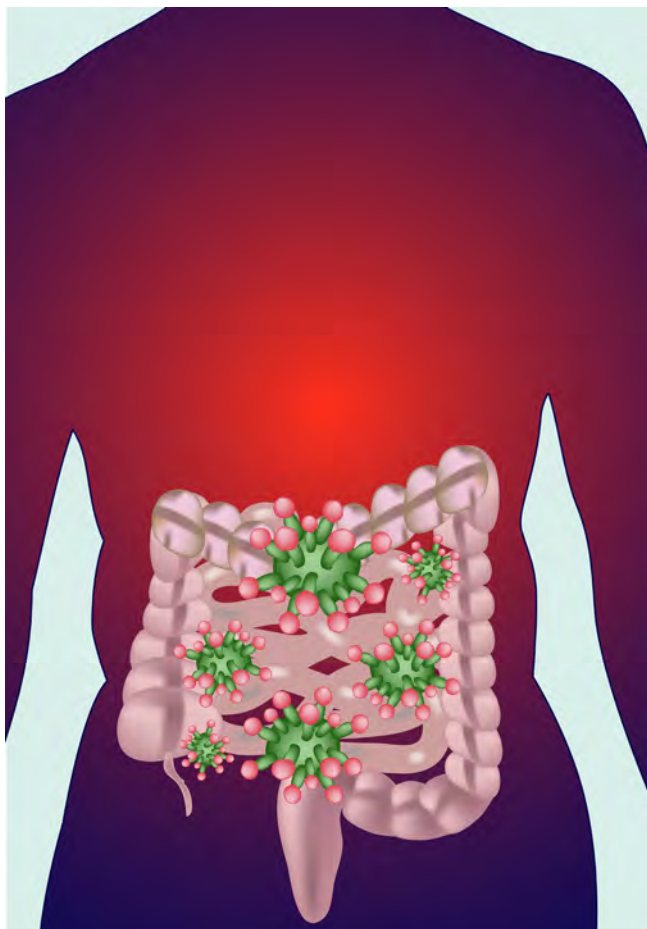
eating as early as possible in the evening, and keeping a food diary to monitor symptoms (for example, in relation to gluten and dairy intake).

"If a client presents with 'red flag' digestive symptoms, like blood and mucus in stools or a recent change in bowel habits, referral to the GP for further testing is essential. In these cases, we can request that they test for markers such as C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) in blood to assess non-specific inflammation, or calprotectin from a stool sample to assess localised inflammation in the bowel, for example.

"Equally, if a client has diagnosed IBS, IBD, any autoimmune condition, or a collection of digestive symptoms like bloating, constipation, and flatulence, a private comprehensive stool test obtained through a reputable laboratory can be essential. It can elucidate what is really going on in their bowel in terms of maldigestion and malabsorption, gut dysbiosis and inflammation, and poor gut integrity, and so on. For example, it can help to identify what IBS really means for a particular client (for example, is it caused by a parasite, or overgrowth of a specific yeast or bacteria?), or whether gut dysbiosis and increased intestinal permeability may be a driving force behind a client's autoimmunity. Thereby, it can enable a personalised and (hopefully) effective therapeutic protocol. Food intolerance testing can also be useful, for example, to ascertain whether dairy or gluten intolerance might be a contributory factor to a client's IBS.

"At the same time, it is important to consider the impact of wider system imbalances on digestive health to ensure that we are looking at how the body is functioning as a whole. For example, could high stress levels be the main driver of a client's IBS instead?

"So, the key takeaway points are: One, establish the



dietary and lifestyle foundations of gut health; two, refer to the doctor if a client presents with any red flag digestive symptoms, and; three, test for deeper underlying imbalances in the gut and related body systems, to allow implementation of a personalised dietary, lifestyle, and supplement protocol with the greatest chance of yielding significant clinical improvement."

Sulic too advised a multi-factorial approach to be taken.

"They may be presenting with various symptoms, but what is ultimately causing those symptoms? Is it diet, lifestyle and/or emotional i.e. stress? Functional testing may be the first step in their approach so they can get definitive answers to address nutritional balance and help support the body towards maintaining health," she explained.

Of course, there is no one size fits all approach, and it will depend on the individual and their symptoms.

"It is important to remember diet and lifestyle first. Focus on easily digestible foods such as soups, smoothies, juices, and mashed vegetables. You can then consider supplementation to help 'kick start' gut health," Morris advised.

"Then, in terms of supplementation, choose those supplements which deliver nutrients in bioavailable forms (for example, iron as iron citrate, vitamin C as magnesium ascorbate) and emulsified in the case of fat soluble nutrients (for example, vitamins A and D) to further support bioavailability, especially in those with very compromised digestion (for example, as in the case of those with coeliac disease). Also consider liquid or powder forms of nutrients. Liquid forms can be taken under the tongue (sub-lingual), as in the case of B vitamins, to bypass the digestive system and support absorption directly into the bloodstream instead.

"Starting with a probiotic and a broad spectrum digestive enzyme supplement can be a great, generalised starting point for clients with digestive issues to help improve management of their symptoms while further investigation is being undertaken. For instance, increasing evidence supports the benefits of probiotics" and synbiotics (probiotics and prebiotics

administered together)^{xi} for supporting management of IBS symptoms like abdominal pain and bloating.^{xii}

“Tailoring supplementation to meet a client’s specific needs is then essential. Key nutrients and botanicals to explore include betaine hydrochloride, pepsin, L-glutamine, zinc, vitamin A, N-acetyl glucosamine, ginger, curcumin/turmeric, oregano, clove, and cinnamon.”

PRODUCT ADVICE

Clients will look to you for advice when it comes to sourcing the right probiotic for their needs, and, with such a vast number of products now on the market, there are factors to consider.

For Lamb, quality and stability are important considerations.

“A good probiotic supplement should be stable and able to guarantee the bacterial count until the end of the product’s shelf life, not just at the time of manufacture. They should also be able to survive the harsh acidic environment of the stomach to reach the small intestine intact. There is still no consensus on the most effective dose of a probiotic. Benefits have been seen in ranges from 10m to 100bn CFU a day and that a dose that is found to be effective for one probiotic strain may not be effective for another,” she commented.

“Nowadays, there is an abundance of research on numerous different strains, so it is not surprising that confusion arises as to which strain is best to use for which condition. Each study uses varying dosages in varying time frames, population groups and conditions so it is hard to compare them all. Although good to keep track of these positive outcomes, it is important to be aware that other strains not yet tested could also be of similar benefit. Each human being hosts

NUCLEOTIDE FOCUS

Rachel Hoyle, founder of Nucleotide Nutrition and an expert in nucleotides, added that more may be needed when the gut needs repair.

“In terms of micronutrients, we’re all familiar with vitamins and minerals and more are becoming aware of the vital role played by plant compounds (phytonutrients) that act as anti-inflammatory agents, and antioxidants (free radical scavengers) i.e. encourage a health inflammatory response, protect cells from oxidative stress, and support the gut immune response. Ideally, these micro-nutrients should be supplied in forms recognised by the body,” she explained.

“But because the intestinal tract that has the highest rate of cellular turnover in the body, greatest during periods of infection or when the gut mucosa has been damaged and is in need of repair, the more the cells of the gut require their basic nutritional building blocks. Cellular regeneration in the gut has an insatiable requirement for nucleotides to build RNA and DNA within the nucleus of every new cell. Additionally, the 100 trillion or so microbes that make up the gut’s microbiome turnover even more rapidly, and have an insatiable requirement for nucleotides to build RNA and DNA within the nucleus of every new cell.

“So, the more we understand about the roles nucleotides play – particularly in areas of the body with rapid cellular turnover rates, most notably the gut mucosa and the gut microbiome – the more we realise that nucleotides may not just be ‘conditionally essential’, but essential for most of us, most of the time. Our high stress levels, including exercise-induced stress, along with our ever-decreasing nucleotide intake (particularly the pyrimidine type) from food sources in the Western diet, and even trauma and injury, will all contribute to dramatically increasing our dietary requirement for

these nutrients.

“Therefore, supplements recommended are:

- Supplements that supply a balanced blend of nucleotides (particularly the pyrimidine type) i.e. the IBS clinically tested supplement IntestAid IB (balance blend of nucleotides combined with selected vitamins and amino acids) and Nutri-tideNT (therapeutic levels of the balanced blend of nucleotides without vitamins and amino acids).
- Supplements that supply a broad range of body-ready vitamins, minerals, phytonutrients, antioxidants, probiotics, herbs, fruits, berries and veggies – ideally one which comprehensively supports all 12 body systems.
- A good, clean protein source for fuelling new cell growth.”

She added that modern eating habits mean we do not obtain nucleotides the way we used to.

“Historically, humans have eaten cuts of meat that have high levels of nucleotides and other essential nutrients in the tissues, such as the liver and brain, in other words, the offal. It has now become common practice to discard the offal and eat the less nutritious meat,” she explained.

“The evolution of human eating habits, especially over the last century and in western countries, indicated by DEFRA’s study, has had the potential to affect the quantities in the nucleotide pool. Under ideal conditions, the *de novo* and salvaging pathways are considered to meet the demands for nucleotides sufficiently (Carver & Walker). When the body is undergoing high levels of rapid growth or requires an increase in DNA and RNA synthesis, for example, the endogenous supplies of nucleotides could be depleted. Under these circumstances, nucleotides could be referred to as conditionally essential, opposed to non-essential (Van Buren & Rudolph).”

hundreds of different bacterial strains in their gut. Each strain has unique properties and health benefits, a multi-strain probiotic should, therefore, exert more positive benefits on a wider range of gastrointestinal complaints. A review by Chapman et al in 2011 concluded that 'multi-strain probiotics appear to show greater efficacy than single strains, including strains that are components of the mixtures themselves'.⁹ Multi-strains are how probiotics are delivered in nature too."

RESEARCH INVESTMENT

There is without doubt huge interest in digestive health when it comes to research, and more and more studies are emerging. But what is the current data telling us?

"The latest research is exponentially expanding our understanding of the degree to which our gut impacts our overall health and the complex interactions between our genes, body systems, and environment which underlie the many pathways identified to date," Morris commented. "The gut is now widely recognised as a common underlying factor behind conditions affecting every body system, including autoimmunity, cardiovascular disease, and PMS. Hence, addressing and optimising gut health is a worthy therapeutic goal for most, if not all, clients."

Lamb added: "There are some interesting studies emerging that are analysing the faecal microbiota of those consuming different diets. In 2012, Kabeerdoss et al,¹² compared the faecal microbiota of young lacto-vegetarian or omnivorous women in rural Indian. Both groups were consuming traditional foods consisting of a wide variety of local fibrous vegetables, which is not always the case for those in the West. These prebiotic vegetables are an essential food source for beneficial

bacteria already living in the gut and necessary for the production of short chain fatty acids (SCFAs), such as butyrate and propionate.¹³

"The latest research is exponentially expanding our understanding of the degree to which our gut impacts our overall health and the complex interactions between our genes, body systems, and environment which underlie the many pathways identified to date."

"Kabeerdoss found increases in Clostridium cluster XIVa bacteria, noted for their ability to ferment carbohydrate to SCFA, in the omnivore group compared with the vegetarian group. This was accompanied by an increase in the genes coding for a key enzyme involved in butyrate production, a SCFA important for the health of the gut lining. An older study found the count of *Bacteroides*, *Bifidobacterium*, *Peptococcus*, and anaerobic *Lactobacillus* were significantly higher in meat eaters."¹⁴

Lamb also turned her attention to research into bone broth.

"Although rooted in family tradition and folklore, the trusty bone broth is still being shown in modern research to have gut healing properties. In one study, chicken soup was shown to support the immune system and reduce symptoms of respiratory tract infections, including the common cold, by having a mild anti-inflammatory effect.¹⁰ Homemade bone broth is reported to be high in glutamine, an amino acid ideal to feed the cells lining the gut, where 70 per cent of our immune system resides. A strong gut flora has also

been shown to bind to and remove any heavy metals that could potentially be present in poorer quality non-organic bone broth," she reported.¹¹

Added to that, fermented foods are also shown to be beneficial in research.

