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JUL/AUG 2017

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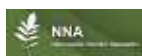
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Welcome



As a magazine that was founded to support and further the knowledge of Nutritional Therapy students and recent post-graduates, we are huge advocates of educational events that help to further learning and keep people abreast of all the latest developments in this fascinating field.

This was in real evidence at the recent IHCAN Summit; held once a year by Target Publishing, which also publishes *Nutrition I-Mag*, this

hugely exciting event heard from a wide variety of speakers, including the ever popular, Dr William Walsh, who all spoke through the course of the day on a number of very relevant topics.

Being there for the duration of the day, seeing our 300 delegates come through the doors, inspired for a day of learning and enthusing about all the had learnt as they left, it was clear to me there really was no better place to demonstrate the power of education, of collaboration and of industry excellence.

It was also wonderful to see all our leading colleges in the same room, many of which distribute this magazine to you so you can continue learning and staying ahead of industry developments.

You can read more details about the IHCAN Summit on page 16 of this issue, or turn to page 31 for our CPD Directory for a selection of further courses.

And if this has inspired you even further, why not book onto one of our forthcoming IHCAN Conferences; our September event is already sold out, so why not get your place secured at the next event on November 18, on the theme of Ageing. Log onto www.ihcanconferences.co.uk

Rachel

RACHEL SYMONDS, EDITOR

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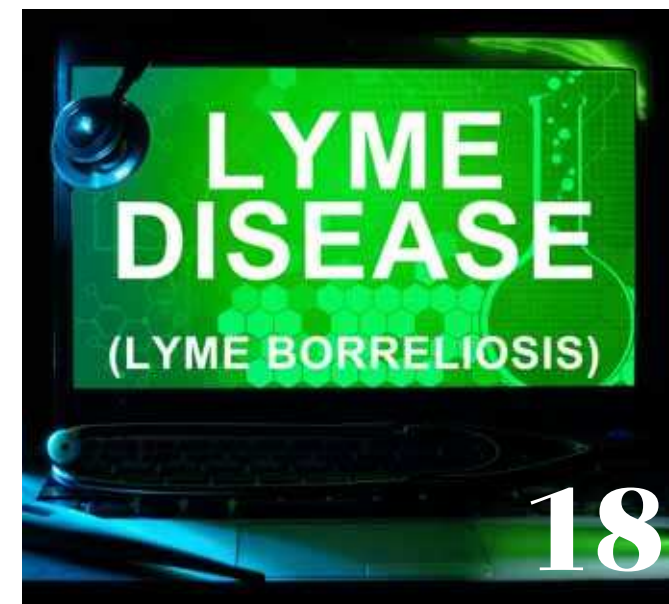
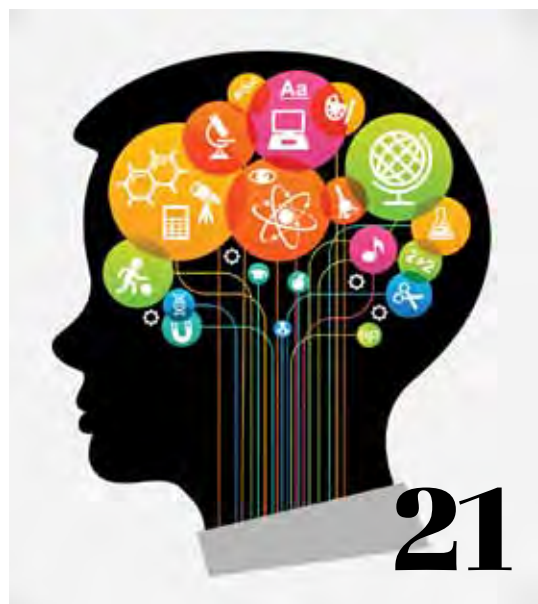
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CHILDREN'S HEALTH

The important nutritional advice to apply to young ones



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OUR CONTRIBUTORS

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



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Katherine Pardo BSc (Hons), Dip ION is Head of Nutrition at nutritional supplement company, Nutri Advanced, one of the leading educators in the field of Functional Medicine. She originally trained as a Nutritional Therapist at the Institute for Optimum Nutrition, in London, and is committed to helping people make realistic and sustainable food and lifestyle choices for improved health and wellbeing.



Claire Barnes

Claire Barnes has a diploma in Naturopathic Nutritional Therapy from the College of Naturopathic Medicine (CNM) in Bristol. She works as a Technical Advisor at Probiotics International (Protexin), which manufactures Lepicol Lighter, a high fibre product containing seven strains of live bacteria, glucomannan, chromium, and psyllium husk.



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Rose Holmes, Dip.ION, BSc (Hons), PGCE, mBANT, CNHC is a Registered Nutritional Therapist with a special interest in chronic illness, circadian rhythm disruption and healthy ageing. She is the Education and Training Manager at Rio Trading Company and provides training to other practitioners and health professionals on natural therapies.



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Egzona Makolli is a fully qualified Nutritionist with a Bachelors and a Masters degree in science related subjects. She is currently Technical and Commercial Nutritionist for Kinetic, the UK's leading natural and organic product distributor, working with nutritional brands such as Nature's Answer, Jarrow, Nutiva, Barlean's and Amazing Grass.



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Sue McGarrigle ND DipION CNHC mBANT NNA is a clinical nutritionist and naturopath. As a lecturer to college and university students to Masters level, Sue has trained hundreds of healthcare and medical practitioners in many aspects of nutritional therapy. She writes as a regular contributor to specialist nutrition articles for magazines and newspapers. Her lectures offer a comprehensive approach to nutrition practice and practical naturopathic techniques.



Natalia Otero Sancho

Natalia Otero Sancho, dipCNM MBANT CNHC is a Registered Nutritional Therapist and an Ambassador for Hifas da Terra. Specialising in gastrointestinal health, stress management, hormonal balances, and natural anti-ageing, she works closely with individuals to design bespoke nutrition programs. After graduating at the College of Naturopathic Medicine, she trained with the Institute for Functional Medicine in the USA, and is currently working towards full Functional Medicine Certification by the Institute. In addition to her functional nutrition practice at Lomax Chelsea, in London, Natalia also runs detox retreats in Tuscany, Italy.



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News bites

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

Food Standards Scotland calls for 'radical revolution' to improve health of the nation

A new report has confirmed Food Standards Scotland's (FSS) case for a 'retail revolution' to help people in the country make healthier choices.

FSS made the claims after commissioning University of Stirling research to understand the complex retail landscape which supports its recommendations to extend the sugar tax beyond soft drinks, reformulate products to reduce sugar and fat and salt, improve portion sizes, address less healthy food promotions and provide clearer consumer information in both the retail and out of home sectors

This comes after a package of proposals was agreed by FSS in January, ranging from taxation to regulation around food and drink promotions. Portion size reduction and tougher targets for reformulation of foods and drinks were also recommended. This follows the news that on this current trajectory, the projection is that 40 per cent of people in Scotland will be obese by 2030.

FSS points out that the report enforces FSS's view for the need for change in this sector and a retail revolution. This agrees with previous findings showing that in Scotland, around 50 per cent of less healthy food categories

are purchased on promotion, compared with healthier foods at around 30 per cent.

Dr Gillian Purdon, FSS Senior Dietary Advisor, explained: "Food Standards Scotland welcomes this report by the University of Stirling. We believe it is vital that action is taken to change the imbalance of in-store promotions in favour of healthier food and that consumers have the clearest possible information to make informed choices.

"The report supports Food Standards Scotland views and recommendations for the need to extend sugar tax beyond soft drinks, to reformulate products to reduce sugar fat and salt, to resize portions, address less healthy food promotion and to provide clearer consumer information on products in both the retail and out of home sectors. This report will help us to develop new approaches to improve the balance of food offered and promoted by the retail sector.

"It is clear that a combination of measures will be needed overall to enable healthier eating. Regulation of promotions of high fat, salt and/or sugar food and drink within retail stores and out of home premises should be taken forward as a priority."

HFMA honours journalist's commitment to raising profile of natural health

Jo Waters has been honoured for her efforts in reporting on natural health.

The Health Food Manufacturers' Association (HFMA) has announced the winner of its Health Journalist of the Year, an award presented annually on behalf of its member companies to recognise the best of journalism covering the natural health industry.

Jo is a freelance health and medical writer for national newspapers and magazines. She is a regular feature writer for the *Daily Mail's* Good Health section, an extensive list of consumer magazines and websites and the author of several health books.

Jo developed a specialism in health, writing and editing for leading medical titles including *Doctor*, *General Practitioner* and *Nursing Times*, before moving into women's consumer magazines, writing engaging and educational stories on a range of health issues from diet, to alternative health, prenatal nutrition and healthy beauty.

Robert Taylor, HFMA Chair, (pictured with Jo), commented: "Jo's wealth of knowledge and dedication to natural health reporting makes her an inspiring story-teller and advocate for our industry. Jo resonates with her readers, speaking of her own health issues and experience with using natural health products. She is not afraid to challenge conventional wisdom when needed and to offer her advice and expertise on



prevention and natural solutions. Jo certainly reflects one of the HFMA's core values of helping a nation to be healthier."

Jo added: "I'm honoured to receive this award from the HFMA and feel extremely privileged to have been able to earn a living for so long writing about a subject I'm still totally fascinated by. Enjoying good health is about so much more than just taking prescription pills and with life expectancy increasing every week, there's an increasing appetite from the public for accurate and engaging information on how they can manage their own health through diet and lifestyle, supplements and complementary medicine, as well as mainstream medical treatments."

The HFMA has also acknowledged the growing and diverse channels in which the natural health industry is now reported and has announced that starting this year, it will recognise bloggers and social influencers who celebrate and educate responsibly on the work of the natural health industry with its Blogger of the Year Award.



WHO proposes new definition of chronic pain

The World Health Organization has put forward proposals for a new definition of chronic pain in a bid to see care for patients improve.

The organisation, the global institution setting health policy standards, put forward the plans at the Societal Impact of Pain (SIP) symposium, where Dr Robert Jakob, Medical Officer at the WHO, gave a preview of the new definition and its implications.

The classification of chronic primary pain as a disease should lead to governments taking a new interest in pain and how their health systems assess and treat it. The WHO International Classification of Diseases (ICD) is usually followed by governments when they are altering their health systems and considering which services to fund. Apart from governments, the ICD also informs clinicians and researchers alike. Now, chronic primary pain is likely to be included for the first time when the current ICD process concludes.

"This will have major implications for healthcare," commented Rolf-Detlef Treede, Vice-Dean for Research at the Medical Faculty Mannheim of Heidelberg University, in Germany, and former President of the International Association for the Study of Pain (IASP). "We should see chronic pain finally getting the recognition it deserves."

Liisa Jutila, Vice President of Pain Alliance Europe, added: "Chronic pain has for years been poorly understood and poorly treated. The WHO recognising chronic primary pain should reverse this trend and improve the lives of patients around the world."

The European Pain Federation EFIC, which represents 20,000 healthcare practitioners and researchers in the field of pain, has been proposing a definition of chronic pain as a disease since 2001. The current ICD process has been supported by an IASP task force that developed the classification of chronic primary pain for the 11th ICD catalogue.