Lamb advised: "The recent trend in fermented foods has come from the greater understanding that the consumption of traditional fermented foods helped to keep our gut flora balanced to allow us to function at our best. Studies continue to isolate beneficial strains from fermented foods such as Yu et al, isolating *Lactobacillus plantarum*, *Lactobacillus rhamnosus* and *Lactobacillus paracasei* from Chinese sauerkraut in 2013.¹⁵

"I tend to find that research consistently points me back in the direction of the JERF 'Just Eating Real Food' theory. If in doubt, I would recommend a wide variety of organic, seasonal wholefoods, including small amounts of grass fed meats, offal and fats, and free range eggs." ●



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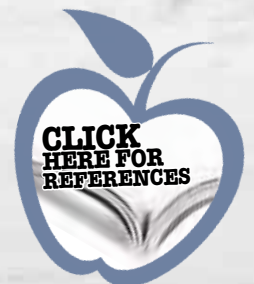
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BUILDING BETTER BONES

Our bone takes quite some pressure in our modern lives. But what nutritional approaches can help keep them in good health? Our panel of experts discuss.



Bone related issues – alongside problems with our joint function – can be among the most limiting health complaints for millions of people in the UK, causing countless lost days at work, having a number of knock-on effects to other areas of health. In short, the general population as a whole is in need of greater education in terms of the preventative factors that keeps the musculoskeletal system in good health, and also the nutritional interventions that can help ease the pain and movement issues associated with bones and the joints.

Egzona Makolli, Commercial and Technical Nutritionist at Kinetic, which distributes brands including Garden of Life and Nature's Answer, explained that we have a big issue with our bone – and our joint – health in the UK.

"Currently, osteoarthritis (most common joint disorder) affects around 10m individuals in the UK and is on the rise at the moment. The reasons are not fully understood but as age is a strong factor associated with joint and bone conditions, it is assumed as individuals are living longer than before that this may be a possible reason," she explained.

"Similarly, obesity has significantly increased alongside rates of arthritis and it is known that the more overweight you are, the more likely you are to develop inflammation on your knees as more wear and tear occurs on the joints and their cartilages. It is estimated that individuals who are obese are twice as likely to develop arthritis of the knee compared to normal weight individuals.

"Studies also suggest that a lack of vitamin D not only puts individuals at risk for weakened bones but also for inflammatory joint disorders. Similarly, the most common bone disorder, osteoporosis, affects over three million people in the UK, with more than

500,000 individuals being hospitalised to receive treatment for fragility fractures every year as a result of osteoporosis."

Dr Elisabeth Philipps PhD, Nutritional Therapist at Nutrigold, added: "Millions of people are currently affected by musculoskeletal conditions in the UK; over 8.75m people aged over 45 and over suffer from osteoarthritis, around 10m people live with chronic back pain and three million people are diagnosed with osteoporosis. This all adds up to over 30m working days lost each year due to musculoskeletal conditions, so I would say the state of many people's joints and bones are not in good shape!"

"Obesity has significantly increased alongside rates of arthritis and it is known that the more overweight you are, the more likely you are to develop inflammation on your knees as more wear and tear occurs on the joints and their cartilages."

She added: "Back pain and osteoarthritis are prevalent throughout the population and can severely affect quality of life. This can then contribute to other health issues, such as inability to exercise and maintain a healthy weight, depression² and are even linked with other co-morbidities, such as heart disease.^{3,4} These types of joint conditions are often only managed by conventional medicine with painkillers, which for many cause unwanted side effects, including constipation when using opiate-based painkillers as gastric ulcers associated with non-steroidal anti-inflammatory drugs (NSAID) usage.⁵ Many people do not want to be on

medication for the long-term so are now seeking out nutritional therapy as a way to reduce inflammation and naturally support short and long-term health of their joints and bones."

Nutrition expert, and author of *Say No to Arthritis*, Patrick Holford, agreed that the state of the nation's bones and joints are in decline.

"According to International Osteoporosis Foundation, by 2050, the worldwide incidence of hip fracture in men is projected to increase by 310 per cent and 240 per cent in women, compared to rates in 1990. Symptoms of arthritis, usually associated with the aged, is now affecting today's younger generation who live in times where obesity and lack of physical exercise are the norm.

By the age of 60, nine in every 10 people will have arthritis. Osteoporosis is a global health problem that will take on increasing significance as people live longer and the world's population continues to increase in number."

Andrew Thomas, founder and Managing Director at BetterYou, which specialises in magnesium, and vitamin D and K supplements, said the trend towards poor bone and joint health doesn't seem to be slowing.

"There are more and more cases of bone and joint related cases being reported and treated than ever before and this trend appears to be growing, according to Department of Health figures. One primary reason is that we are simply getting older. As we age, not only do our bodies begin to wear (oxidation damage, for example) but our ability to produce the elements of basic construction and repair diminish also," he commented.

"We are simply not designed to function forever. Our production of hydrochloric acid reduces as we age and this in turn reduces our ability to break

down and absorb the nutrients from our food. It is these nutrients, which we use to help the repair and production process. The mass adoption of PPIs has brought this problem to middle age and a nutrient-poor diet has simply added to the problem.”

CONTRIBUTORY FACTORS

There are many reasons why someone suffers with bone related issues, and so it can take some investigation to ascertain the correct protocol.

Michela Vagnini, Nutritional Therapist and Reflexologist, who works for supplement brand, Nature's Plus, suggested that the way we eat these days has had a big impact.

“We can now grow food in abundance but intensive farming and the use of chemical fertilisers and pesticides means that each successive generation of a crop is less nutritious than the one before and, as a result, much of the food we eat contains fewer nutrients than it did 70 years ago,” she pointed out.

“A report comparing the nutritional content of food in 1940 and 2002 shows that the mineral content of vegetables, fruits, meat and milk has fallen significantly over the past 60 years, in some cases by as much as 70 per cent. And the loss of essential minerals – such as calcium, magnesium and iron – from food can have serious implications on our health.⁽²⁾”

She continued: “Most people reach their peak bone mass in their mid 30s, after that you begin to lose about one per cent of your bone density every year! This can be from a variety of factors and causes, but here you have some of the most common causes:

- **Lack of exercise**, especially weight-bearing exercise. *The Journal of the American Medical Association* revealed that a 1994 study of women as old as 70 avoided the expected loss of bone, and even increased

their bone density slightly, by lifting weights twice a week for a year.

- **Low oestrogen levels:** Women around age 45 experience a fast decline in bone density around and after menopause (as much as a five to 10 per cent bone density loss each year), partly because ovaries stop producing oestrogen. Oestrogen plays an important role in the growth and maturation of bone, as well as in the regulation of bone turnover in adult bone.⁽³⁾

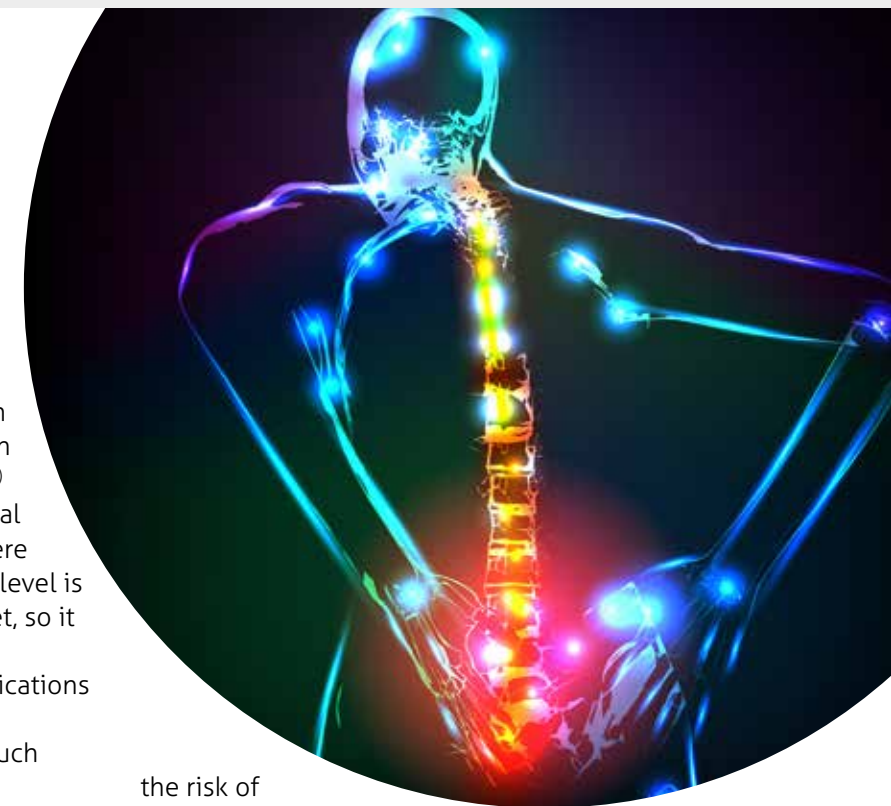
- **Low vitamin D3:** Adequate vitamin D is crucial for calcium to be absorbed and directed to where it's most needed – the bones. If your vitamin D level is low, the body can't absorb calcium from the diet, so it pulls calcium from your bones instead.

- **Medication:** Some of the most common medications contribute to bone loss or osteoporosis. These include but are not limited to contraceptives (such as the contraceptive pill), aromatase inhibitors, anticonvulsants, antidepressants, thyroid medications and blood coagulants.

- **Coeliac disease:** When the lining is damaged, bones (and all parts of the body) are deprived of nourishment (calcium, magnesium and more), as the small intestine is responsible for absorbing these nutrients from food into the bloodstream for the body to use.

- **Cigarette smoking** increases the risk of bone fractures by 15 per cent through indirect mechanisms, as favouring early menopause and reducing the bone tropism for reduced mitochondrial oxygenation.

- **Coffee, alcohol and salt:** The Framingham study showed that women who drink more than two cups of coffee a day have a higher risk of fractures of the femoral neck. The habit of drinking more than two glasses of alcohol per day or drinks rich in phosphoric acid (such as some carbonated soft drinks), increases



the risk of fractures from 20 to 70 per cent, depending upon the location of the fracture.”

Dr Phillips continued: “The human musculoskeletal system is designed to move; instead, we now live very sedentary lives revolving around office-based jobs and lack of movement and exercise in our everyday lives. Where we once used to be on the move for a lot of the day, we now rely much more heavily on cars and technology to do the jobs we used to have to do physically and manually. However, it's not just sedentary jobs that involve a lot of sitting at desks or standing that cause joint problems; jobs within certain industry sectors, such as the construction and agriculture industries, also contribute to musculoskeletal conditions.⁶

“There are also negative dietary and lifestyle factors,

such as obesity and smoking, that contribute to joint and musculoskeletal conditions like gout, ankylosing spondylitis, rheumatoid arthritis, back pain and osteoarthritis.^{7,8,9,10,11,12} Diet is particularly important as healthy joints and bones require many different micronutrients and fluid to support function; today's highly processed diets and lack of hydrating fluids often contributes to micronutrient deficiencies, such as zinc, magnesium, as well as dehydration, which affects long-term health and function of the musculoskeletal system, not to mention other areas of the body.

"There is increasing evidence that inflammatory and autoimmune conditions, such as rheumatoid arthritis, are related to levels of certain gut bacteria, demonstrating the importance of addressing diet and lifestyle to positively impact the health of our immune and musculoskeletal system."

"It's also interesting to note the link between gut microbiota and health of the immune system – there is increasing evidence that inflammatory and autoimmune conditions, such as rheumatoid arthritis, are related to levels of certain gut bacteria, demonstrating the importance of addressing diet and lifestyle to positively impact the health of our immune and musculoskeletal system.¹³ Of course, there are genetic components to some musculoskeletal conditions¹⁴ but we have control over many factors that will support both the short and long-term health of our joints and bones."

And Holford added another aspect in relation to

bone health.

"Hormones play a huge part in bone health and things like premature menopause and irregular periods can create progesterone deficiency, which is needed to help to preserve bone strength and prevent bone loss," he explained.

"Too much oestrogen relative to progesterone can make arthritis worse. Chronic stress can affect our bones and joints due to high levels of cortisol, which has shown to increase bone mineral density loss and increase levels of inflammation, which can affect our joints. Long-term alcohol consumption can interfere with bone growth and replacement of bone tissue, resulting in decreased bone density and increased risk of fracture.