Call for amends to food law to ensure appropriate use of sports nutrition

A coalition of European organisations in the field of sports nutrition have called for adaptations to general EU food law to ensure the safe use and appropriate labelling of sports food.

Four trade associations in the field of sport foods – Specialised Nutrition Europe (SNE), EU Specialty Food Ingredients, the European Vegetable Protein Association (EUVEPRO) and Food Supplements Europe (FSE), have highlighted that consumers rely on sports foods to meet specific nutritional needs before, during and after exercise. Yet, the current EU legislative framework on general food does not take into account the specificities of sports foods, preventing appropriate labelling and putting at risk its safe use.

And so they have come together to call for the action to ensure the safe use and appropriate labelling of sports foods.

President of SNE, Roger Clarke, explained: "Sports foods are specifically formulated to meet the nutritional requirements in case of physical performance and recovery after exercise."

In this context, they contain essential nutrients such as vitamins, minerals, proteins, amino acids, or carbohydrates in quantities, which frequently differ from the nutritional composition of normal foods. It is also critical to adequately inform consumers how to correctly use these products and

label the nutritional composition in a way that is relevant for their specific use.

In order to ensure a meaningful, harmonised regulatory framework that promotes an efficient and safe use of sports foods, the call asks for a clear definition of the category, the establishment of certain essential compositional criteria, the possibility for labels to refer to specific nutritional needs of people engaged in sports activities, not to the general population, and the authorisation of conditions of use to properly inform consumers.

"Without such adaptations, consumers will not have access to the information they need to properly and safely use sport foods," the four groups added.



Investment firm acquires Holland & Barrett

It has been announced that L1 Retail is to acquire the health and wellness retailer, Holland & Barrett for £1.77bn.

The Nature's Bounty Co. and the Carlyle Group have announced the acquisition to L1 Retail, which is the retail investment arm of LetterOne. The transaction is expected to close by September 2017 subject to customary regulatory approvals. Further financial terms were not disclosed.

Commenting on the acquisition L1 Retail Managing Partner,

Stephan DuCharme, said: "Holland & Barrett is a clear market leader in the UK health and wellness retail market, with attractive growth positions in other European and international markets, and growing online presence, with a leading customer loyalty programme and 10 million active cardholders. We believe that the company is well positioned to benefit from structural growth in the growing £10 billion health and wellness market and has multiple levers for long-term growth and value creation."

In Research

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

Scale of sugar intake among teenagers revealed in new study

New research from the University of Hertfordshire has revealed that some four in 10 teenagers buy sugar-filled drinks at lunchtime, despite them not being allowed inside school.

The results of the study have been published in the journal *Appetite* and urge schools to work harder to offer affordable, nutritious lunch options and a more desirable social environment.

The University of Hertfordshire research involved more than 500 teenagers aged 13-15 living in Scotland and studying at seven different schools, and found that 41 per cent consume sugar-filled drinks – including regular fizzy drinks and energy drinks – during the school lunch break, despite these being banned within the school gates.

Teenagers who bought sugar-sweetened drinks from outside the school canteen were significantly more likely to eat foods high in fat, sugar and/or salt, such as chips and sweets at lunchtime, as well sausage rolls at mid-morning break, than those who did not consume sugary drinks (26.9 per cent versus 12.6 per cent). They also consumed four times more sugar at lunchtime than those who didn't purchase a

sugary drink (41g compared to 10g).

Worryingly, even those young people who did not purchase a sugary-sweetened drink at lunchtime still exceeded the WHO recommendations that sugar consumption be halved to no more than five per cent of daily energy intake. This suggests considerable effort will be required to reduce young people's sugar consumption, above the Government's introduction of a sugary drinks tax.

Other findings included that significantly fewer young people who purchased lunch in the school canteen regularly consumed a sugary drink at lunchtime, compared with those who purchased lunch at school less often, and a proportion of young people who drink sugary drinks reported eating no food at lunchtime at all. At mid-morning break, plain water was significantly more likely to be consumed by those who did not consume a sugary drink at lunchtime.

Researchers Dr Laura Kate Hamilton and Professor Wendy Wills, from the Centre for Research in Primary and Community Care at the University of Hertfordshire, led the study, with Dr Wills commenting: "These findings are of major concern, as research has not only found

an association between regular sugar-filled drink consumption and weight gain, metabolic syndrome and obesity but also an increased risk of type 2 diabetes.

"Whilst we need a strategy to reduce the consumption of sugar-filled drinks by young people, simply removing access to soft drinks within schools is clearly not enough, as a number of the young people we studied were able to leave the school premises during their lunch period to visit nearby shops. This led to them purchasing sugary drinks on a regular basis, as well as less nutritious foods.

"It is imperative that schools provide healthier options alongside a more desirable social environment and that they include young people in these decisions. In addition, policy measures need to be bold to tackle young people's consumption of sugar, as sugar sweetened drinks offer zero nutrition. For young people who drink sugary drinks but eat no food at lunchtime, and possibly no food before school or at mid-morning break, which was the case for some teenagers in our study, tough measures are needed, to restrict the sale of energy drinks to under 16s."



Magnesium shown to reduce risk of fracture

A higher intake of magnesium has been linked to reduced risk of osteoporosis-related fractures.

That is according to new research published in the *British Journal of Nutrition*, which investigated the relationship between dietary magnesium (Mg) and osteoporosis, as well as fractures.

The researchers aimed to investigate Mg intake and the onset of fractures in a large cohort of American men and women involved in the Osteoarthritis Initiative over a follow-up period of eight years. Dietary Mg intake (including that derived from supplementation) was evaluated through a FFQ at baseline and categorised using sex-specific quintiles (Q) and osteoporotic fractures were evaluated through self-reported history.

Overall, 3,765 participants (1,577 men and 2,071 women) with a mean age of 60.6 (sd 9.1) years were included. During follow-up, 560 individuals (198 men and 368 women) developed a new fracture. After adjusting for 14 potential confounders at baseline and taking those with lower Mg intake as reference, men and women in the highest quintile reported a significantly lower risk for fracture. Women meeting the recommended Mg intake were at a 27 per cent decreased risk for future fractures.

"In conclusion, higher dietary Mg intake has a protective effect on future osteoporotic fractures, especially in women with a high risk for knee osteoarthritis. Those women meeting the recommended Mg intake appear to be at a lower risk for fractures," the researchers concluded.



Vitamin K2 found to be important for kidney patients

New research has suggested that vitamin K2 may play a crucial role for those having hemodialysis.

The clinical intervention trial saw researchers examine the risk factors and response to vitamin K2 supplementation among hemodialysis patients, and confirmed this population's specific need to correct vitamin K2 deficiency.

The study, based in Lebanon and published in *BMC Nephrology*, assessed if there is a correlation between vitamin K status and vascular calcification score in hemodialysis patients, and if K2 supplementation would improve extra-hepatic vitamin K status in this Eastern Mediterranean populations.

According to the researchers, the scientific data showed that the vitamin K2 intake in hemodialysis patients is estimated to be 40 per cent lower than in the healthy individual group. It has been accepted by the European medical society that hemodialysis patients are vitamin K deficient, and they can

benefit from vitamin K2 supplementation. However, this aspect had not yet been evaluated in Eastern Mediterranean populations.

In this study, 50 hemodialysis patients were enrolled in the clinical study, and received daily 360µg of menaquinone-7 (MenaQ7) for four weeks. Extrahepatic vitamin K status represented as the level of dpucMGP (dephosphorylated-uncarboxylated matrix Gla protein, or 'inactive' MGP, a K-dependent protein) and vascular calcification scores (AC-24) were measured at the beginning and at the end of the vitamin K2 treatment.

The main conclusion was that hemodialysis patients have profound vitamin K deficiency as assessed by high dp-ucMGP plasma levels. High dpucMGP level was significantly correlated with high aortic calcification scores and thus can be used as a non-invasive marker for vascular calcifications.

According to the researchers: "The daily administration of 360µg of vitamin K2 (MK-7) decreased dpucMGP by 86 per cent after four weeks and it was well tolerated. Further studies should be conducted to assess the change in vascular calcifications after an extended duration of therapy."

Commenting on the results, Hogne Vik, Chief Medical Officer of NattoPharma, which supplied the MenaQ7, said: "NattoPharma was excited to participate in this clinical intervention trial. We have long recognised the important implications correcting a vitamin K2 deficiency can have on human health, particularly in patient populations who suffer intense vascular calcification as a result of their condition."



Med diet reveals potential to reduce frailty



A Mediterranean diet has long been associated with longevity and now a new study has suggested that it may reduce the incidence of frailty in the over 75s.

The Mediterranean diet (MeDi) is considered a key component for healthy ageing, including prevention of age-related disability, but its association with frailty, independent of disability, has never been assessed.

And so researchers, writing in the journal *Clinical Nutrition*,

set out to investigate the relation between MeDi adherence and frailty incidence among persons aged over 75 participating at the prospective population-based French Three-City Study.

The study sample consisted of 560 initially non-frail participants of the Three-City-Bordeaux Center, seen at the 2009-2010 follow-up, and re-examined two years later. Adherence to MeDi was computed from a food frequency questionnaire (scored as 0-9). Frailty was defined as having at least three out of the following five slightly modified Fried frailty criteria; involuntary weight loss, exhaustion, slowness, weakness and low physical activity. Logistic regression models adjusted for sociodemographic and clinical covariates, including cognitive performance and depressive symptomatology, were used to assess the association between

MeDi score and subsequent frailty risk.

Over the two-year follow-up, 79 participants (14 per cent) became frail. Older adults with the highest MeDi adherence (score 6-9) had a significantly 68 per cent frailty risk reduction compared to those in the lowest MeDi category (score 0-3). Regarding the frailty criterion separately, the highest MeDi adherence was associated with a significantly reduced risk of incident slowness, poor muscle strength and low physical activity, compared to the lowest MeDi adherence.

In conclusion, the researchers said: "In addition to its well-documented beneficial effects on health, adherence to MeDi might contribute to prevent the onset of frailty, even at late stages of life."

New to market

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



EASY DOES IT

Easy Bean has unveiled two new gluten free crispbreads.

Seaweed & Sesame and Cheddar Crunch are the new varieties, which takes the award-winning range to five distinct flavours, all naturally gluten free and packed full of goodness.

A nutritious blend of native seaweed is used to season the new Seaweed & Sesame Crispbread. Described as a superfood, seaweed is mineral rich, a good source of iodine and a low-sodium salt replacer. Then, for a Japanese twist, the crispbread is topped with toasted sesame seeds. Easy Bean uses wild harvested seaweed from Scottish supplier, Mara Seaweed.

Meanwhile, West Country Mature Cheddar give flavour to the new Cheddar Crunch Crispbread. The cheese is made by farmhouse cheesemakers, Barber's in Somerset. The addition of polenta enhances the crunch and to finish, the crispbread has a healthy topping of linseed, flax, millet and chia seed.

INTRODUCING ADONIS

With continued growth in the free from sector, a new healthy snack bar aims to make it easier for people to avoid gluten.

Adonis Smart Foods is a new low sugar snack start-up, which includes two crunchy nut bars designed to keep energy levels up and sugar highs low.

In the range is Pecan, Goji Berry & Cocoa Bar, which was a Free From Food Awards 2017 Gold winner, and is filled with pecan pieces and hints of cocoa and goji berry. There is also Coconut, Vanilla & Acai Berry Bar.

The products are suitable for those who are gluten free, soy free, vegan and paleo.



YORKTEST DEVELOPS RANGE

A new test to pinpoint personal food triggers has been introduced by YorkTest Laboratories.

The Modern Living DietScan is a food-specific IgG programme, which involves a simple finger prick blood test carried out at home, with the blood sample sent back

to YorkTest's laboratory and analysed for reactions to 160 popular ingredients, ranging from quinoa, wheatgrass and chickpeas, to sweet potato, aloe vera and kale.



MENOPAUSE FOCUS WITH NEW LAUNCH AT G&G

Meno-Time is a new blend of hormone-balancing herbs and vitamins specially formulated to help women safely and naturally adjust to the physiological changes associated with the menopause.

The new supplement, from G&G Vitamins, contains an important extract of desert date, a fruit that grows on the Balanites aegyptiaca tree. The secret behind desert

date's rejuvenating qualities is a constituent known as diosgenin, a natural hormone-like compound that has made wild yam a popular alternative hormone treatment amongst women for decades.

There are many species of wild yam; each type containing a different concentration of diosgenin. These varying levels make it difficult to obtain the same qualities in every supplement. For this reason, G&G uses desert date, as there is only one species of this plant.

The diosgenin element found in these fruits is a type of steroid, known as saponin. These plant compounds have a similar chemical structure to those of endogenous hormones, such as progesterone and oestrogen. This resemblance means saponins can attach to hormone receptors on cells, enabling them to mimic human hormones. Since these plant steroids are much weaker than the body's own hormones, they are able to create a regulatory effect, which helps bring hormone levels back into balance.

G&G has also included kelp, aloe vera and evening primrose oil.

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33% Ganoderma lucidum (Reishi)

33% Cordyceps sinensis

33% Lentinula edodes (Shiitake)

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BANT News



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

NUTRITION EVIDENCE DATABASE FULL LAUNCH

BANT is excited to announce the launch of the Nutrition Evidence Database.

Nutrition Evidence is a platform of high quality nutritional science and functional medicine research, designed to support nutrition practitioners' clinical decisions that enable their delivering effective, individualised evidence-based recommendations.

Current key features include:

- Almost 20,000 high quality research papers relevant to nutritional therapists, as well as other functional and lifestyle medicine practitioners. Papers have been selected to provide the best evidence available for clinical interventions on humans, ideally randomised controlled trials and systematic reviews, as well as meta-analyses and some cohort studies.
- BANT enhanced papers, further curated by the Nutrition Evidence Editorial Board and enriched by an indexing team of BANT members, based on the functional medicine model. These papers include plain language summaries, clinical imbalances and laboratory testing. These papers will appear first in any search results. The indexing process is ongoing and new papers will be added weekly.
- A wide selection of filters to allow you to find papers discussing key functional medicine factors and keywords. For example, you'll be able to search for papers on environmental inputs or structural integrity.
- Account personalisation features (for example, subscribe to notifications).

An array of exciting new features, including expert reviews, paper recommendations by the Editorial Board and more are just around the corner, so please register for a free account today.

To access the database, visit either the members only Facebook page at www.facebook.com/groups/301593573562034/ or the members only LinkedIn page at www.linkedin.com/groups/4633986 for further information.



A CELEBRATION OF VOLUNTEERING



BANT has hosted its very first VOTY (Volunteer of the Year Award) at the Willow Hotel, in Kingston upon Thames.

The awards were set up to celebrate the absolutely amazing contribution volunteers make to the running of BANT; the organisation only has one full time and five part time employees, with all other contributions to the running of all of the different work streams and activities the organisation undertakes are carried out by enthusiastic volunteers.

BANT was pleased to announce that Abir Hamza-Goodacre, its very own BANT Networks Team Leader, is the 2017 VOTY winner.



Abir Hamza-Goodacre

Abir's commitment, professionalism and leadership with her involvement in the Local Networks and Regional Branches has been well noted across BANT. Abir has worked hard to create a strong community with the Local Network Coordinators, whilst being supportive and motivational to all involved. In 2016, Abir launched a national campaign to recruit, motivate and coordinate five regional branch committees to plan and execute quality CPD events for all BANT members. In addition, Abir mentors 30-plus Local Network Coordinators. Her work ethic, professionalism and commitment is undeniable.

BANT would like to thank the sponsors of the event, Cytoplasm as Gold Sponsor, Silver Sponsors Lamberts, Balens, Lifecode Gx and Mycology Research Laboratory, and Nutri Advanced as Bronze Sponsor. Without them, the event wouldn't have been possible.

BANT would also like to thank and congratulate the organising team; Michelle Chester, Lindsay Beveridge, Amy Young and Nicky Rapley for the time and dedication they put into organising this very special event. BANT thanks the Willow Hotel for the amazing welcome they gave us all and the most delicious and healthy lunch. We are looking forward to next year's event already!

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are new additions to Alpro's Big Pot range plant-based soya alternatives to yogurt. Made with fruit pieces, these can be enjoyed on their own, or topped with crunchy granola and seeds. Each 125g serving provides 91-94kcal, 4.5-4.6g plant protein, 0.5g saturated fat and is a source of calcium and vitamins B2, B12 and D.



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Integrative Healthcare and Applied Nutrition IHCAN 2017 summit Summit success

We bring you all the news from the recent IHCAN Summit.

Saturday, June 10 saw more than 300 professional practitioners and students converge in London for the annual Integrative Healthcare and Applied Nutrition Summit (IHCAN).

Formerly known as the CAM Summit, the event is now in its third year and was the biggest to date, with more than 300 delegates, 50 exhibitors and four industry-leading speakers.

Feedback was overwhelmingly positive from visitors, who tweeted during the day using the hashtag #ihcansummit:

"Fantastic day at #ihcansummit today. Huge thanks to all speakers and organisers" @cguyclarke

"Great talk from Jeanette Hyde. Food is always better than supplementing & rattling when you walk!" @larajezeph

"Thoroughly enjoyed the #ihcansummit. Great speakers, great venue, great food and great company" @sarahjhurst

"Changing notions and perceptions of stress at #ihcansummit" @positivelyslim

Dr William Walsh began the day discussing 'Advanced nutrient therapy: healing the brain to improve energy, mood and behaviour' and was followed by Dr Malcolm Kendrick debunking myths about cholesterol.

Registered Nutritionist, Jeanette Hyde, then shared case studies and practical advice from her book, *The Gut Makeover*, and Dr Khalid Khan finished the day looking at Medical Neuro-Linguistic Programming and how it can be integrated within practice.

As well as innovative education, the summit also played host to more than 50 of the industry's leading product suppliers, each showcasing their own latest research, new product launches and special show-only deals and discounts.

The event scored well with attendees, with post-event feedback telling us that 100 per cent of attendees found the event valuable and would attend again. One delegate told us: "Great day and lectures, one of the best, if not the best I have ever attended."

Further feedback included "Fantastically organised day with a good range of speakers. Great value for money, the quality of the whole day was brilliant" and "What a great way to connect with others in the nutrition world".

The summit will be returning in 2018 to the same venue, with a date to be announced shortly. To register your interest in attending next year's event, visit www.ihcansummit.co.uk and fill in the simple online form.



Integrative Healthcare and Applied Nutrition

IHCAN 2017 conferences

in collaboration with



Leo Pruimboom confirmed as keynote speaker

Places are filling up for the final IHCAN Conference of the year, which will be focusing on 'Ageing', hosted by the Cavendish Conference Centre, London on November 18.

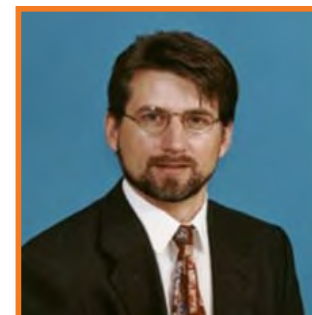


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THE NUTRITIONAL POWER OF MEDICINAL MUSHROOMS

How and why you could incorporate mushroom nutrition into your clinic protocols.





They have been used for centuries, were identified for their botanical properties nearly a century ago, and have evolved and adapted to survive – mushrooms are pretty amazing when you consider their nutritional power. Becoming of increasing importance in the world of nutrition, medicinal mushrooms offer real potential to your clients, thanks in part to the multitude of functions they can influence.

Egzona Makolli BSc Hons, MSc, ANutr, Technical and Commercial Nutritionist at Kinetic, which has the OM range of mushroom nutrition products, commented: "Mushrooms have long been used in traditional and folk medicine but the ability to identify beneficial properties were first discovered in 1928 by Alexander Fleming with the discovery of penicillin. Mushrooms have been living on earth for the last 440 million years and, unlike other living beings, which have been extinguished, mushrooms have evolved and adapted to survive.

"Mushrooms are believed to contain more than 150 active compounds, which include polysaccharides, dietary fibre, prebiotics, active enzymes, B vitamins, vitamin C, vitamin D and minerals zinc, selenium and many other nutrients."

And interestingly, Natalia Otero Sancho dipCNM MBANT CNHC is an Ambassador for Hifas da Terra, which specialises in mushroom nutrition, pointed out: "Two of the most recognised pharmaceutical drugs come from the mushroom kingdom; penicillin and statins."

MUSHROOMS FOR NUTRITION

We will often see the term 'medicinal mushrooms' used to describe this area of nutrition, and while that is an established term, William Ahern, Co-Founder and Managing Director of Mycology Research Laboratories, which has conducted clinical research with leading UK and European practitioners and institutions in the field,

made a counter point.

"In the strict sense of the word, 'medicinal mushroom' would refer to those pharmaceutical forms of extracts of specific beta-glucans from select mushrooms that are commonly prescribed by medical doctors in Japan, China and Korea. i.e. Krestin (PSK), PSP, Lentinan," he explained.

"In Japan, China and Korea, it has been found that 'medicinal mushrooms' play an important role in either acting as an immune stimulant or as an immunomodulator. Another form of medicinal mushrooms is the non-extracted form or the biomass form of mushrooms that would include the mycelia and the primordia. This second form of mushroom 'nutrition' is more commonly recommended by healthcare practitioners as a supplement to a normal diet in United States and Europe."

"Mushrooms are believed to contain more than 150 active compounds, which include polysaccharides, dietary fibre, prebiotics, active enzymes, B vitamins, vitamin C, vitamin D and minerals zinc, selenium and many other nutrients."

Otero Sancho continued: "The term 'medicinal mushrooms' refers to a wide range of fungi, or mushrooms from which purified biochemicals used for disease management are obtained. Medicinal mushrooms are recognised as the most potent immune response modulators and immune boosters in the natural world.