"Finally, a sedentary lifestyle has increased and simple everyday exercises like walking to work or school have decreased as people use their cars more and more. Unfortunately, these exercises have not been replaced by an adequate consciousness about the need for regular exercise. This results in weak muscles and bones, leading to joint and bone ailments."

NUTRITIONAL PROTOCOL

There is not a one size fits all approach for caring for bones – which is much the case for all others areas of health – and as Nutritional Therapists, your role is to ensure all factors have been considered, and any testing carried out.

Vagnini advised: "Often, we see people coming to a Nutritional Therapist after being many times to GPs and physiotherapist but not getting any long lasting results or getting complication from medications prescribed. We often collaborate with a physiotherapist and osteopath as a good nutritional

therapy plan can go well alongside professional bodywork."

When it comes to factors that will be kept in mind in terms of common protocols, Makolli commented: "As a Nutritionist, I would always advise to try consuming a nutrient-rich diet before using any supplementation and always go for evidence-based supplements. Omega 3 fatty acid supplements can be used, especially for individuals who do not consume fish at least twice a week as omega 3 fatty acids have been shown to help inflammatory disorders, such as arthritis and are essential in joint and bone health. The body uses omega 3 fatty acids to make chemicals called prostaglandins and leukotrienes and helps support the right balance of these two chemicals, which help control inflammation.

"Calcium and magnesium are necessary for maintaining strong bones and should be consumed by individuals who do not get enough through a healthy diet. Calcium and magnesium are two of the most important minerals required by the body and calcium is an essential mineral needed for bones to form and magnesium is an important mineral in the bone matrix so this combination should be taken by individuals who have a bone disorder."

Thomas added: "Therapists can help their customers by educating them around which nutrients are best for their requirements (vitamin D and magnesium) and suggesting products which use the most natural, bioavailable and soluble sources of vitamins. The health market has always relied upon traditional methods of supplementation, however, digestive absorption varies dramatically from individual to individual, making dosage levels impossible to guarantee. The fact is that some nutrients are better supplemented via methods alternative to

traditional oral means. The key is to find the route into the bloodstream as quickly as possible. BetterYou pioneered two different methods of nutritional delivery, transdermal (absorption through the skin) and intra-oral (where absorption benefits from the high permeability and rich vascular proximity of the tissue in the mouth)."

Let's look further into the need to educate about calcium.

"At all stages of life, high impact and resistance exercise in conjunction with adequate intake of nutrients involved in bone health are critical factors in maintaining a healthy skeleton and minimising bone loss. The most common nutrient, and also supplement, that springs to mind when discussing bone health is calcium," Dr Phillips explained.

"Inadequate calcium intake is likely to be harmful to bone, as this mineral is required for bone structure and density. Calcium deficiency may arise from the diet (though this is unlikely) or inadequate gastrointestinal absorption. Calcium deficiency in the elderly is associated with low gastric acid secretion and bone loss with studies linking defects in gastric acid secretion with bone destruction and impaired mineralisation.¹⁵

"However, the recommendation for consumption of calcium over the typically recognised minimum official recommendations in the UK of 700-800mg per day of dietary calcium for adults appears to have no substantive benefit on fracture prevention. There is currently little, if any, firm evidence that higher intakes prevent bone loss, falls, or fractures in middle aged and older women and men living in the community.^{16,17} Therefore, simply consuming more calcium (no surprise here for Nutritional Medicine Practitioners) has little or no relevant effect on the prevention of fracture

development. In fact, some studies suggest that calcium intake significantly above the recommended level is not only unlikely to achieve substantive additional benefit for bone health, but may also increase the risk of cardiovascular disease.¹⁸

"This suggests exploration of other nutrient co-factors necessary for bone resorption, as well as lifestyle and behaviours that also have a direct impact on bone remineralisation. Multiple studies indicate that certain nutrients are consistent with healthy ageing, including combinations of calcium, vitamins D and K, copper, zinc, selenium, magnesium, and other vitamins and minerals are linked with better bone health. In other words, bones and their durability rely on more than the presence of two nutrients, they need a range of bioavailable nutrients from differing foods, and if required from well-manufactured food supplements that use bioavailable forms. To realise lasting effects on bone, the intervention must persist throughout a lifetime."

Dr Phillips continued: "Tocotrienols (subtypes of vitamin E) have also been demonstrated to preserve bone health, especially during menopause. They do this in several ways; quench free radicals and oxidative stress, reduce inflammation, inhibit osteoclast activity (bone cells that break down bone). They also enhance the structure and strength of normal, non-osteoporotic bone, increasing bone mass so that there is less risk of osteoporosis later in life.^{19,20}"

When you do advise on the correct diet, there are many vitamins and minerals to keep in mind that are supportive of healthy joints.

Makolli commented: "I would advise firstly to eat more sulphur containing food, such as asparagus, eggs, garlic and onions as sulphur is required for the repair and rebuilding of bone, cartilage and connective

tissue, and can aid in the absorption of calcium. Also aim to include fresh vegetables, especially leafy greens, which supply vitamin K as this is essential in joint and bone health. And finally avoid phosphate containing drinks and foods such as soft drinks and alcohol."

And Vagnini continued: "Providing your bones with the vitamins and minerals needed to maintain normal bone health and bone strength is crucial to combating low bone mineral density. Nutrient dense foods like seaweeds, kefir, nuts and seeds, kale and pulses are great for bone health."

THE NEED FOR D

An advisory feature on bone health would not be complete without focus being placed on the importance of vitamin D.

"Your body needs vitamin D to absorb calcium. Good sources of vitamin D include oily fish, such as tuna and sardines, egg yolks, and fortified milk. Sunlight also contributes to the body's production of vitamin D," Holford explained. "Low levels of vitamin D, coupled with lack of weight-bearing exercise, plays a big part. Methylation, dependent on B12, is essential for bone building. Yet, many of today's common prescription drugs – PPI antacids, metformin for diabetes, and diuretics for high blood pressure – promote B12 loss. Without good levels of vitamin D, you cannot absorb calcium from your food or your supplements. No one gets enough without supplementation – ideally 25mcg in the winter and 15mcg (600iu) all year round."

Makolli added: "Lack of vitamin D plays a crucial role in allowing the body to absorb calcium as vitamin D is synthesised naturally in the skin when exposed to sunlight. Within the UK, many people do not get the required daily intake of vitamin D, which can be linked

with joint and bone conditions. Bone disorders usually cause weakened bones, which make them more fragile and more likely to break; this usually develops over several years and is often diagnosed when an individual fall or sudden impact causes a bone fracture.

"Spend time outdoors during the summer months; exposure to the sun prompts the synthesis of vitamin D, which is needed for proper bone formation. Vitamin D is also essential as SACN recommends a supplementation of vitamin D daily by individuals in the UK as we do not currently intake enough daily. Vitamin D helps the body absorb calcium and is essential for building and maintaining strong bones."

And of course, vitamin K2 is critical.

"In recent studies, vitamin K2 was found to attenuate the increase in bone reabsorption and/or maintain bone formation, reduce bone loss, protect against the loss of trabecular bone mass and its connectivity, and prevent the decrease in strength of the long bone," Vagnini explained.⁽¹²⁾ Menaquinone-7 (MK-7) is a form of vitamin K2 that has greater bioavailability than other forms of vitamin K. In a recent study, the group treated with MK-7 showed a marked decrease in rheumatoid arthritis (RA) biochemical markers compared to controls, including significantly lower CRP, ESR, and DAS28-ESR. This suggests that MK-7 could be a promising new agent for RA and other joint and bone issues."⁽¹³⁾

JOINT THINKING

Another important aspect of our musculoskeletal health is the health of our joints, and we have already highlighted the data in terms of the state of our joint health.

As with the bones, there are a number of factors that can contribute to an increased risk of joint issues.

"A joint is the point where two or more bones connect, which allows movement between the bones and to absorb shock from movements like walking or repetitive motions. Joint disorders are usually caused by inflammation, which can occur in one of more joints and cause a diminished range of motion affecting mobility, which is defined medically as arthritis, which means joint inflammation," Makolli explained.

Holford added: "Most people think arthritis is simply 'wear and tear' but it has become clear that joint degeneration is part of 'metabolic syndrome' – the systemic, inflammatory breakdown that lies behind diabetes, heart disease and Alzheimer's. The causes include sub-optimum nutrition, high stress and lack of exercise. Like Alzheimer's, it takes decades to develop osteoarthritis, but many people in their 40s are already experiencing aching joints.

"Rheumatoid arthritis, like other auto-immune diseases, is also on the increase and can be thought of also as an extension of 'metabolic syndrome'. Unlike Alzheimer's, these conditions can be reversed because bone rebuild quite rapidly, but it's harder to rebuild cartilage that's worn out.

"Busy lifestyles contribute to poor eating habits and higher levels of processed foods that generally contain lower levels of key nutrients and higher levels of food that is harmful to bones and joints, such as sugar. Also, with a lack of exercise, we just don't eat enough wholefoods to get

enough nutrients."

And Holford also highlighted food issues, commenting: "Almost everyone who suffers from rheumatoid arthritis and many people who have osteoarthritis have food allergies or sensitivities that make symptoms flare up. I often run a Yorktest FoodScan to eliminate people's inflammatory foods. Dairy and wheat are the most common."

Symptom wise, joint issues can be mixed, the most obvious being pain and stiffness.

Makolli added: "Arthritis currently refers to more than 100 diseases and conditions affecting the joints, with the most common being osteoarthritis. Currently, individuals with any joint or bone disorder suffer from pain, aching, stiffness and swelling. Many individuals, particularly the elderly, tend to be restricted in what they can do in terms of daily lives, such as how far they can walk, how to manage the pain associated with the disorder and carrying out day-to-day tasks."

CUT INFLAMMATION

There are many steps to take to reduce inflammation, which is the biggest issue when it comes to joint problems.

"Include fresh pineapple in the diet as pineapple contains bromelain, which is an enzyme that is excellent for reducing inflammation, which occurs in joint disorders. There's some literature to suggest avoiding nightshade vegetables (eggplant, tomatoes, and white potatoes), which



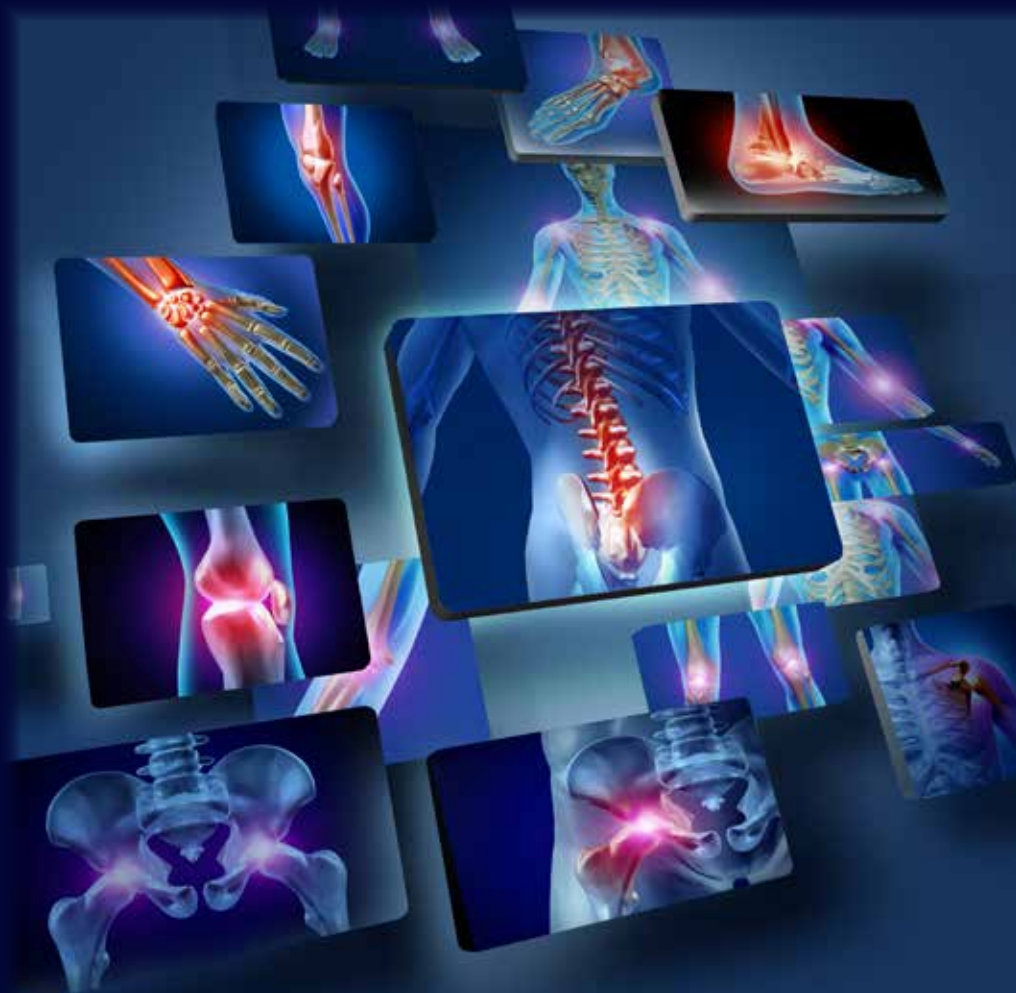
contain a substance called solanine, which some individuals who suffer from joint disorders are highly sensitive to. Solanine can interfere with enzymes in the muscle and may cause pain and discomfort symptoms," Makolli explained.

Penny Shaw, a Student Nutritional Therapist, who works for G&G Vitamins, added that an anti-inflammatory diet is crucial.

"Individuals with issues related to bones and joints should be following an anti-inflammatory diet rich in essential minerals that are needed to support healthy bones."

And Vagnini continued: "Osteoarthritis and other joint diseases have long been viewed as a degenerative disease of cartilage, but accumulating evidence indicates that inflammation has a critical role in its pathogenesis.⁽⁷⁾ That is why in clinic we focus on therapies and nutritional plans that target inflammation to prevent or slow the development and progression of joint disease. An anti-inflammatory diet plan would look into a pure, clean, organic diet, mainly based on fresh seasonal vegetables, mainly brassicas (broccoli, cauliflower, cabbages, kale, etc.) and always choose a variety of colours to get lots of different anti-inflammatory phytonutrients from each colour (that is why we say eat your rainbow!).

"Wild catch oily fish and fish oil supplements are also great source of omega 3, which possess the



most potent immuno-modulatory activities. Among the different omega 3 sources, those from fish oil-eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), are more biologically potent than alpha-linolenic acid (ALA) coming from plant sources⁽⁸⁾.

Herbs and spices like oregano, rosemary, turmeric, ginger and more, have strong anti-inflammatory actions and we advise to use them in cooking for their flavour but also for their therapeutic actions."

From a supplement perspective, there is a wide toolkit to remember.

"Glucosamine is one of the best-known supplements to support joint structure and integrity through production of cartilage.²¹ Silica (often supplement in horsetail extract), vitamin B3, boron, sulphur and omega 3 essential fatty acids also support joint health," Dr Phillips advised.

"Of particular current interest is curcumin in managing musculoskeletal conditions – in fact, it's sometimes described as a golden remedy for joint health! Curcumin is the collective term for three bright golden-colored, lipophilic polyphenols (curcumin, demethoxycurcumin and bisdemethoxycurcumin). These curcuminoids have antioxidant and anti-inflammatory properties that may be useful in lessening the pain and inflammation of arthritis.²² Several studies have been conducted which have confirmed the anti-arthritic effects of curcumin in humans with both

osteoarthritis and rheumatoid arthritis.^{23,24}"

Makolli added: "Vitamin E is a powerful antioxidant, which can protect the joints from damages caused by free radicals; it has also been shown that low levels of vitamin E have been found in people with joint related

disorders.”

And Holford recommended: “Cartilage is built out of sulphur and proteoglycans. Glucosamine turns into proteoglycans and MSM is the most usable for of sulphur. The best anti-inflammatories, to calm down aching joints, are quercetin (rich in red onions), an extract from hops and also curcumin. Hops help reduce the over-production of leukotrienes that cause pain and inflammation. Theracurmin, a particularly bioavailable form of curcumin, has been shown to reduce knee painⁱ in those with arthritis, and also to aid muscle recovery in strenuous sportsⁱⁱ.

“Curcumin, in particular, is a very important ingredient in reducing inflammation and has a track record with growing credibility. It has anti-inflammatory activity, possible by inhibiting cyclooxygenase-2 (COX-2), prostaglandins (PGE2), and leukotrienes, immune system cells that promote inflammation, but in chronic disease are perhaps not very readily switched off, resulting in ongoing pain and swelling. A recent study showed that curcumin inhibits PGE⁽²⁾ production, which promotes pain and inflammation, in patients with rheumatoid arthritisⁱⁱⁱ.”

Vagnini also highlighted high oxidative stress and low vitamin C levels.

“The reactive oxygen species (ROS), which are mostly produced by

chondrocytes, may damage cartilage collagen and synovial fluid, by reducing its viscosity. It seems relevant that the intake of some vitamins, which have antioxidant properties, can reduce the level of ROS and, at the same time, the outcome and the development of the disease,” she said.⁽⁶⁾

ACTIVE INSTINCT

Whether it is related to joint or bone health, physical activity is hugely important, and it is crucial they are given the right advice to gain the most benefit.

Shaw recommended: “Weight bearing exercise is useful to lay down bone tissue and increase bone density, especially before the age of 30. Exercise should be tailored for the individual, but keeping active is import to maintain healthy bones and joints. Regular visits to a chiropractor or osteopath is essential to make sure your bones and joints are aligned and functioning optimally.”

Holford added: “Weight-bearing exercises, such as walking, jogging, tennis and climbing stairs, can help you build strong bones and slow bone loss.”

And Thomas finished: “Exercise is important from a young age – use it or lose it is very apt here. The greater use of a joint will ease stiffness and helps to encourage maintenance. Non-use sends the wrong signals to the body and stems nutrient flow to that area.” ●



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HOW CAN THE ‘RELAXING MINERAL’ HELP YOU?

How magnesium supplements can support your clients' stressful lives.

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ANXIETY AND MENTAL HEALTH

Low magnesium levels alter the body's ability to cope with the physical effects of stress and anxiety. In fact, magnesium deficiency has been associated with depression, irritability and even confusion.

Magnesium is thought to support healthy brain function thanks to its ability to both bind to and stimulate receptors of the anti-anxiety neurotransmitter, gamma-aminobutyric acid (GABA). GABA is able to reduce excessive neuronal activity in the brain – without it, we would never be able to relax. By stimulating GABA, magnesium can effectively put the brakes on excessive activity in the brain linked to anxiety, insomnia and even migraines.

CHRONIC STRESS

The human body is designed to deal with acute stress that goes as quickly as it comes. When the body comes under stress, the hormone, cortisol (in combination with adrenaline), is released to give us a boost to mental alertness so we can deal with whatever is causing the stress. This is often called the 'fight or flight response'. When the source of stress goes away, our cortisol levels drop again. So, what happens if our sources of stress never go away?

In modern times, we're more likely to encounter smaller, persistent sources of stress – money, relationships, work-life demands, etc. This stress constantly activates a series of glands (known collectively as the HPA axis), potentially exhausting them and causing cortisol levels to rise and remain high. High levels of the stress hormone over a period of time can lead to a range of health issues, including reduced immunity, cardiovascular issues, digestive issues and more.

Magnesium may be beneficial for those who experience chronic stress in various ways. Firstly, magnesium has been shown to reduce over-activity of the HPA axis, which would contribute to high cortisol levels. Furthermore, magnesium has been shown in various trials to reduce the overall levels of cortisol – the main stress hormone – thus helping to protect the body from the negative effects of stress.

IMPROVED SLEEP

Over a quarter of people in the UK get poor quality sleep on a regular basis, according to the British Sleep Council.

While we may write it off as a bad night's sleep, persistent sleeping problems can result in more than just irritability the next day. In research, poor sleep has been associated with mood disturbance, poor

Life is full of ups and downs, although sometimes the 'downs' can be harder to bounce back from than we'd like them to be. Daily stress and anxiety rise as our lives get more and more hectic and demanding and, for many, a stressful life is the norm.

Luckily, there's a way to tackle the physical effects of stress and anxiety. According to a growing body of research, tackling many of the stresses of modern life could be helped by something as simple as supplementing with magnesium, the 'relaxing mineral'.

BODY AND MIND

Needed in over 600 enzymes within the body, magnesium is truly the body's workhorse. A body that lacks magnesium may struggle to work, as muscle function, bones, teeth and energy production all depend on the mineral. Not only this, magnesium contributes to a healthy nervous system and psychological functions as well, hence its name as the



concentration, fatigue and even elevated risk of cardiovascular disease.

Various trials have shown that magnesium supplements may assist in achieving a restorative night's sleep. In one such trial, those who took magnesium supplements over a period of eight weeks had improved sleep quality versus those who took a placebo. Furthermore, those taking magnesium experienced better control of their cortisol levels.

Previous research has also linked low magnesium to so-called 'restless legs syndrome', with a 2004 study showing magnesium supplements help prevent insomnia caused by the condition.

MIGRAINES

Typically manifesting as a severe headache, migraines can also be associated with nausea, sensitivity to light/sound and even visual disturbance. Low magnesium levels have been associated with the condition, with supplementation shown to help alleviate symptoms. In various trials, magnesium is able to reduce migraine severity when compared to a placebo.

MAGNESIUM IS NECESSARY FOR VITAMIN D

If you're like many who take vitamin D supplements to support immunity, bones and mental health and general wellbeing, magnesium is an important addition.

Adequate magnesium is essential for the proper working of vitamin D3 in the body, including its conversion from calcidiol (the stored form) to calcitriol (the active form).

DO WE NEED MAGNESIUM SUPPLEMENTS?

According to the UK National Diet and Nutrition Survey, a substantial proportion of adults aged 19 years and over don't get enough magnesium in their diets.

It isn't easy getting enough magnesium from food as intakes have decreased in the past few decades due mainly to a change of dietary habits and agriculture. Processed foods are also typically low in magnesium.

WHAT SHOULD YOU LOOK FOR IN A SUPPLEMENT?

There are multiple forms of magnesium available on the market, with various levels of bioavailability and quality.

Magnesium supplements with multiple sources, for instance, can offer a balance of absorbable magnesium that is also gentle on the stomach. Quality assurance is also an important factor in supplement choice, with those produced under pharmaceutical control offering the best peace of mind in terms being true to the label claim and free of contaminants. ●

■ References available on request.

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- ✓ Contributes to a reduction of tiredness and fatigue
- ✓ Gentle and easy to absorb
- ✓ Contributes to the nervous system and muscle function
- ✓ Contributes to teeth, bone and protein synthesis
- ✓ Can help sufferers of restless leg syndrome, according to research

Magnesium controls more than 600 different enzyme processes in the body, many of which play a natural role in normal muscle function, nervous system function, and psychological functions. Magnesium is also important for the maintenance of normal bones and teeth.



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mushrooms in your practise. Mushrooms can be used to support various chronic and acute conditions
including neurodegenerative, autoimmune, cardiovascular, and oncology support.

A GUIDE TO MEDICINAL MUSHROOMS

All you need to know when recommending the use of medicinal mushrooms in clinic.

With the rise in clean eating has come greater awareness of the power of plant-based foods. One area of increasing popularity is medicinal mushrooms, both in terms of general awareness but also in product availability.

This product category offers a lot of potential to your clients, given that there is such a multitude of uses, ranging from immune support and digestive health to sports nutrition.

"2018 is the year of the mushroom; known as a superfood to the clean living Instagram generation, who regularly post about cordyceps smoothies and reishi coffee, the trend is about to turn mainstream," commented Victoria O'Neill, Nutritional Therapist, Clinical Psychoneuroimmunologist and Practitioner Account Manager with Hifas da Terra.

"Whilst these bloggers know that cordyceps powder will give you an energy boost and reishi will give you glowing skin, most people are unaware that 'medicinal' mushrooms are just that. In fact,



medicines such as statins and antibiotics, are based from mushroom compounds. Not many are aware of the potency of these superfoods. This is why at Hifas da Terra, special emphasis is put into education and awareness of the beneficial compounds contained in each of these unique mushrooms. We aim to empower health professionals in using the supplements, knowing no harm can be caused using these wholefoods.