"Mushrooms are part of the fungi kingdom. As such, they are more closely related to humans and other members of the animal kingdom than to plants and, partly because of this relative evolutionary closeness,

a large number of the compounds they produce show physiological activity in humans, as well as other animals."

She continued: "Mushrooms are approved in various countries to be used by doctors; *Coriolus versicol*, also called *Trameters versicol* or more commonly Turkey Tail, is currently used as a cancer treatment along with surgery, chemotherapy and radiation therapy. Two substances extracted from the mushroom, polysaccharide K (PSK) or Krestin and polysaccharide – peptide (PSP), are being researched as complementary cancer therapies (CNM).

"Lentinan, the first concentrated beta glucan extract from Shiitake, is a licensed pharmaceutical product in Japan (mainly used for stomach cancer) (CNM)."

So, what actually constitutes a medicinal mushroom?

Makolli explained: "Medicinal mushrooms are mushrooms which produce medically metabolites and possess health benefits to humans. Medicinal mushrooms are powders or extracts used for prevention, alleviation or healing of diseases and for nutritional reasons."

Ahern added: "There are two forms of medicinal mushroom; the extracted form and the biomass form. The extracted forms target specific beta-glucans thereby providing a form of patent protection and more importantly are supported by clinical trials conducted in Japan, China and Korea. Unfortunately, those extracted forms of medicinal mushroom with clinical support conducted in Asia have not been approved by health authorities in either the United States or Europe due to the lack of clinical trials in a non-Asian population. Nevertheless, these extracted forms are available in select European countries.

"The biomass form of mushrooms, or mushroom nutrition, are commonly marketed in Europe in powder and tablet form. This form of mushroom nutrition provides not only supplementation with beta-glucans, but also a series of enzyme and secondary metabolites."





MUSHROOM FUNCTIONS

Let's look here a little closer at the various benefits that can be found from utilising medicinal mushrooms.

Otero Sancho explained that the active compounds from medicinal mushrooms fall into two categories.

"Common to all mushrooms; immunologically active polysaccharides – beta glucans, proteoglycans and other related compounds," she explained. "Limited to one or few species: Anti-microbial compounds; Triterpenes (anti-cancer, anti-inflammatory and anti-histamine, and sedative action); Hericinones and Erinacines, which help stimulate the synthesis of Nerve Growth Factor (NFG) and many other unique compounds, which provide additional health benefits; Phenols, powerful antioxidants and powerful cell-signalling pathways; Sterols (Ergosterol – the precursor of vitamin D); Indole compounds (L-tryptophan, 5HTP, serotonin); Chitin (antibacterial and antioxidant properties); and prebiotics, individual mushrooms also contain prebiotics to feed good gut bacteria."

She continued: "Immunological changes triggered by mushroom polysaccharides include:

- Activation of immune cells such as macrophages, neutrophils, monocytes, natural killer cells and dendritic cells.
- Increased antibody production.
- Increased interferon production.
- Increased immune system activity against a range of cancers.
- Inhibition of tumour metastasis.
- Reduction in pro-inflammatory cytokines.
- Inhibition of prostaglandin synthesis.

"It is important to notice that the effect of mushroom polysaccharides is to help restore immune activity when the immune system is compromised by stress, chronic illness or tumour burden, in individuals with auto-immune

conditions but also when the immune system is overactive by down-regulating key components of the pro-inflammatory immune response."

Ahern added: "The concentration of the beta-glucan content and/or the types of enzymes that constitute the mushroom determine whether the mushroom acts as a mild anti-viral agent, as a detoxifying agent or as an immune enhancing agent. The references to the use of mushrooms in both Traditional Chinese Medicine (TCM) and Japanese Traditional Medicine are numerous. However, the forms of the use, dried, tincture or extract, are important in terms of efficacy and ultimate use."

SPECIFIC BENEFITS

There are a number of mushrooms that have come to the fore in recent years in terms of their nutritional importance, and understanding the differences between these is important.

Makolli set out the following guidance: "There are many medicine mushrooms, which each have different benefits. The mushroom with the longest record of medicinal use is *Ganoderma lucidum*, known as Reishi mushroom and is one of the great longevity tonics of Chinese Medicine used for many purposes. *Lentinula edodes* (Shiitake) is found in many Asian cuisines, *Coriolus versicolor* (Turkey Tail) is the most well-researched medicinal mushroom in the world. *Ophiocordyceps sinensis* (Cordyceps), another widely used tonic in Chinese Medicine, *Chaga inonotus obliquus* (Chaga), a medicinal mushroom, which has



been used in Russian and Eastern European Traditional Medicine. *Hericium erinaceus* (Lion's Mane) is a native North American, European and Asian mushroom and *Grifola frondosa* (Maitake) is a mushroom which grows in clusters at the base on trees and are typically found in late summer to early autumn."

And what are their functions?

■ **Reishi:** Makolli explained: "Reishi contains polysaccharides b-glucan, coumarin, mannitol and alkaloids, which have immune modulating and anti-inflammatory properties. Reishi also contains triterpenes called ganoderic acids, which studies have shown helps alleviate common allergies by inhibiting histamine release and improving oxygen utilization." And Otero Sancho added: "Reishi (*Ganoderma lucidum*) is another very important mushroom in my clinics as it works as a natural adaptogen to help reduce anxiety, chronic stress and insomnia, also a powerful anti-inflammatory due to its tripterene compounds, hepatoprotective, and anti-ageing, among other properties, in fact, it is called the 'eternal youth mushroom. It should be compulsory for everyone over 30!"





■ **Cordyceps (Cordyceps sinensis and caterpillar mushroom):**

"The main active components of the extract are polysaccharides, cordycepin, ergosterol, precursor of vitamin D, whose anti-angiogenic (growth of new blood vessels by tumours to grow and metastasize) action has been clinically proved," Otero Sancho explained. "This mushroom is well known for its revitalising properties, it increases cognitive function, such as memory and concentration, improves mood and sleeping quality, reduces fatigue and helps enhance athletic performance, mainly due to adenine content, which provides energy when needed and increasing resistance to fatigue. It acts as an antioxidant, a polysaccharide of strong activity against free radicals and a stimulator of SOD (antioxidant enzyme – attempt to stop damage before occurs by triggering chemical reactions that help get rid the body of free radicals and dangerous O₂ in the form of oxides) and glutathione peroxidase (the master of antioxidants, which helps repair damage by free radicals). This mushroom has been also shown to increase levels of male and female hormones – might improves fertility, sexual stamina (as a natural viagra), and helps regulate menstrual cycle."

■ **Shiitake:** Has shown in animal studies to have anti-inflammatory properties through the inhibition of IL-8 mRNA expression associated with the inhibition of NF-κB activation, which is triggered by TNFR1 (TNF receptor) endocytosis.

■ **Lion's mane (Hericium erinaceus):** Otero Sancho commented: "Remarkable for its particular compounds, hericenones and erinacines, with strong antibacterial properties, helps modulate the gastrointestinal mucous epithelial membranes repair, leaky gut syndrome and restore good gut bacteria. These compounds also help stimulate Nerve Growth Factor (NGF), which plays an important role in peripheral neuropathies, especially in those related with diabetes, and regeneration of the myelin sheath, multiple sclerosis

and other neurodegenerative diseases. It is also highly recommended to patients that go through menopause as some compounds that help regenerate NFG have been shown to reduce menopausal symptoms; hot flushes, irritability, anxiety and sleep disturbance."

■ **Maitake:** Contains an array of 1,3/1,6 beta-glucan compounds, which have been shown to have a positive impact on the immune system. Animal studies have also shown that maitake may help support healthy blood-sugar levels and reduce insulin resistance.

"Medicinal mushroom supplements combine different types of mushrooms and target specific issues within the human body. They combine specific doses and, when taken alongside a balanced diet, they can overall improve lifestyle and health."

■ **Chaga:** "Contains the some of the highest sacred levels of antioxidant and an abundance of beta-d-glucans, which have been show to help balance the response of the immune system. Chaga can be used to help boost the immune system when necessary and can also slow it down when it's overactive," Makolli said.

■ **Turkey tail:** It contains an abundance of antioxidants and is considered an immune stimulating mushroom with anti-viral, anti-bacterial and possible anti-tumour effects. Turkey tail contains a natural source of polysaccharide PSK, which has shown to have anti-cancer properties.

■ **A. Blazei Murrill (Royal Sun Agaricus):** Otero Sancho explained: "Its main components are beta glucans, proteoglycans, and high levels of lipids – linoneic acid, oleic acid, stearic acid and ergosterol. This mushroom is the most potent immune response modulator, and

potent anti-inflammatory because of its capability to enhance the activity of SD, glutathione and catalase. It has also anti-fungal properties against *Candida albicans* by increasing the production of hydrogen peroxide – *Candida* does not like oxygenated water."

MUSHROOM PROTOCOL

The next step to mushroom nutrition is to understand how you as a practitioner can build this into any programme recommended to a client.

Makolli suggested: "Mushroom contain a plethora of beneficial nutrients such as B vitamins, vitamin D, protein, enzymes and many more which can be beneficial to a wellness programme, alongside a balanced diet. Mushrooms are also some of the most potent natural medicines on the plant, with many studies having shown the benefits of using mushrooms. Medicinal mushrooms can provide immunological, anti-inflammatory and antioxidants benefits, they have also been shown to have anti-microbial and anti-viral properties.

"Medicinal mushroom supplements combine different types of mushrooms and target specific issues within the human body. They combine specific doses and, when taken alongside a balanced diet, they can overall improve lifestyle and health."

Ahern added: "Assuming the mushroom supplement (extract or biomass form) has undergone rigorous quality control and the therapist is trained on the use of mushroom supplementation or mushroom nutrition, the therapist can have confidence in provoking a specific immune response without a concern on how the constituents of the supplementation could interact with each other; unlike a TCM formula or combined omega 3 complex."

Ahern, however, did point out that there is much confusion regarding mushrooms and what specific





mushrooms do what and suggested further education for Nutritional Therapists wanting to use them in clinic.

"A review of the leading literature in medicinal mushrooms will lead the reader to find that every mushroom does everything. This confusion is caused by clinical work conducted in various Asian countries with varying extracts of the same mushroom," he explained. "A nutritional therapist should attend a course in which there is a specific application with a specific mushroom conducted with a number of subjects in which clinical significance is exhibited (when possible)."

Ahern also added: "Of key importance to the nutritional therapist is the role of proteolytic enzymes in the gastrointestinal tract. The proteolytic enzymes (pepsin and trypsin) play a key role in the absorption or lack of absorption of mushroom nutrition. Nutritional therapists should also have a familiarity with enzyme therapy since the enzymes in the biomass form of mushroom nutrition prevent oxidative stress, inhibit cellular growth and increase detoxification."

And Otero Sancho also added a word of warning, advising: "They are safe in most conditions, can be used in combinations with other food supplements and pharmaceuticals and can usually be taken for long periods of time without side effects. However, caution is recommended when taking mushrooms with reported anti-coagulant activity such *Ganoderma lucidum* during pregnancy and when taking warfarin.