"The mushroom kingdom was one of the first living beings on earth, they have been growing and evolving for 1.5bn years, surviving extremes of temperatures, radiation, mass extinctions; they have been attacked by bacterias, viruses, yeasts, pathogens, cancers, insects and animals and as a result have evolved a chemical cloak of protection. It is these compounds which benefit us and our immune systems so profoundly. It's been proven that we share similar DNA to mushrooms and, therefore, can absorb and profit from their beta glucans, glycoproteins, triterpenes, sterols, statins, indol compounds (such as l-tryptophan, 5-HTP and serotonin), chitin, lectins and enzymes."

Nutritional Therapist, Jenny Logan, Technical Training Manager for Natures Aid, added: "There has, with the interest in clean eating and the rise of food bloggers, obviously been a huge upsurge in interest in 'superfoods' generally, as well as an increased awareness of the power of food and diet changes. This is obviously one thing which has led to an increased interest in medicinal mushrooms. Additionally, the ability to cultivate specific mushroom species has improved vastly in recent years and, as a result, scientific studies have been carried out, which have confirmed many of the traditional uses for medicinal mushrooms.

"One of the most exciting areas of this research

has been into the role of different mushrooms as immunomodulators and their potential anti-tumour actions.⁽¹⁾ Cancer is one of the leading causes of death worldwide and as research into ways to improve treatment of this disease has progressed, some interest has centred on mushrooms leading to discoveries which include:

- Medicinal mushrooms compliment orthodox cancer treatments, and could reduce nausea, bone marrow suppression and reduced resistance to infection.⁽¹⁾
- Studies have indicated that patients taking mushrooms alongside orthodox treatment have increased survival rates.⁽²⁾
- Additional studies have indicated that medicinal mushrooms may increase the effectiveness of chemotherapy treatments.⁽²⁾

"As everyone knows someone who has been affected by cancer in some way, this sort of research will always lead to an increased interest in the substance being investigated."

HEALTH PROPERTIES

So, let's look in further detail at the role of medicinal mushrooms, and how they can support various aspects of health.

"Nutritional Therapists and all health professionals can use medicinal mushrooms therapeutically. The active compounds within them can be used in a dose dependant extract form to protect from cancers, bacterias, viruses and used as integrative supplements for conditions such as diabetes, cardiovascular disease, multiple sclerosis, Alzheimer's, Parkinson's, Hashimoto's, arthritis, polycystic ovaries, infertility, digestive conditions (IBS, IBD, Crohn's), internal inflammation, sleep disorders, mood, depression, cystitis, asthma, candidiasis, anemias, allergies – the

list is as long as human illnesses," O'Neill explained.

Logan continued: "Medicinal mushrooms have been investigated for so many different health properties, it is hard to narrow it down. However, for me, one of the most important benefits is the ability to support the immune system. Most medicinal mushrooms contain a substance called beta 1,3/1,6 glucan, a polysaccharide which has immune enhancing effects. Over 600 studies have been published investigating the immunomodulating effects of these beta glucans from fungi. It has been found that beta 1,3/1,6 glucans act on several immune receptors and can trigger the production of macrophages, neutrophils, monocytes, natural killer cells and dendritic cells. This means that beta glucans act on both the innate and adaptive immune response.⁽⁸⁾

"The ability to cultivate specific mushroom species has improved vastly in recent years and, as a result, scientific studies have been carried out, which have confirmed many of the traditional uses for medicinal mushrooms."

"The multiple actions of medicinal mushrooms on the immune system will also be one of the reasons why they are often hailed as a potential addition to cancer treatment. The other important benefit, especially in today's society, is the potential for these mushrooms to support those with metabolic syndrome, via numerous blood sugar and cholesterol lowering effects."

Let's also talk here about the quality to be expected if you are recommending clients take medicinal

mushrooms.

O'Neill pointed out: "It is important that mushrooms are grown in an organic environment as they take up compounds from the substrate that they are grown in, so would absorb toxins if they were present. In fact, mushrooms are used to clear environmentally toxic land, such is their ability to absorb. Mushroom extracts are made by using water and alcohol to extract the beta glucans and the triterpenes. The strength of the extract denotes the power of supplement.

"At Hifas da Terra, we have pharmaceutical grade laboratories with a GMP certification, which are capable of making a 15:1 reishi extract. This means that 15kg of dried reishi (fruiting body) powder give 1kg of extracted beta glucans, triterpenes, ganoderic

and lucidenic acids."

Logan agreed, adding: "Mushrooms are very porous and will, therefore, easily absorb pesticides. They can also absorb chemicals from the soil very readily. Therefore, realistically, an organic product is the only option to ensure that clients are not adding to the toxin load with a product which should be supporting their health. A complex providing a number of different mushrooms is also possibly the most beneficial approach, due to the fact that different mushrooms appear to have different benefits – a complex would provide the broadest benefits.

"The key mushrooms to look out for are those with the most consistent research, at the moment this would include maitake, shiitake, reishi, chaga and cordyceps."

UNDERSTANDING THE ROLE OF MUSHROOMS

While there is clearly greater publicity surrounding medicinal mushrooms, the general consensus among experts is there is conflicting information.

Logan commented: "Unfortunately, the reporting of many of the studies into medicinal mushrooms, and indeed other natural products, tends to be skewed and limited, so many people do not fully understand the role that medicinal mushrooms can play and indeed when and how to use them. Better education is always good, but with restrictions on what can be written in consumer information, it is difficult. This is why we believe in practitioner education, and in encouraging people to talk to those who do know how to utilise nutrition and understand the power of these mushrooms, before starting to use them."

And how best can they be used in practice? And when is it correct to do so?

"In my practice, I have used medicinal mushrooms as an adjunct to any treatment focusing on the immune system. This would include those with recurrent infections, people with ME, as well as older people and those with inflammatory conditions. The broad action of medicinal mushrooms within the immune system is in many ways preferable to herbs which simply work in or on one area. Medicinal mushrooms, or even a yeast sourced beta glucan extract, could very effectively be used alongside nutrients such as zinc, selenium with vitamins C and D to provide an all-round immune support regime," Logan explained.

"Research into the potential benefits of certain mushrooms, such as maitake, cordyceps and reishi, means that a mushroom complex would also support someone with insulin resistance or metabolic



syndrome, obviously alongside dietary changes and other support measures.”

“There are thousands of scientific studies regarding the therapeutic use of medicinal mushrooms. Asian countries have been documenting their therapeutic uses for over 2,000 years.”

CURRENT RESEARCH

There is an emerging body of research around medicinal mushrooms, with Logan pointing out: “One of the most studied areas is in immune health and as a potential anti-cancer agent. Certain mushrooms have been identified as particularly important for those looking to support cancer therapy:

- Mushroom metabolites are known to stimulate different cells of the immune system. The major immunopotential effects of these active substances include mitogenicity, stimulation of hematopoietic stem cells, activation of alternative complement pathway, and activation of immune cells, such as T cells, B cells, macrophages, DCs, and NK cells.⁽⁸⁾
- Maitake mushrooms have been shown appreciable alleviation of the side effects from chemotherapy, including loss of appetite, vomiting, nausea, hair loss and leukopenia.⁽³⁾
- Reishi mushrooms have been shown to have the ability to prevent the proliferation of cancer cells and have cytotoxic activity against cancer cells.⁽⁴⁾
- Shiitake mushrooms have also been shown to have anti-tumour effects.⁽²⁾
- Chaga has been widely investigated for its potential anti-inflammatory and immunomodulatory actions,



it has also been shown to have significant tumour suppressive effects, and is one of the rising stars of the mushroom world.^(7,8)

Additional research has been carried out into the potential of using mushrooms to support the cardiovascular system and regulate blood sugar levels. Some of the highlights include:

- Polysaccharides from the fruiting bodies of maitake help to activate insulin receptors⁽⁵⁾
- Studies have suggested that cordyceps could help to reduce blood glucose, as well as plasma triglycerides and cholesterol.⁽⁶⁾
- In vitro and rodent studies have indicated that reishi can improve blood glucose and insulin levels, whilst also protecting pancreatic islets from damage.
- It is thought that combining reishi with cordyceps

increases its activity, showing that the mushrooms can work synergistically, again supporting their use in complexes, rather than individually.”

And O'Neill continued: “There are thousands of scientific studies regarding the therapeutic use of medicinal mushrooms. Asian countries have been documenting their therapeutic uses for over 2,000 years. In Japan, a compound from shiitake mushroom (lentinan) is a licensed cancer drug, and PSK, from the turkey tail mushroom, is Japan's best-selling anti-cancer drug and is used in combination with surgery, chemotherapy and radiation therapy. Western scientists are catching up quickly researching mushroom compounds for many diseases and conditions, there are hundreds of recent scientific studies in all disciplines.” ●

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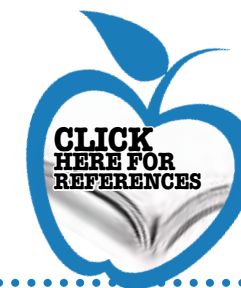
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EXPERT ADVICE

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



Q

What would you consider essential in terms of nutrition and supplement advice for women who are experiencing symptoms of the menopause?



MARIANNA SULIC SUGGESTED:

I would recommend increasing your intake of fresh, and preferably organic fruits and vegetables to avoid chemicals that mimic oestrogens (xenoestrogens) found in pesticides and herbicides.

Fermented soya-based foods, such as miso, soya sauce and tempeh, are rich in isoflavones (phytoestrogens), which have oestrogen-like effects on the body. Studies show that isoflavones particularly help to manage hot flushes associated with the menopause.⁽¹⁾ Isoflavones are also found in chickpeas, soya beans, lentils, alfalfa, fennel, kidney beans, and sunflower, pumpkin and sesame seeds, as well as Brazil nuts, walnuts and flaxseeds. All seeds and their unrefined oils are rich in essential fatty acids omega 3 and omega 6, which are beneficial in reducing joint pain associated with inflammation.

Foods from the brassica vegetable family, such as cabbage, watercress, broccoli, Brussels sprouts, kale and cauliflower help to balance hormones and can greatly alleviate menopausal

symptoms.

Healthy adrenal glands continue to supply post-menopausal women with oestrogen, so it's important to eat foods that support adrenal function. Potassium and B vitamins, particularly pantothenic acid (vitamin B5), are beneficial; they are found in tomatoes, avocado, broccoli, cauliflower, dried apricots, banana, oranges and salmon, as well as in wholegrains such as brown rice, barley and quinoa.

Drinking more filtered water helps to regulate body temperature, aim for at least two litres per day and avoid very hot drinks and hot spicy foods as this can worsen symptoms.

Regular weight-bearing exercise helps to increase bone density and reduce stress, the latter of which makes symptoms and hormone imbalances worse. As we age, our metabolism tends to drop and our waistlines expand; having regular daily exercise incorporating both weight-bearing and cardiovascular activity will help keep you trim and increase feel good hormones to boost your mood. Woman who exercise

regularly tend to suffer from fewer hot flushes as well.

Studies show a beneficial effect of a dietary soy supplement containing 40mg of isoflavones per day, improving the management of hot flushes associated with the menopause.⁽¹⁾ Studies also show the beneficial use of rosemary extract (*Rosmarinus officinalis*) for the treatment of depression⁽²⁾, which is often reported from menopausal women who suffer greatly from hormonal changes, weight gain, fatigue and insomnia.

THE EXPERT



Marianna Sulic DipCNM mBANT is a Nutritional Therapist based in London, who specialises in digestive health and women's health. She is a Nutritionist for Cleanmarine MenoMin, a unique all-in-one omega 3, phytonutrient and vitamin blend, formulated to give extra nutritional support for perimenopausal and menopausal women.

Q

What are the most common symptoms to spot when clients are presenting with an underactive thyroid and what is the most up-to-date advice in terms of the appropriate recommendations to address it?

SHEILA DOWNES SUGGESTED: According to the NHS, many symptoms of an underactive thyroid (hypothyroidism) are the same as those of other conditions, so it can easily be confused for something else. Symptoms usually develop slowly and you may not realise you have a medical problem for several years. In the case of hypothyroidism, your body literally slows down. Therefore, symptoms such as weight gain, constipation and brain fog are common. Common symptoms include tiredness, being sensitive to cold, weight gain, constipation, depression, slow movements and thoughts, hair loss, especially outer third of eyebrows, muscle aches and weakness, muscle cramps, dry and scaly skin, brittle hair and nails, loss of libido, pain, numbness and a tingling sensation in the hand and fingers (carpal tunnel syndrome) and irregular or heavy periods.

The thyroid gland secretes hormones that regulate the activities of almost every cell in our bodies. It regulates how quickly we burn calories and maintains our metabolism, which explains why weight control can be a problem if the thyroid is not functioning optimally. The thyroid gland is sensitive to other hormones, such as oestrogen and cortisol. This can help explain how long-term stress can affect its function.

According to the NHS, most cases of an underactive thyroid are caused by the immune system attacking the thyroid gland and damaging it, or by damage that occurs because of treatments for thyroid cancer or an overactive thyroid. Hashimoto's disease is the most common type of autoimmune reaction that causes an underactive thyroid. The thyroid gland is, therefore, no longer able to

make enough of the hormone, thyroxine, leading to the symptoms of an underactive thyroid. It's not clear what causes Hashimoto's disease, but it runs in families. It's also common in people with another immune system disorder, such as type 1 diabetes and vitiligo.

Stress is also another major contributing factor in the development of an underactive thyroid. Mental and emotional stress can interfere with normal adrenal functioning and can eventually lead to thyroid dysfunction.

Medicinal mushrooms can help play a big role in helping you manage stress levels and help regulate the immune system. One important aspect of immune function is its ability to self-regulate downward when needed so that it doesn't become hyperactive and attack your own tissues as in the case with Hashimoto's.

Reishi mushroom is the key mushroom to incorporate into a protocol to address an underactive thyroid as it is a potent adaptogen. Reishi influences cells that regulate the immune system so that these cells appropriately respond when needed. Reishi is also fundamental for managing stress. Due to its adaptogenic properties, it can help the body adapt and handle anxiety and stress. It also acts as a sedative so can aid relaxation and promote better sleep.

Agaricus blazei is another key mushroom in helping to modulate the immune system. In the case of Hashimoto's, it can act in modulating the immune systems response and inhibit the destruction of thyroid hormone secreting cells.

The cordyceps mushroom is another important mushroom, especially in cases of underactive thyroid



caused by autoimmunity. Recent studies have shown that cordyceps can significantly reduce auto-antibody levels in patients with Hashimoto's and also in patients with Grave disease.

If we consider that stress and autoimmunity maybe two of the most common causes of an underactive thyroid, it is imperative that we work on modulating the immune system and manage stress levels to address this common disorder. Medicinal mushrooms have been found to possess immune-modulating capabilities and can help to keep the body and mind in balance.

THE EXPERT



Sheila Downes Dip.NT, NTOI is a qualified Nutritional Therapist, who studied with the Institute of Health Sciences, where she is now mentoring fourth year students in clinical practice. After her first year of studies, she worked alongside Dr Eva Orsmond, working mainly with her patients with type 2 diabetes. Sheila then worked as Head Nutritionist at Your Way in, a private nutrition clinic in Blackrock. Sheila is now based in Dublin practicing as a Nutritional Therapist and is continuing her training in Mycotherapy with Hifas da Terra.

Q

I want to ensure when my clients need a cleanse, they avoid any of the faddy detoxes. Can you recommend the most effective and safest way to cleanse?



BENJAMIN BROWN SUGGESTED:

Detoxification is an ambiguous and heated topic so it helps to have context before making recommendations. In one camp are people who suggest it's a myth, while in the other are those who defend it as an important therapy. So, who's, right? Well, neither have much to stand on. Paradoxically, detox is both something of a myth, and important intervention.

It's a myth, because despite

tremendous interest in detoxification there is sparse scientific evidence to support clinical detoxification programs. Few studies have tested whether various detoxification methods can reduce toxins in human subjects.

It's important, because exposure to environmental toxins has been associated with the development of a wide range of major chronic diseases. We also know that some interventions have a theoretical basis and have

shown potential in preliminary research.

Detoxification is a term that has varying meanings. For clarity, when I talk about detoxification, I focus on 'nutritional detoxification', which I define as 'the use of personalised nutritional therapy and lifestyle medicine to minimise exposure to and/or increase the elimination of persistent organic pollutants, toxic metals and other potentially toxic chemicals from the human body'. So, now we can leave detox salt lamps, bracelets and skin patches for another time.

The clinical practice and theoretical underpinnings of nutritional detoxification are typically characterised by nutritional interventions that support hepatic phase I and phase II metabolism of environmental toxins. Dietary removal of common food allergens, supporting elimination through improved gastrointestinal health, personalised herbal and nutritional supplements, and minimising exposure to toxic chemicals in the environment, food and water may also form part of nutritional detoxification.

I am in the process of publishing some research on this topic and recently compiled a database of published human clinical studies, including case reports, on nutritional detoxification and identified

seven studies of pesticide free or plastic free diets, 24 of nutritional detoxification programmes, and 34 of herbal, nutritional and other dietary supplements with evidence that they reduce body-burden of environmental pollutants and/or reduce clinical symptoms attributed to toxicity.

The problem is that these approaches are varied, target different toxins and don't serve as a very useful guide. So, currently the best detox is grounded in the way that Nutritional Therapists practice, that is with a highly-individualised approach that aims to optimise metabolic health and the function of the core detoxification pathways. More broadly, we need to reduce exposure to toxins, improve nutritional status and support biotransformation. If you want a free patient guide, you can access one I have used here:

www.timeforwellness.org/detox

THE EXPERT



Benjamin Brown, ND is a speaker and science writer. He is Lecturer at BCNH College of Nutrition and Health, Director of Clinical Education for Pure Encapsulations, author of *The Digestive Health Solution* and host of Positive Health Podcast.



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A GIFT FROM THE SEA

Wendy Richards examines the various uses of *Fucus vesiculosus*, better known as bladderwrack.

Fucus vesiculosus has been an herbal remedy and a culinary element in various cultures for centuries. In fact, bladderwrack was the original source of iodine, which was hugely important in treating various conditions, and is also an important part of a nutritional diet.

You can use bladderwrack most commonly as an herbal supplement or powder, which can be consumed directly or mixed into water or facial scrubs to improve its efficacy. While this has been used in alternative treatments for hundreds of years, it has only become well-known to the general public recently, so the demand for this herb is definitely rising.

The high levels of mucilage, beta-carotene, iodine, potassium, zeaxanthin, and other organic compounds give this herb so much power.

Many sea vegetables, and in particular bladderwrack, have many unique characteristics and properties and are used extensively as food in coastal cuisines around the world. The unique composition of bladderwrack includes unique and healthful sugars, known as polysaccharides, that can be metabolised by the action of enzymes produced by the bacteria in our gut into prebiotics, nutrients that encourage the growth of healthy bacteria flora.

NORMALIZING METABOLISM AND THYROID FUNCTION

- The historical uses of *Fucus vesiculosus* were primarily as an agent to enhance thyroid function in cases of goitre and as an aid in weight loss for obesity. This remains the primary use of this plant today in natural medicine.
- Typically, the credit for its activity in thyroid conditions has been given to its high content of iodine, however, the high fucose content of this plant, because of its anti-lectin, immune and inflammatory balancing effects, appears to be responsible for some of the observed benefits on optimising thyroid function in blood type O.
- If you are a blood type O and plan on consuming

bladderwrack as an aid to metabolism and thyroid health, this plant generally works very slowly. A minimum of three months is probably warranted, but in many instances, best results are produced when bladderwrack is consumed regularly at a low dose for about one year.

FUCUS VESICULOSUS: ANTI-MICROBIAL ACTIVITY

The fucoidan found in bladderwrack inhibits the growth of many unfriendly bacteria and viruses. Some of the viruses this compound is antagonistic to include herpes simplex virus, human cytomegalovirus, and human immunodeficiency virus. Bladderwrack has been found to agglutinate the cells of several strains of *Candida*. Bladderwrack also has a toxic effect on some strains of *E. coli* and all strains tested of *Neisseria meningitidis*.

Let's look at a few specific examples of bladderwrack research in the microbial world. The complex sugar structures and other compounds found in bladderwrack have anti-HIV activity. Some of the mechanisms of its activity fall back into the world of our new friend 'anti-adhesion'. Researchers have suggested that, since adhesion is the initial step in HIV infection, blocking adhesion might prevent HIV-1 transmission. In vitro evidence supports this suggestion, with the complex fucose structures found in bladderwrack showing a capability to block HIV adhesion to cells. These same blocking strategies with fucose sugars have also been used in studies of malaria to prevent its spread to additional red blood cells. These sugars inhibit invasion of your red blood cells by the malaria parasite. Dr D'Adamo has written that *Fucus vesiculosus* is a specific for blocking attachment of *H. pylori* – an organism responsible for inducing ulcers and gastritis – in individuals with blood group O.

While no one is suggesting that bladderwrack should be thought of as a solution for HIV or other infectious diseases, one might ponder the question of how the shape of medicine might change if we could use blood type strategies to block HIV and other microorganism from attaching to your cells in



"The unique composition of bladderwrack includes unique and healthful sugars, known as polysaccharides, that can be metabolised by the action of enzymes produced by the bacteria in our gut into prebiotics, nutrients that encourage the growth of healthy bacteria flora."

the first place. Or, ponder the question of how we could employ blood type anti-adhesion strategies in support of conventional use of antibacterial and anti-microbial drugs. If you are a blood type O, the preliminary answer to these questions begins with pondering what health benefits might accrue with the consumption of this common edible seaweed.

One of the emerging fields of research with regards to microorganisms (and lectins) centres around an idea of adherence and anti-adherence. Basically, an unwanted organism can only produce a problem for you to the degree it can attach to or anchor itself to your cells. Lectin damage follows a similar pattern. Recognising this simple concept of adhesion, you will readily recognise the usefulness of the concept of anti-adhesion

or blocking strategies. The question then becomes what foods might provide an anti-adhesion advantage for your blood type.

One of the answers for blood type O is bladderwrack (Note: Kelp also has a high amount of fucose sugars so is another answer). Basically, the fucose in bladderwrack can act as a false decoy, binding the unwanted blood type O environmental debris and sweeping it away before it can bind to or irritate the tissue.

These same blocking strategies with fucose sugars have also been used in studies of malaria to prevent its spread to additional red blood cells.

While no one is suggesting that bladderwrack should be thought of as a solution for HIV or other infectious diseases, one might ponder the question of how the shape of medicine might change if we could use blood type strategies to block HIV and other microorganism from attaching to your cells in the first place. Or, ponder the question of how we could employ blood type anti-adhesion strategies in support of conventional use of antibacterial and anti-microbial drugs. If you are a blood type O, the preliminary answer to these questions begins with pondering what health benefits might accrue with the consumption of this common edible seaweed.

IMMUNOMODULATING ACTIVITY AND ANTI- INFLAMMATORY ACTIVITY

The fucose sugars in bladderwrack can beneficially impact immune system health by stimulating immunoreactions of the humoral and cellular types, and by enhancing the phagocytosis (or consumption of invaders) by your macrophages. These same complex fucose sugars also offer several advantages that counter the blood type O tendency to inflammation. Essentially, they block the recruitment or inhibit an overly aggressive inflammatory immune response at sites of inflammation.

Preventing the ageing process may be the final one of the health benefits of bladderwrack. It is because the herb contains a variety of valuable minerals that help make the skin beautiful, soft and smooth. And there are also other powerful organic chemicals beneficial in slowing down the aging process. The antioxidants in bladderwrack are able to keep the skin healthy and young by getting rid of age spots, blemishes, and preventing the appearance of wrinkles. Plus, these antioxidants help boost skin elasticity, thereby keeping the skin looking tight and well-toned in spite of the old age. ●

METABOLISM

WENDY RICHARDS is a Certified Practitioner in practice and principles of the blood type diet. She is also a Fellow of the Institute of Human Individuality (MIFHI). She represents SWAMI, for the ultimate in personalised nutrition or people who are still battling chronic conditions and has been involved in the health and fitness industry for more than 20 years, and is passionate about the use of nutrition in the prevention and treatment of disease and enhancement of longevity.