"Studies have shown that drugs that are metabolized via the Cytochrome P450 (CYP) 2D6 pathway may have the potential for interaction (the study showed that AHCC would increase the metabolism (conversion/breakdown in liver) of drugs metabolized by CYP2D6). The good news is that few chemotherapy drugs use this same pathway. In cancer treatment, the only mainline chemotherapies that use this pathway are Doxorubicin and Tamoxifen; other chemotherapeutic drugs use different pathways

from the ones used by AHCC. Therefore, if you are taking other medications, you should ask your doctor or pharmacist the following question; 'Is the drug I am taking metabolized through the cytochrome P450 2D6 pathway?' (<http://ahccresearch.com/faq.html>)."

QUALITY AND BIOAVAILABILITY

There are some key points to note when you are making recommendations to clients about the type of mushroom product to offer because, as with other supplements, quality and bioavailability, among other factors, can vary widely.

"As a nutritionist, I believe that a dietary supplement is only worth buying if it has therapeutic potency. Clients should have a look at the bioavailability, which means can our body actually digest and absorb the product," Makolli explained. "Current studies have been conducted with standard extracts of the mushrooms and have not been as concentrated. This may suggest that using a concentrated dose may enhance the benefits found in the studies. Studies have also shown that it is also important to try and find supplements which have organically grown mushrooms as it has been shown that mushrooms absorb and concentrate whatever they are grown in."

Ahern pointed towards the importance of knowing where and how the mushroom product has been produced.

He explained: "When cultivating mushrooms, a mushroom emits enzymes to digest the substrate in their surroundings. What if the surroundings were exposed to the use of pesticides or human fertilization? In such circumstance, the mushroom can be high in heavy metals or *E Coli*. Significant testing and certification of the raw material is key to both medicinal mushrooms and mushroom nutrition."

Otero Sancho also advised care in the preparation before the extraction process during drying, storing, and grinding process, and special care in the extraction avoiding contamination.

She added: "Proper analytical test that confirm a minimum of active ingredient content indicated on the label of the package of the supplement."

RESEARCH FOCUS

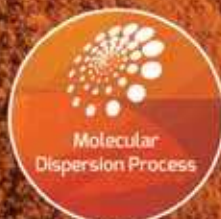
New research is emerging all the time with regard to the nutritional use of mushrooms.

"Mushrooms have attracted many modern studies, with particular findings, both laboratory and human clinical studies, showing that fungi may stimulate immune function. These studies have focused on compounds called polysaccharides, which have been intensely studied since the 1950s and may have immunostimulating and anti-inflammatory properties," Makolli explained.

"Currently there are thousands of scientific studies on medicinal mushrooms. PubMed revealed nearly 16,000 studies on mushroom related topics. Many current studies are focused on β -Glucans biological response modifies based on their effects on the immune system. Many clinical trials have demonstrated the properties of medicinal mushrooms, particularly on compounds found in mushrooms, which have shown to possess anti-tumour properties. Several clinical trials have shown improvements in disease-free survival and progression of cancer patients. Studies have also shown mushrooms to have anti-microbial, anti-diabetic, anti-inflammatory and possible anti-proliferative effects on cancer cells."

And Ahern added: "Nutritional therapists are encouraged to read *Medicinal Mushrooms* by Christopher Hobbs, as well as newsletters that outline clinical applications on mushroom nutrition, such as *Mycology News* or the *Journal of Clinical Mycology*." ●

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LYME DISEASE

(LYME BORRELIOSIS)



– A NUTRITIONAL PROTOCOL

A practitioner guide to the recommended programme for sufferers of Lyme disease.





Whether more people are aware of it, or actual numbers are increasing, Lyme disease these days is a condition that generates frequent headlines, which is interesting considering it dates back thousands of years.

What many people are less aware of is the nutritional interventions that can help to reduce symptoms of this often debilitating disease, with Nutritional Therapists being able to put together an effective programme for sufferers.

So, what do you need to know as a Nutritional Therapist, and what are the crucial factors to bear in mind?

Rose Holmes, Dip.ION, BSc (Hons), PGCE, mBANT, CNHC is a Registered Nutritional Therapist and Education and Training Manager at Rio Trading Company. She reported: "The true numbers of new cases of Lyme disease in the UK is unknown for a variety of reasons. Lyme is not a notifiable disease in the UK, and although there are approximately 1,000 serologically confirmed cases yearly in the UK, Public Health England estimates the true number to be approximately 3,000, whilst other estimates indicate figures could be far higher and closer to 45,000 cases per year.

"World Health Organization data indicates throughout Europe that the number of Lyme diseases cases yearly reported has increased, on average, by 65 per cent for the last 20 years. And yet, numbers are likely to be underestimated because case reporting is inconsistent, the chance of misdiagnosis (due to nonspecific symptom which can mimic other health conditions) is high and many infections go undiagnosed. A general lack of awareness about early symptoms and other possible means of transmission may have impact on numbers of cases reported."

"World Health Organization data indicates throughout Europe that the number of Lyme diseases cases yearly reported has increased, on average, by 65 per cent for the last 20 years. And yet, numbers are likely to be underestimated because case reporting is inconsistent, the chance of misdiagnosis (due to nonspecific symptom which can mimic other health conditions) is high and many infections go undiagnosed."

A DEFINITION

So, let's start with what the condition actually is, and how it can be contracted.

"Lyme disease is a disease caused by *Borrelia burgdorferi* (Bb), a bacterium identified in 1982 by William Burgdorfer," Holmes explained.

"The first reported occurrence of Lyme disease was in 1975 in Lyme, Connecticut in the USA, when a cluster of children and adults developed uncommon arthritic symptoms. Lyme is not a 'new disease', however, and the bacteria have been found in fossilized amber. Genetic analysis of the 5,300-year-old ice mummy, Otzi, indicates he is the oldest known case of Lyme disease."

So, how does a person contract the disease?

"Lyme disease can be contracted via bites from ticks including deer, dog and sheep ticks. Ticks regurgitate into the bloodstream when they bite, passing Bb and other pathogens (up to 237 types of micro-organisms) to the host. Mosquitos, fleas, mites and other blood-sucking insects can also transmit Lyme disease. There is also some evidence which supports human-to-human

transmission via blood, semen, breast milk and other means," Holmes explained.

But what are the factors around why we appear to be seeing a rise in incidence of the disease?

Climate change may, in part, account for the rising occurrence of Lyme disease; the warmer temperatures are more favourable to ticks, which can live longer," Holmes reported. "Ironically, the increasing trend for healthy lifestyle pursuits, such as cycling, walking and trekking, may expose more of us to environments where we may be exposed to ticks.

"Additionally, since a healthy immune system may help keep manifestation of Lyme disease dormant, diet and lifestyle may impact numbers of those infected who manifest symptoms. Recent trends of diets high in processed foods and low in the nutrients needed for immune function, for example, may play a role in numbers of reported cases of Lyme disease."

SYMPTOM CHECK

Symptoms of Lyme disease can be hugely varied, and this can make sufferers unaware they may be suffering

From a symptomatic point of view, Holmes set out those that can be expected.

"Symptoms of Lyme disease can be categorised by stages of the disease. In the acute stage (days five-21 after infection), an erythema migrans rash may occur (although this doesn't occur in all cases). The rash is often in a characteristic target or 'bull's eye' shape – and it can spread over the body. Other symptoms common in the acute stage are headaches, 'flu-like symptoms, stiff neck, fatigue and Bell's palsy," she explained.

"In stage two of Lyme disease (after three to six months), infected individuals may experience migratory arthritis, pain and weakness in arms and legs, loss of appetite and neurological symptoms, such as memory





loss. Stage three of Lyme disease occurs after 12 months, with varied symptoms including severe chronic neurological symptoms, profound fatigue, memory loss, pain and depression. Other symptoms include poor word retrieval, tingling hands, joint pain, sinus problems, floaters, blurred vision, GI disturbances, heart rhythm abnormalities and difficulties regulating temperature."

And also keep in mind that the disease can have a knock on effect to other areas of health.

Holmes explained: "Lyme disease can imitate many other diseases, including multiple sclerosis, myelopathy, neuropathy, autism or brain tumours. Lyme disease can cause many disorders including arthritis, cardiomyopathy and arrhythmia. Borrelia can cause Parkinsonism, schizophrenia, depression and dementia. Many fibromyalgia and CFS (chronic fatigue syndrome) patients are positive for Lyme disease. There may also be association with Alzheimer's disease as seven out of 10 autopsy brains of Alzheimer's victims are determined to have had Borrelia."

There can also be an expected impact on the gut in sufferers.

"Lyme disease may cause gut hyperpermeability, leading to food intolerances and nutrient deficiencies. Lyme disrupts the immune system, depleting zinc, manganese, magnesium, and affecting white blood cells. Infection with Bb can depress the immune system, allowing other infections to take hold," Holmes explained. "Symptoms may make it difficult for sufferers to work, with consequent financial, professional and self-esteem implications."

But remember, some clients may not even know this is what they are suffering from.

"Not everyone infected with Bb displays symptoms. If the immune system is healthy and functioning optimally, the infection can stay dormant for years.



Nutritional status associates generally with health and specifically to immune function. Our immune system requires nutrients to function optimally to protect us," Holmes pointed out.

"The quality of the diet impacts nutrient status, as well as gastrointestinal function. This may impact detoxification and elimination – important considerations for immune health and defence against microbes.

Elevated cortisol, such as might be associated with poor blood sugar control, can suppress cell-mediated immune response.

"Many persistent Lyme disease sufferers (as much as

80 per cent) have Kryptopyrroluria (KPU), a metabolic disorder, where abnormal porphyrins carry out significant amounts of zinc in the urine. With KPU there is loss of vast amounts of zinc, B6, biotin, manganese and magnesium. When large amounts of zinc, B6 and manganese are lost, the immune system may be disarmed. KPU affects the synthesis of heme, needed for haemoglobin and for our Cytochrome enzymes (for detoxification, especially of mercury and other heavy metals."

TREATMENT OPTIONS

Suspected sufferers should seek advice from their





"Most importantly with Lyme disease is to address the bacterial and other infections and support the immune system, correcting any deficiencies."

medical professional to seek diagnosis.

If diagnosed, people may find they are offered a variety of treatment options.

"Antibiotics may be given by the medical profession. Antibiotics like Amoxicillin, Doxycycline and Ceftriaxone are very effective for acute Lyme (i.e. if caught in the first three weeks). Short courses are ineffective and very often result in relapses," Holmes pointed out.

But she also cautioned: "There are several problems with conventional medical treatment; antibiotic use may negatively impact beneficial gut flora, *Borrelia* are multi-pleomorphic and can change form and 'hide' from antibiotics, antibiotics may result in creation of biofilms, which 'protect' the bacteria, antibiotics may kill off mitochondria, affecting recovery, and, with long-term use, bacteria may become resistant to antibiotics. Tests used by the medical profession for diagnosing Lyme disease may not accurately indicate the presence of infection."

This is where nutritional therapy can play an important role.