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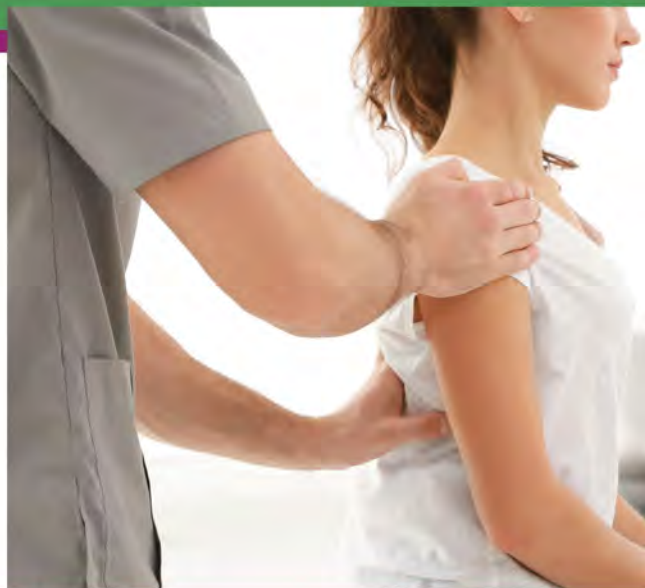
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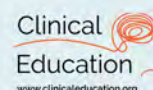


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Celebrating Seagreens

It has been two decades since **Seagreens** was created to bring healthy seaweed to a wider audience. And this work continues, as its founder, Simon Ranger, told Editor, Rachel Symonds.



Back in 1998, we were operating in a society that was far less aware of the power of nutrition, and certainly the availability of products was also more scarce than it is today. It was in 1998 that Simon Ranger (left) decided he wanted to spread the word about seaweed, specifically about why we could all do with it in our diet. This marked the

formation of Seagreens.

Fast forward two decades, and Simon's efforts have been impressive, with the company continuing to go from strength to strength.

"Today, Seagreens produces 15 ingredient and eight consumer products from five different seaweed species, exporting to more than 12 countries around the world," Simon revealed.

But what was it about seaweed that so captured Simon?

"One of the earliest forms of vegetation, very different from land plants, many seaweed species incorporate a balance of all the nutrients capable of sustaining life," he explained.

"Uniquely, they have access to all the minerals and trace elements, which quite naturally leach from the land where, for thousands of years, we have grown most of our food. Equally, except by flood or volcanic eruption, nature has no way of recycling them.

"Remarkably, such species also contain an exceptional balance of essential fatty acids, all the B vitamins, polysaccharides and soluble fibre in amounts seldom found in land vegetation, as well as other rare vitamins and compound nutrients, all of which fill nutrient gaps in land, as well as other sea foods.

"All of this and much more inspired me to start Seagreens and to find ways to get at least a gram of the best seaweed into the population's daily diet. And it astounded me to find that, despite the abundance of this complete source of nutrition around the British Isles, no one seemed to know much about it."

He added: "Seaweeds are a much older, primordial food source, providing all of the nutrients in small amounts in a single species – most importantly, the micronutrients which in the body are required for the metabolism of the major nutrients we can readily obtain from land grown foods."

SEAGREENS ORIGIN

The company was formed with one specific purpose – to get at least one gram of the best seaweed into the nation's daily diet.

Simon explained: "This was based on research data showing that one or two of our native seaweed species are among the most nutritious in the world – but no-one had produced them in human food quality, and in a suitable form, and on a scale, and at a price, for daily use by the general population."

During the first 10 years, Seagreens successfully changed all that, becoming the leading producer of certified, nutritious, wild seaweed in the British Isles and Nordic region. And, in 2011, it was the first to comprehensively study the composition of three of the most nutritious of these native species.

It's important to note that from the very first days of the

business, Seagreens pursued two strategies, the first to support the second.

"The first was to gain a reputation among consumers and Nutritional Therapists as a producer of high quality nutritious seaweed. The second was to persuade the food industry to include seaweed as an ingredient in everyday foods," he explained.

"I believed (rightly as it turned out) that unless the seaweed became a widely used ingredient, it would never reach the very population which would most benefit from its nutritional support. Widespread use was also critical to our commercial survival – a conventional small business could not afford the costs of R&D and production required to bring an entirely new quality of seaweed to the market, no such thing existed in Europe in 1998."

And it was a unique company when it launched, as there was nothing like it on the market at the time.

"Kelp tablets or capsules in health food stores were largely a by-product of industrial seaweed production for biopolymer extraction. We initially developed a very small range of pure seaweed products for use by practitioners and consumers, sold through health stores and clinics, and dried, ground ingredients for food and nutrition product manufacturers," Simon explained.

"This basic model, though on a larger scale, continues today, enabling any person of any age to include nutritious seaweed in their daily diet, as large chopped pieces, granules, in vegetable capsules, and in a very fine form for use in liquids."

The product range today is varied.

"I started in Norway with two Seagreens species in the Trondheim archipelago, where our partnership continues, developing further in the Lofoten Islands within the Arctic Circle. In 2009, we set up in Scotland, and more recently, in Ireland and Iceland," he explained.

"We now produce five different species, with a sixth in



development, to our unique specification, which is free from harmful allergens and contaminants and has a documented nutritional quality recognised in the new Nutritious Food Seaweed standard, certified by the Biodynamic Association."

"We initially developed a very small range of pure seaweed products for use by practitioners and consumers, sold through health stores and clinics, and dried, ground ingredients for food and nutrition product manufacturers."

RESEARCH IMPORTANCE

Simon also believes passionately in the importance of researching seaweed so that its power can effectively be demonstrated, and this emphasis continues.



"All the research studies conducted on Seagreens over the past decade have aimed to increase our understanding of what difference a few grams of certain seaweeds could make to our everyday nutrition and in a range of health conditions," he explained.

"The most recent international reviews of seaweed nutrition research, published in 2015 and 2017^(1, 2), draw similar conclusions; that seaweed has a role to play in reducing the causes of many of our most serious health concerns, including cardiovascular diseases, metabolic disorders like diabetes and obesity, and other degenerative diseases like dementia; they may even replace certain pharmaceutical drugs⁽³⁾.

"I cannot speak for all seaweeds; there are thousands of species and so little is known even of the few we have been fortunate enough to research. I pray for such continuing good fortune."

ATTENTION TO QUALITY

A big part of Simon's message and education over the years



has been to differentiate quality and to show how important it is to choose a seaweed product that is both good for you but also sustainable.

"We, and those who use our products, now have the benefit of hindsight – unique and extensive nutrition and other compositional analytical data collected from every batch of seaweed which we have produced in more than five different locations – which enables us to control and improve the quality of our seaweed to an unparalleled degree," he explained.

"Second, we have moved away completely from fossil fuels commonly used in the drying process, replacing this with ambient air circulation technology and ground source heat. Customers have already remarked that Seagreens are more nutritious, more consistent, and fresher than ever; ample reward for years of obsessive dedication to our original goal. Third, we now produce more species to an independent certified quality standard than any producer in the world."

And the focus over the years has also shifted in tune with the needs of the market.

Simon explained: "From 2008, our focus switched from production development to nutrition research, matching nutritional data to specific applications in nutritional therapy and food manufacturing. Nutritional profiles are provided for each Seagreens product at www.seagreens.co.uk/University/NutritionalprofileofSeagreens.aspx and a summarised research presentation is available to Nutritional Therapists and other professionals at www.seagreens.co.uk/Documents/Seagreens_Pract_Prof_Pres_88pp_v5_low_res.pdf."

Over the years, the company's quality reputation has meant the business has expanded enormously, including with regard to its seaweeds being used by other brands.

Simon commented: "Nutrition brands like Viridian, Tisso, Pukka, Key Pharm, Napiers, Natural Health Practice, G&G, and Green People, and food brands like Waitrose, Sainsbury's, Clearspring, Batchelors, Bart, Artisan Bread, and Ardens."

With 2018 marking the 20th anniversary of Seagreens being founded, Simon has much to be proud of in terms of the company's achievements. But how does he see it? And what lessons has he learnt to take the business forward.

Speaking honestly, Simon commented: "I will not pretend that all has gone right all of the time. We had huge quality problems in the Outer Hebrides, ranging from metals in the water to a failed partnership. This led to us ceasing production in 2016, and we'll not make the same mistakes elsewhere in Scotland.

"To facilitate further growth and uphold the integrity of purpose with which we began, we have formed an international consortium of partners to run the Seagreens business, which is administered by the Seagreens Trust. This cannot be sold, and represents the interests of every part of our operations, including our customers." ●

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General Case Discussion – Menopause

May 4 – East Bergholt, Suffolk

CPD hours: BANT two hours

Speakers: BANT LNC, Emma Rees

Case Studies and General Discussion

May 4 – Cobham

CPD hours: BANT two hours

Speakers: BANT LNC, Clare Jeffries

Website: bant.org.uk/members-area/bant-local-networks/local-network-coordinators-list/#Clare_Jeffries

BANT Supervision

Would you like to grow your nutrition business and build confidence? Why not join a Nutritional Therapy Supervision group and benefit from targeted support for your particular Nutritional Therapy dilemmas.

May 10 – Romsey
June 11 – online

CPD hours: BANT two hours

Speakers: Ruth Taylor

Cost: £30

Website: bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Ruth_Taylor

BANT Supervision – Stroud Evening Group

May 16 – Stroud

CPD hours: BANT two hours

Speakers: BANT Supervisor, Natalie Gillan

Cost: £30

BANT Supervision

June 15 – Hereford

CPD hours: BANT two

Speakers: BANT Supervisor, Debbie Lewis

Cost: £30

Genesnippers Nutrigenomics Course (four days) Gesnippers

June 23-24 and July 14-15 – York

CPD hours: BANT 22 hours

Speakers: Angela Bailey and Anne Pemberton

Cost: £800

Website: www.genesnippers.org.uk

Eating Conundrum – Diets and Disease in the 21st Century CNELM

June 29 – CNELM, Wokingham or online

CPD hours: BANT 5.5 hours

Speakers: Dr Deanna Minich

Cost: Graduates, £69, BANT Members, £60, Students, £45. Please note, all fees once paid are non-refundable. A delegate unable to attend the event at CNELM on the day or via webinar will be given access to the recording of the webinar after the event.

Website: cnelm.co.uk/courses/cpd/

Female Health, Genetics and Functional Testing Lifecode GX

June 9 – London

CPD hours: BANT six hours

Speakers: Angela Heap NT (Dip CNM), Karen Harrison BSc (Hons) Dip CNM mBANT rCNHC

Cost: £119 (£99 BANT with discount code BANT20)

Website: www.lifecodegx.com/events/

Forthcoming webinars...

Target Publishing, which publishes *Nutrition I-Mag*, is hosting a series of webinars for practitioners. Register at www.ihcanconferences.co.uk/webinar

Digestive enzymes: clinical considerations in ibs, sibo, dysbiosis and the leaky gut



Presented by Dr Michael Murray
Tuesday May 8, 6.30pm-7.30pm

An in-depth look into the underlying core issues in these common GI disturbances, along with a focus on the clinical use of plant and microbial derived enzyme will be presented. From dealing with food intolerances, incomplete digestion, biofilm, and microbial adherence, there is a growing scientific rationale on the use of digestive enzymes in a wide range of functional GI disorders.

Some of the questions to be answered in the webinar include is fecal pancreatic elastase a true indicator of pancreatic enzyme insufficiency? What causes biofilm formation and how can digestive enzymes help dissolve biofilm? What role do digestive secretions play in the prevention of SIBO? How do digestive enzymes influence the microbiome? Plus, there will be a question and answer session at the end of the webinar.