Holmes commented: "Protocols based on botanicals, like the Cowden Support Programme (developed by Wm Lee Cowden, MD) utilising primarily South American botanicals may help to resolve the majority of the root causes of most clients' symptoms and can be used to support with 'post-treatment Lyme disease syndrome' and many other chronic health conditions of unclear cause."

A NUTRITIONAL PROTOCOL

So, what kind of programme could you recommend for sufferers seeking help with nutritional therapy?

"As for any client of nutritional therapy, the suggested nutritional programme should be individualised to that client's specific circumstances and needs. As a general guide, it is important to ensure there is no malfunction in blood sugar regulation or in the gastrointestinal tract. It is particularly important to support elimination channels – bowels, liver, gallbladder/bile, lymph, kidneys and skin," Holmes explained.

"Function of adrenals, thyroid and liver (particularly methylation pathway) should be assessed and malfunction/inadequacies addressed. Emotional state should also be considered – unresolved past traumas may need to be addressed through counselling and therapies like Bach Flowers. Protocol should address these as well as supporting cellular energy."

She continued: "Most importantly with Lyme disease is to address the bacterial and other infections and support the immune system, correcting any deficiencies. Other areas to check include vitamin/mineral deficiencies, exposure to environmental toxins (including chemicals, mould and heavy metals) and dental issues (for example, mercury amalgams and root canals).

In terms of the diet, removal of known food allergens, as well as avoidance of dairy, gluten and sugar, is advisable. Diets high in fresh vegetables and without processed foods may benefit. Always ensure elimination channels are working properly."

You may also want to build in some specific supplements to support any programme.

"Immune support via the usual vitamins and minerals (vitamin C, vitamin D, selenium and zinc), via herbs



such as echinacea and astragalus, and via other phytonutrients with adaptogenic (for example, ginseng) properties. Ensure detoxification via parsley, chlorella, coriander/cilantro, burbur and pinella," Holmes recommended.

"Anti-microbials will be an important part of any protocol for Lyme disease. Broad-spectrum anti-microbials particularly for Bb and other co-infections of Lyme include Samento (also an immune system modulator), Banderol, Pau d'Arco and high-dose Stevia. Cumanda has anti-fungal activity. Houlttuynia and Takuna show anti-viral properties and Mora and Quina show anti-parasitic activity.

"Other anti-microbials to consider are Quassia amara and Sweet Annie (*Artemisia annua* – also an immune system modulator). Other immunomodulatory botanicals, besides Samento and Sweet Annie, include *Polygonum cuspidatum* (Japanese knotweed). Biofilms can be a problem and serrapeptase may help break biofilms. Additionally, if necessary, support methylation with bioavailable forms of B vitamins and address gut dysbiosis with probiotics, prebiotics, and digestive enzymes/HCl, ensuring healthy gut lining with the usual 'repair' supplements." ●

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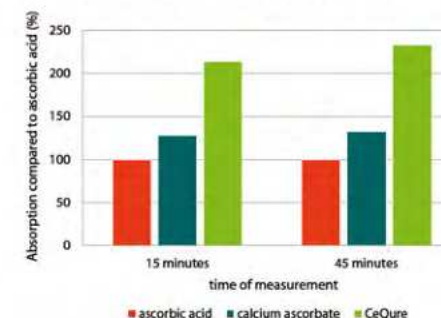
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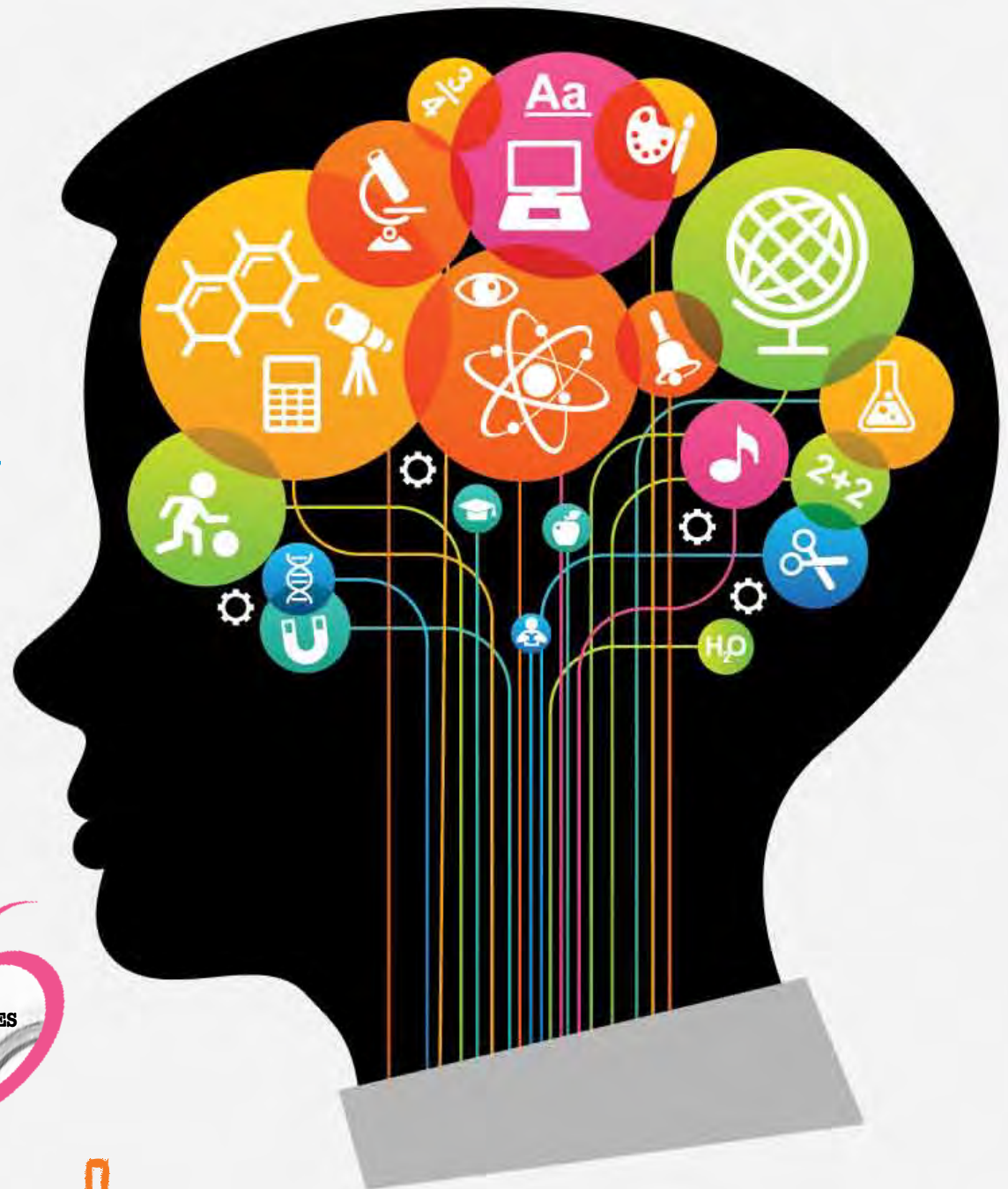
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BUILDING HEALTHY CHILDREN

How practitioners can guide parents through supporting their child's nutrition and overall health and wellbeing.

Children's health has never been such a topical discussion point as it is today; changing recommendations around a youngster's requirement for vitamin D, growing concern around rising levels of obesity and overweight in the young, and lobbying efforts to raise the nutritional standards of food served to youngsters in school have all brought children's health to the fore.

While this heightened awareness is good news, there is still a big job to do in terms of raising child nutrition, and here, nutritional experts discuss the role practitioners can





play in educating parents and their children over their nutritional and health needs.

CHILDREN'S ISSUES

There are a variety of issues common in children, and it appears that these are on the rise.

Nutritional Therapist, Claire Barnes, Technical Advisor at Protexin, which has the Bio-Kult and Lopicol brands in its portfolio, commented: "Common childhood conditions that parents often visit a nutritional therapist for include allergies, digestive issues, such as constipation, autism and fussy eating. It appears many of these childhood conditions are on the rise. While the reasoning behind this increase is not clear from evidence-based studies, it is likely a number of factors have led to this increase.

"The increase in caesarean birth, bottle feeding, antibiotic use, processed foods in the diet and reduction in outdoor activities are likely to all have an impact on the child's microbiome and corresponding immune system development. Links have also been made between autism and the foetus' environment during utero."¹

Katherine Pardo, Head of Nutrition at Nutri Advanced, added: "I suppose it depends when you're comparing it to, but I think the profile of health issues is definitely changing. The arrival of the digital age has brought with it a whole host of health problems relating to rising levels of inactivity (overweight/obesity, musculoskeletal pain etc) and increased anxiety and stress relating to excessive exposure to social media and school/exam pressures. There has also been a rise in allergies thought to be linked with changes in the diversity of our gut environment/microbiome, which affects our immune function. Low levels of vitamin D, linked with lack of sunlight exposure (inactivity and

over-use of sunscreen) can also cause poor immune function.

"I'd say the most common issues would be gastrointestinal disorders (diarrhoea, constipation, tummy pain etc), autistic spectrum disorders and ADHD, immune issues (either low immunity with constant colds, infections, runny noses etc, or overactive immune systems with things like allergies and eczema). Worryingly, in older children, NTs are seeing more and more teenagers with stress, anxiety and depression, and fatigue disorders."

BOYS VERSUS GIRLS

Is it the case that the advice is the same for a boy and a girl, or do the different sexes have differing needs?

Barnes explained: "As children, the same nutritional approach can apply for both genders. However, as they reach puberty, a therapist may look to change their approach slightly for girls or boys. Although both genders may experience issues with their body image, eating disorders predominantly affects more girls.⁵ Evidence suggests that girls are more likely than boys to report weight dissatisfaction, dieting for weight control, and use of purging, but are either as likely or perhaps less likely than boys to report binge eating and use of excessive exercise for weight control.⁶

"Hormone levels will vary between girls and boys as they reach puberty, however, following a protocol to balance hormone levels will be similar to both genders, allowing the body to naturally balance endocrine homeostasis."

And Pardo advised: "You might want to advise more iron-rich foods for a girl, as anaemia and low iron can be a problem when girls start menstruating, especially if they're not getting enough iron in their diet in the first place. Iron-rich foods include meat, seafood,

"Common childhood conditions that parents often visit a nutritional therapist for include allergies, digestive issues, such as constipation, autism and fussy eating. It appears many of these childhood conditions are on the rise. While the reasoning behind this increase is not clear from evidence-based studies, it is likely a number of factors have led to this increase."

beans, dark leafy veg and dried fruits."

TEENAGE TRANSITION

So, as children move into the teenage years, do their needs change? And what other issues should we be aware of?

"Through the teenage years, as hormones start to fluctuate and possible increase in toxin load exposure, it is important to maintain the integrity of the epithelial layer of the digestive tract and balance hormone levels. Teenagers are often no longer fed by their parents and make their own food choices," Barnes explained.