Are social factors causing increased anxiety and depression? #unsocialmedia #21stcenturydisease



Presented by Jo Gamble BA (Hons) DIP CNM
cFMP ABAHP fellow ICT
Tuesday May 22, 6.30pm-7.30pm

Modern life is stressful but many clients do not see where their stress is coming from and in fact will contest the fact that they are even 'stressed'. Despite this, we know that stress and anxiety are underlying causes of many diseases of the 21st century as they cause clinical imbalances when cortisol becomes the dominant hormone in the body. Jo will combine her IFMCP (IFM certified practitioner) training with her behavioural therapy background to help you to identify the subtle ways in which modern life is contributing to your client's poor health and guide you on a journey of how you can combat these effects.

In this webinar you will learn:

- The numerous subtle ways that social factors contribute to 21st century disease.
- How stress has become a fashion accessory in modern life.
- How to bring clients back to a calm and relaxed life using nutrition and lifestyle medicine.

Dietary fibre: An old concept in new light



Presented by Dr Megan Rossi
Tuesday June 19, 6.30pm-7.30pm

Dietary fibre has been dubbed the Cinderella nutrient, but could it be the secret for optimal gut health? In recent years, our understanding of dietary fibre has progressed considerably, uncovering potential therapeutic opportunities applicable in both health and disease, which further supports the importance of healthy plant-based eating patterns. This talk will review the latest evidence, current recommendations and future areas of research to support clinicians in practice. The key objectives will include:

- Review the evolution of dietary fibre as a nutrient.
- Investigate mechanisms underpinning its health benefits.
- Understand fibres role in manipulating the gut microbiota.
- Insight into the latest clinical trials.
- Practical tips for translation into practice.

Look out for more free webinars planned for 2018. For more information about webinars, including the topics and the speakers, visit www.ihcanconferences.co.uk/webinar.



COOK, SHARE, EAT, THE VEGAN WAY

Áine Carlin takes us on a journey of vegan exploration.



**Cauli-rice maki
rolls with beetroot
and apple**



**Lemon chia
pudding with a
warm blackberry
compote and
toasted coconut**



**Watermelon wedge
party cake**



**Sweet potato and
walnut koftas**

Cauli-rice maki rolls with beetroot and apple (Serves 2-4)



I am often put off making sushi, mainly because I can rarely be bothered to boil, cool and season the rice, but since swapping to cauli-rice it's become much more of a regular feature on my menu. The fillings vary, although recently I've been quite taken with this beetroot and apple pairing – having that sweet crunch in there truly makes all the difference. Cauli-rice in itself isn't terribly exciting but adding a little lemon zest, chilli and herbs like this suddenly transforms it into something quite special.

INGREDIENTS:

- 4-8 nori seaweed sheets
- Small handful of watercress or pea shoots
- 2 small cooked beetroot, cut lengthways into thin strips
- ½ cucumber, cut into matchsticks
- 1 apple, peeled, cored and cut into matchsticks

CAULI-RICE:

- 1 small head of cauliflower, broken into florets
- ½ green chilli

- 1 thumb-sized piece of fresh root ginger, peeled
- Small handful of flat leaf parsley
- Small handful of fresh mint
- Grated zest of 1 lemon
- Sea salt flakes and black pepper

DIPPING SAUCE:

- 3 heaped tbsp egg free mayo
- 1 heaped tbsp Thai sweet chilli sauce
- Juice of ½ lemon

METHOD:

- 1 To make the cauli-rice, add the cauliflower florets to a food processor with the rest of the ingredients, season generously and pulse together to form a nubby, coarse 'rice'.
- 2 For the dipping sauce, put the ingredients in a small bowl and mix together well. Set aside.
- 3 Lay a nori sheet on a sushi rolling mat, shiny-side down, and cover three-quarters of the sheet with the cauli-rice, leaving a gap at the end furthest away from you.
- 4 Beginning with the watercress and following with the beetroot, cucumber and then the apple, layer the ingredients in a horizontal line across the middle of the sheet. Begin to roll the nori sheet up away from you, tucking it tightly as you go and dabbing the gap at the end with a little water to seal. Repeat with the remaining nori sheets and filling ingredients.
- 5 Fill a large jug with water and use it to wet a sharp knife. Shake any excess water off the knife before slicing the sushi rolls into equal-sized rounds. Transfer to a platter and serve with the dipping sauce.

LEMON CHIA PUDDING



WATERMELON CAKE



KOFTAS



Lemon chia pudding with a warm blackberry compote and toasted coconut (Serves 2)



Chia crops up regularly in my cooking. Those unassuming seeds that transform into tapioca-like pearls once they meet liquid have long held my fascination – not only because of their nutritional properties but also because they satisfy me until lunch. And while I try not to get too hung up on their 'healthy' credentials, it's difficult to ignore the impressive benefits that range from their high fibre and protein content through to the essential omega 3 fatty acids they contain – though let's be honest, none of that truly matters if they're not up to scratch in the taste department. I like to bolster their neutral (some might say 'non-existent') flavour with a dash of citrus. The addition of lemon in this recipe really livens up breakfast time and also makes for an excellent brunch intro, especially when paired with this comforting, warm blackberry compote. Like rice pud and jam. Only better.

INGREDIENTS:

- 250ml oat milk, plus extra if necessary
- 3tbsp canned coconut cream
- Grated zest and juice of 1 small lemon or lime
- Pinch of pink Himalayan salt
- 3tbsp maple syrup
- 4tbsp chia seeds

BLACKBERRY COMPOTE:

- 150g fresh blackberries
- 1tbsp maple syrup
- Juice of ½ orange

TO SERVE:

- Finely sliced orange peel
- 2 heaped tbsp toasted coconut flakes

METHOD:

- 1 Whisk the oat milk, coconut cream, lemon zest and juice, salt and syrup together in a bowl until combined. Stir through the chia seeds and refrigerate for at least an hour, preferably overnight.
- 2 To make the blackberry compote, bring the ingredients to a gentle simmer in a small saucepan and cook for 10-15 minutes until thick and syrupy. Lightly mash the berries, leaving a few whole, and set aside until needed.
- 3 Remove the pudding from the refrigerator and stir to loosen the mixture, adding a touch more oat milk if it is looking a little stiff.
- 4 Divide the pudding among shallow bowls, topping each with a large spoonful of the compote, some finely sliced orange peel and a smattering of toasted coconut.

MAKI RICE



WATERMELON CAKE



KOFTAS



Watermelon wedge party cake

(Serves 8-10)



Party food doesn't necessarily have to be unhealthy. While sugar-laden cakes are a welcome occasional treat, sometimes I like to serve something that is both equal amounts virtuous and yummy. There is no conceivable way your guests will be disappointed with this quirky little fruit cake, especially once you cut into it and reveal its uber-pink interior – cue the 'wows'. The toasted coconut gives it some wonderful crunch, while the lightly whipped coconut cream exudes 'excuse me while I lick the bowl' factor in abundance. A terrific option for a kids' party (especially if they've already loaded up on sweets and whatnot), this cake is an easy way to bring things down a notch in the chaos department without them feeling like they're being cheated. Win-win.

INGREDIENTS:

- 1 small seedless watermelon
- 250ml carton coconut cream, chilled
- Grated zest and juice of ½ lime
- 3tbsp agave nectar
- 50g toasted coconut flakes
- 4-5 strawberries, halved, to decorate

METHOD:

- 1 Slice both ends off the watermelon and place it cut-end down on a chopping board. Using a sharp knife, cut away the remaining rind to create a loose cake-like shape, trimming the sides to square things up a little. Transfer to a serving plate.
- 2 Place the chilled coconut cream in a stand mixer, add the lime zest and juice and agave nectar and beat on a high speed until thick, fluffy and cloud-like (alternatively, put everything in a bowl and beat together using a hand-held electric whisk). Refrigerate for 10 minutes to chill and firm.
- 3 Once chilled, dollop the whipped coconut cream on top of the watermelon and ease it down the sides with a spatula to coat – don't worry if it slides off to begin with, just work it up the sides until it adheres. Scatter over the toasted coconut and decorate with fresh strawberries. Time to party!



Sweet potato and walnut koftas (Makes 12)



Cook Share Eat Vegan by Áine Carlin, published by Mitchell Beazley, £20
www.octopusbooks.co.uk
 Photos © Danielle Wood



For me, vegan meatballs, burgers and anything else of that ilk can be a little underwhelming, with a tendency to fall apart at first bite. This is where the humble walnut (with a little help from the ever-reliable sweet potato) comes in. Not only do walnuts add bite and texture but, crucially, they help form a surprisingly 'meaty' ball, with the added bonus of being, well, good for you. However you shape them, these koftas are guaranteed to be devoured.

INGREDIENTS:

- 1 small sweet potato, halved
- 2tbsp olive oil
- 1tbsp milled flaxseed
- 100g lightly toasted walnuts
- 50g panko breadcrumbs
- 1tsp dried oregano
- 1tsp ground cumin
- ½ tsp ground coriander
- ¼ tsp ground cinnamon
- ½ tsp dried chilli flakes
- Small bunch of fresh coriander, roughly chopped
- 1 spring onion, very finely chopped
- Sea salt flakes and black pepper

METHOD:

- 1 Preheat the oven to 220°C (200°C fan), Gas Mark 7.
- 2 Lightly brush the sweet potato halves with one teaspoon of the olive oil, arrange skin-side down on a tray and bake for 40 minutes until soft. Remove from the oven, scoop out the flesh into a bowl and season lightly. Set aside to cool.
- 3 Combine the flaxseed with three tablespoons of water. Set aside for five to 10 minutes.
- 4 Place the walnuts in a processor and pulse to a fine crumb. Add the breadcrumbs, oregano, spices and flaxseed mixture and pulse again to combine. Transfer to a large mixing bowl, add the coriander, spring onion and sweet potato and season generously. Fold to combine, working the sweet potato into the mixture until completely incorporated.
- 5 Heat the remaining oil in a frying pan over a medium heat.
- 6 Take a tablespoon of the mixture and gently form it into a cigar-like cylinder using your fingers. Repeat with the remaining mixture, then add the kofta to the pan in batches and fry for three to four minutes on each side, or until golden, turning carefully as you go (be sure not to overcrowd the pan or the temperature will lower, resulting in the kofta absorbing too much oil.) Transfer to a plate lined with kitchen paper to drain briefly. Serve hot or cold.

MAKI RICE



LEMON CHIA PUDDING



WATERMELON CAKE



I-Mag giveaways

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



RAW SPORT HEALTH AND PERFORMANCE

Raw Sport protein blends are innovative formulations, designed by Nutritional Therapists. Raw plant-based proteins are fast becoming the recommended choice for practitioners, providing each client with 24g of protein per serving with 7.4g of BCAA. The additional nutritional components make the product unique; five superfoods, curcumin and natural electrolytes have been added to deliver micro nutrients and antioxidants. Digestive enzymes, konjac fibre and a five billion five-strain probiotic are added to enhance the digestive process. Organic ingredients are selected and are free from GMO, soya, gluten, dairy and sugar.

🍏 **I-Win:** We have five to give away (RRP 34.99).

HIGHER NATURE ADVANCED NUTRITION COMPLEX

A high-potency multivitamin and mineral containing all the key nutrients in bioavailable organic forms for enhanced absorption. Also contains molybdenum, which is not normally found in other multis, and is often low in the diet due to depleted levels in the soil. Advanced Nutrition Complex contains full spectrum of B vitamins and iron, good levels of absorbable calcium and magnesium, including Lithothamnion calcarea for enhanced bioavailability.

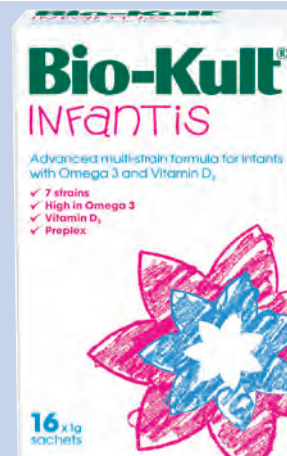
🍏 **I-Win:** We have 30 pots to give away.



BIO-KULT

The Bio-Kult range is a line of live bacteria supplements for the whole family. The line includes Bio-Kult Infantis (with omega 3 and vitamin D3) for infants and children, Bio-Kult Candéa to help protect against candida overgrowth, Bio-Kult Pro-Cyan with cranberry extract for urinary tract support and the original Bio-Kult with 14 strains of bacteria digestive and immune support.

🍏 **I-Win:** We have one bundle of the whole range to give away.



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