"For many, this can lead to an increased intake of processed, fast and convenience foods. Teenagers often become more body conscious, and could be strongly influenced by friends and the media as to how they should look. Although television and magazines have been strongly criticised for encouraging unhealthy body images, it appears now that social media is a bigger influence.³ The experience of this peer pressure may lead the teenager to start experiencing low self-esteem and unfortunately for





some, could spark off an eating disorder.

"I believe the practitioner's role with teenagers is to educate them in terms of the benefits of eating well, such as including healthy fats and proteins in the diet and how to make quick, healthy foods from scratch, such as smoothies and healthy snack bars.

"Around the early 20s, the bones stop growing in length. Encouraging a diet within the teenage years to support bone health could help to encourage healthy bones throughout life. Include food sources rich in vitamin D, calcium and vitamin K for bone health."

Also keep in mind a teenager's mood as this needs special attention.

"If the teenager is suffering with low mood, a plan should be put into place to improve hormone balancing and relaxation techniques. A study published last month found that the probiotic *Bifidobacterium longum* reduced symptoms of depression," Barnes added.⁴

NUTRITIONAL INTERVENTION

Focusing on a child's nutrition is important as it can help to reduce the risk of developing certain conditions.

So, what is the general dietary advice that could be followed?

"Many children with allergies and digestive issues could be suffering with intestinal permeability. Therefore, a protocol such as the '4 R' approach, remove, replace, re-inoculate and repair could help to improve their epithelial lining and improve digestion," Barnes said.

"Personally, I prefer avoiding taking food groups out of a child's diet unless really necessary. Many are fussy eaters and taking food groups out could quickly lead to nutritional deficiencies. Swapping foods would be



my preferable first step, such as swapping wheat for spelt, rye and buckwheat and swapping cow's milk for goat's milk, which is usually better tolerated. That said, eliminating sugar and refined processed foods could only benefit their health."

Pardo continued: "In general terms, it would be exactly the same as for an adult; plenty of variety wherever possible, coming from wholefoods and wholegrains, fresh fruit and veg, high quality protein sources (beans, pulses, fish and meat) and healthy fats (nuts, seeds, oily fish etc). Obviously limiting fast foods

and convenience foods wherever possible too."

Barnes also suggested adding in certain foods to support gut flora and, in turn, overall health.

"Adding in fermented foods and prebiotics to the diet to improve the microbiome could be extremely beneficial in young children who have an altered microbiome through the factors listed above. Studies have shown infants who were given probiotics were less likely to develop allergies later in childhood," she explained.²

There are also some beneficial supplements to add





"Omega 3 fatty acids from oily fish are vital for the healthy development of the brain and nervous system, and have been shown to be beneficial for brain and cognitive function, concentration and memory."

in to address any nutritional deficiencies.

"I would definitely build in a fish oil as most kids don't eat enough oily fish, and due to the level of contaminants in fish, it's not necessarily healthy to eat it more than twice a week anyway. Omega 3 fatty acids from oily fish are vital for the healthy development of the brain and nervous system, and have been shown to be beneficial for brain and cognitive function, concentration and memory," Pardo added.

"I always recommend supplementing with a fresh and stable fish oil that's been cleaned thoroughly of toxic contaminants."

Barnes also pointed towards the importance of supporting the gut.

"A live bacteria supplement which has been specifically designed for young children, such as Bio-Kult Infantis, can be given to infants from birth. As well as the seven strains of live bacteria it also contains omega 3, vitamin D and prebiotics. The seven strains in Bio-Kult Infantis have been used in clinical studies with children and have shown significant benefits in colic,⁷ diarrhoea,⁸ constipation⁹ and eczema," she commented.¹⁰

"Teenagers are often well below optimal levels of fibre. If they are struggling to add fibre into their diet, a high fibre supplement may be beneficial. A supplement which contains psyllium husk, five strains of live bacteria and inulin could help keep the

digestive tract healthy and mobile, which could help towards improving hormone balance, and ridding the body of excess toxins."

LIFESTYLE CHECK

Children lead busy lives these days but they do tend to lead more indoor lifestyles, and this can have an impact on their health.

"Spending less time on screens and more time outside, being physically active and getting plenty of natural daylight can make such a difference to kids' behaviour and emotional wellbeing, as well as their sleep patterns and general physical health," Pardo said.

"Limiting exposure to social media is important for psychological wellbeing, and I'd recommend turning off phones/screens at least an hour before bed to help

with sleep. I appreciate that this is a constant struggle for most parents though."

Barnes continued: "Many studies suggest that increasing microbe exposure (Old Friends Theory) in young children appears to benefit both the child's gut microbiome and their developing immune system.¹¹ Encouraging children to play outside, interacting with animals and pets, growing their own fruits and vegetables should not only help to improve their microbiome, but also teach them valuable lessons in nutrition and avoid the overuse of phones, tablets and social media.

"Teaching children from a young age about taking time each day for relaxation, such as mindfulness and yoga, could help them to understand their own mind, and possibly reduce the likelihood of developing low self-esteem." ●



Nutrition^{I-Mag} Product Showcases

Turmeric Brainwave

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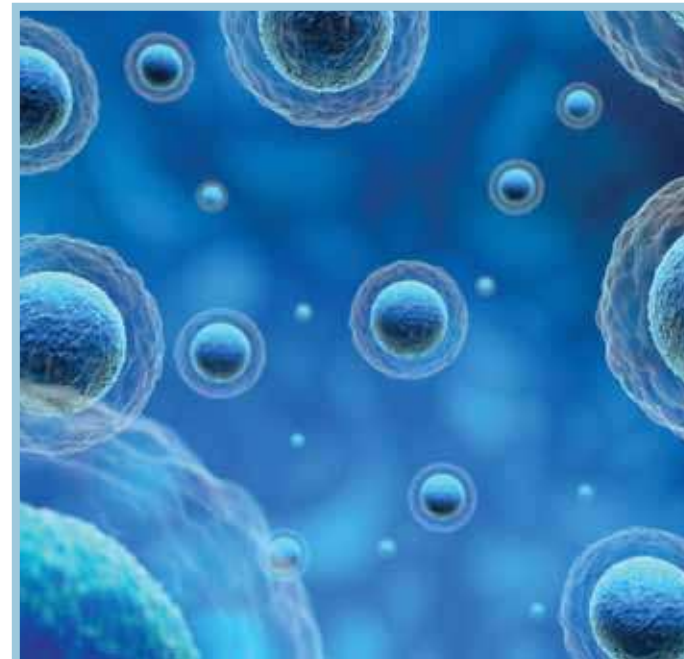
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Infantis contains Omega3 believed to contribute to early brain development and cognitive function, as well as perplex, DHA and EPA, all high in Omega3 fatty acids.

Infantis also contains Vitamin D₃ that helps to contribute to the normal function of the immune system and is needed for normal growth and development of children's bones. **For more information, visit www.bio-kult.com**

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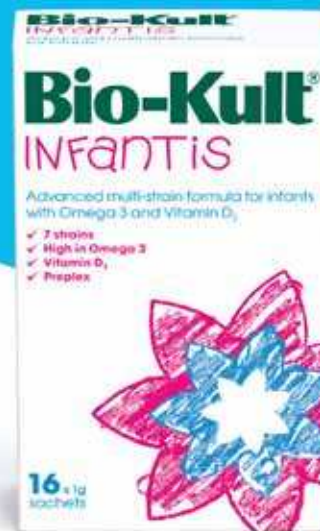
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THE HEALING PHILOSOPHY OF HIFAS DA TERRA

Hifas da Terra was founded with the goal to educate people about the healing power of our mushrooms. As the company continues to build a solid reputation, Editor Rachel Symonds heard more about its exciting plans for the future.

Mushrooms have been used for centuries in traditional medicine and are now considered among nutritional therapists as an incredibly exciting field of biotechnology.

Working hard to develop this area is Hifas da Terra, a company that was founded on the principles of bringing the healing power of medicinal mushrooms to the practitioner community.

The company has focused much effort and resources on the UK practitioner sector in recent years, with many customers enjoying huge benefit from the range of products in the portfolio.

Romina Melwani, herself a Mycopathologist and Nutritional Therapist at the company, commented: "Our mission at Hifas da Terra is to bring profound wellbeing in the lives of everyone. Through our unique mushroom-based formulas, we demonstrate a scientific, yet integrative, approach to product development."

THE STORY

It was more than 15 years ago that Catalina Fernández de Ana Portela, an expert Biologist and Mycologist, came up with the idea for a project where science, nature, sustainability and medicine would go hand in hand.

"This was the beginning of Hifas da Terra, an innovative company whose main focus is mycotherapy, the science of



harnessing the healing properties of mushrooms as a natural tool in integrative medicine," Catalina explained.

So, what is it about Hifas da Terra that is different, and why does the team believe its offering is unique in the marketplace.

For Catalina, it is that the company has a science-based approach.

"At Hifas da Terra, we are passionate about sharing our extensive scientific research and bringing the incredible properties of mushrooms to the world. In fact, the mushrooms in our supplement range, Micosalud, are organically produced

under strict climatic conditions in our own land in Galicia with the aim to provide the purest and most organic medicinal mushrooms."

As a company, it also has a focus on sustainability; Hifas da Terra pursues green business practices.

"We care for people but we also care for the planet. This is why we create more oxygen than we consume and plant over 80,000 trees a year," Romina explained.

THE PRODUCT PORTFOLIO

Hifas da Terra offers a range of products, all with the same approach in terms of product formulation but targeting different health areas.

"We at Hifas da Terra are looking to create a revolutionary change in the nutritional supplement industry, specifically in the





effectiveness of our nutraceuticals," Catalina pointed out.

"We believe that properties unique to fresh organic and unadulterated mushroom extracts hold the key to unlocking the maximum health potential for many of the chronic existing disease today. Our superfoods and maintenance range are also formulated to the highest standard of purity."

Looking at the product range, all are 100 per cent certified organic, with Romina adding: "We avoid all use of harmful toxins, pesticides and non-GMO. We can guarantee the provenance of our ingredients, as well as carry out best manufacturing practices that support people and the planet."

And the expertise within the business also ensure that the products are formulated with current research at the forefront.

Romina explained: "Our in-house labs focus on research. At Hifas da Terra, we believe in sharing our 50 years of scientific research, rational principles and clinical feedback with you. Our team consists of a group of dynamic Biologists, Researchers, Health Practitioners and medics, including recognised Oncologists."

Looking a little closer at the product portfolio, the high therapeutic extract range has 100 per cent pure mushroom strains.

Micosalud is the mycotherapy line, obtained by an

hydroalcoholic extraction system, which produces 1kg of extract starting from 65kg-100kg of fresh mushroom, concentrating the best active substances of medicinal mushrooms, essential for the treatment of chronic health issues.

Then there is the Bio range of superfood products, including the best seller, Bio-Intestine prebiotic supplements, as well as other healing mushrooms. A diverse portfolio, there is also a natural skin care range, including Mico-soap, Mico-Serum and Mico-Lift, an anti-ageing and antioxidant range made with cordycep and reishi.

And it doesn't end there; there's an organic gourmet range made with cordycep, reishi, sun mushroom honeys, chocolates and much more, and a children's range; Mico-Rei to support the immune system, and Mico-Leo for digestive/brain health.

PRACTITIONER SUPPORT

Hifas da Terra is a company committed to Nutritional Therapists, with Romina explaining that furthering their understanding of

mycotherapy has been a focus.

"Webinars, seminars, protocols and an accessible medical team provide educational and product support to practitioners, giving them the tools to use mushrooms effectively in their clinical practice," she explained. "We are currently launching our educational portal exclusively for health professionals to enable them to access our latest research, clinical protocols and case studies."

So, what plans are there for the future? And why does Romina believe the company's ethos aligns so closely with practitioners?

"Our mission and ethos is to bring the healing power of mushrooms into everything we do. At the heart of Hifas da Terra is a philosophy that cares for the people and the planet. We also focus on bringing evidence-based science to our research so that our approach can be truly integrative," she explained.

"This is one of the reasons Founder, Catalina Fernandez de Ana, is currently in her final stages of PhD in the Clinical Research In Medicine at USC in Oncology specialising in the field of integrative medicine."



Founder Catalina with Esteban Sinde, Director-General of Training, Cooperation and Strategic Planning and Environment at Hifas da Terra

EXPERT ADVICE

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



THE EXPERT



KATHERINE PARDO BSc (Hons), Dip ION is Head of Nutrition at nutritional supplement company Nutri Advanced, one of the leading educators in the field of Functional Medicine. She originally trained as a Nutritional Therapist at the Institute for Optimum Nutrition in London and is committed to helping people make realistic and sustainable food and lifestyle choices for improved health and wellbeing.

Q

I am seeing increasing numbers of clients all exhibiting similar symptoms of fatigue, lacking in energy to get through the day. What are the obvious causes to investigate and what protocol can I follow?

KATHERINE PARDO EXPLAINED:

The causes of fatigue can be numerous, frequently multi-factorial and may be helped with diet and lifestyle change to varying degrees of success.

One of the most common causes of mild fatigue is poor blood sugar balance. This can be caused by poor diet (too many refined carbohydrates/sugars, excess caffeine, low protein etc), as well as stress and smoking, all of which can cause dips in energy throughout the day due to fluctuating blood sugar levels. Mild blood sugar imbalance is relatively easy to reverse with a few diet and lifestyle tweaks, but if left untreated, it can lead to more serious insulin control issues, such as diabetes, as well as adrenal fatigue. The adrenal glands get involved when the body is placed under stress. This may be due to a number of diet and lifestyle factors, and can lead to an imbalance in the hormones cortisol and DHEA. Long-term stress, or illness (often viral), or excessive carbohydrate consumption

can ultimately lead to adrenal burn out, causing cortisol and DHEA to plummet, with concomitant symptoms of excessive fatigue and, frequently, depression. At this stage, a more in-depth diet and supplement programme would be required to help.

Another common cause of fatigue is anaemia – either iron deficiency anaemia or B12/folate deficiency. This can be easily tested for with a simple blood test, and addressed with supplements. Iron should be supplemented in an easily absorbed and well-tolerated form, such as iron bisglycinate, and the B12/folate should be administered in the body-ready methylated forms, methylcobalamin and 5MTHF, for optimal utilisation in the body.

Thyroid issues are another remarkably common cause of fatigue. The thyroid gland is responsible for regulating the body's metabolism and can often be hypoactive (underfunctioning) – causing fatigue, excess weight and numerous other symptoms. A medical doctor may

diagnose hypothyroidism in severe cases, but borderline cases will often be ignored, even when excess fatigue and weight gain are present. A simple temperature test can be enough to tell you that your thyroid is not functioning optimally, and nutritional supplements can often help improve symptoms fairly quickly. In more severe cases, a course of thyroxine prescribed by a doctor may be necessary.

Another route to investigate if fatigue is fairly severe is liver function and toxin exposure. For a number of reasons, your liver may be struggling to process toxins adequately, and this can contribute to feelings of fatigue and brain fog. If exposure to exogenous (outside of the body) toxins is an issue, then these should be removed from the environment wherever possible. In order to help support the liver, a 'detox' may be advised. This involves giving your liver a rest from the things which it finds more difficult to process, such as alcohol, caffeine, non-essential medications, preservatives and pesticides commonly found in food, and providing the liver with the nutrients it needs to function optimally, through organic whole food,

water and supplemental nutrients to support phase I and phase II clearance in the liver.

Gastrointestinal issues may also be at the root of fatigue, and it may be necessary to test to see whether common infections, such as candida, bacteria or parasites, are present. A full gastrointestinal cleansing programme and probiotics would be recommended in such cases.

CLICK FOR MORE QUESTIONS



Q

Can you explain why a rainbow diet is an effective regime to follow?

SALLY DUFFIN ADVISED: Many people struggle to make lasting effective dietary changes because they feel overwhelmed by options and suggestions, and don't know where to start. Making one positive dietary change each week means four healthy changes by the end of the month, and the slow steady pace of change allows the new habits to embed and grow.

Pick any one of these top 10 practical tips to start increasing the colour, variety and nutrient load of your diet:

- Mix spirulina, chlorella, barley grass or wheatgrass powder into pesto to boost antioxidant and protein levels.
- To support blood sugar stability and reduce reliance on refined carbohydrates, swap to higher protein alternatives. Mung bean pasta, lentil pasta, quinoa, or wild rice are good alternatives.
- When managing gut dysbiosis, think foods before supplements; natural anti-microbials such as garlic, ginger, oregano and marjoram can be added easily to salads, soups, casseroles – even herbal infusions.
- The anti-inflammatory actions of turmeric and cinnamon are well documented; these spices blend well with warmed almond milk to make a simple chai-style beverage.
- Seaweed flakes can be sprinkled into salads, soups or casseroles, and Nori sheets make a good alternative to wheat wraps, instantly increasing the iodine, zinc and magnesium content of the meal.
- Mixing a tablespoon of olive oil into 25g of butter creates a spreadable butter, rich in oleic acid – with none of the negative effects associated with margarine or poorly processed vegetable oils.



- Encourage children to explore different coloured vegetables by using a picture colour chart and negotiating which coloured veggies to try next.
- Nourish your microbiome with pre- and probiotic food. Add a tablespoon of sauerkraut to grilled salmon and roasted vegetables, use unfiltered apple cider vinegar in salad dressings with lemon juice and fresh herbs, or mix kefir into a morning smoothie.
- Green vegetables can be problematic for many people, especially supertasters. A basic smoothie made from baby spinach, banana and almond milk is a gentle option to begin with, and is packed with folate, vitamin K, vitamin C, and the antioxidant compound, lutein. Adding fennel or caraway seeds when steaming brassica greens helps to soften the taste and aid digestion, reducing bloating and wind.
- To eat different foods you have to buy different foods. A vegetable or fruit box delivery scheme is a

hassle-free way to have new ingredients delivered direct to your door. Many schemes offer inspiring recipe ideas too.

[CLICK FOR MORE QUESTIONS](#)



THE EXPERT



SALLY DUFFIN MBANT, CNHC, PGCHE is a Registered Nutritional Therapist and Module Leader for Clinical Practice and Nutrition Clinic Supervisor on the MSc Nutrition Science & Practice programme at Northern College of Acupuncture. Sally founded her own practice in York in 2009, where she enjoys focusing on digestive disorders and gut-brain interactions, alongside writing for various publications.

Q

Can you offer advice on the best nutritional programme for balancing inflammatory responses?

SUE MCGARRIGLE SUGGESTED:

Inflammatory abnormalities underlie a huge number of human diseases. The benefits of utilising nourishing foods which have a safe and traditional history of use with minor to no irritation to the human host are long-term options against chronic inflammatory symptoms.

Phytonutrients commonly found in whole unprocessed foods have a diverse nutritional role and influence in helping maintain human health. They may also play an important part in helping regulate and maintain normal inflammatory responses, modulating immune function and strengthening the integrity of connective tissue throughout the body.

Because of its traditional use with a variety of conditions, rosehip has been investigated as a long-term option for chronic inflammatory symptoms. Existing research suggests that it may be of high nutritional and therapeutic value as a viable food or supplement for osteoarthritis and other inflammatory diseases, such as inflammatory bowel disease and rheumatoid arthritis. Rosehip has been found to have anti-inflammatory and antinociceptive

activities with synergistic interactions between its compounds. Rosehips are a rich source of vitamin C and polyphenolic compounds, such as proanthocyanidins and flavonoids, including quercetin and catechin, which have been observed to correlate with antioxidant activity and maintenance of collagen. Much of the anti-inflammatory action of rosehip has been attributed to high quantities of its galactolipids. Standardised rosehip may offer an effective first line therapy and is a viable replacement or supplement for conventional drug therapies, such as NSAIDs. The growing evidence base suggests that rosehip has a high safety profile.

Another specific botanical for helping regulate normal inflammatory responses is ginger root. The active components of ginger root are volatile oils and pungent phenol compounds effective in chronic myofascial pain disorders and fibromyalgia syndrome. Ginger is a warming remedy, ideal for boosting the circulation. Ginger root inhibits several genes that contribute to inflammation and is an excellent antioxidant, helping prevent tissue damage and inflammation.

Pomegranate peels or hulls make up 60 per cent of the fruit and are rich in many compounds, including punicalagins, also found in the seeds whose parent molecules can be hydrolysed to produce a highly bioavailable source of ellagic acid with high antioxidant activity, which gives important anti-inflammatory and anti-ageing properties.

It may be more difficult to reach the necessary omega 3 fatty acid levels to generate adequate levels of anti-inflammatory molecules within the modern day diet. Fish oils' multiple benefits have long been attributed to its effects on reduced inflammatory signalling and the production of pro-resolution molecules. Deficiencies in pro-resolution molecules have been identified in most of the chronic, inflammation-related diseases of ageing.

Evidence of anti-inflammatory effects of fish oil supplementation has been found in metabolic syndrome, cardiovascular disease, lung diseases and neurodegenerative conditions.

The synergistic combination of various botanicals can provide many benefits in the balance and regulation of inflammatory responses.



THE EXPERT



SUE MCGARRIGLE ND DipION CNHC mBANT NNA is a Clinical Nutritionist and Naturopath and has practiced as a Clinical Nutritionist since 2001. As a lecturer to college and university students to Masters level,

Sue has trained hundreds of healthcare and medical practitioners in many aspects of nutritional therapy. She writes as a regular contributor to specialist nutrition articles for magazines and newspapers. Her lectures offer a comprehensive approach to nutrition practice and practical naturopathic techniques.

FOCUS ON GLUCOMANNAN

Nutritional Therapist, **Claire Barnes**, examines the wider health benefits of supplementing with glucomannan.



Glucomannan, a water-soluble dietary fibre from the *konjac mannan* plant, is most widely known for its proven ability to contribute to weight loss in the context of an energy-restricted diet.

As nutritional therapists, we clearly understand that there is no wonder ingredient that will magically shed excess weight. There are many reasons why an individual may have excess weight issues, making it a complex task to try and decipher effective diet and lifestyle changes that will work for each individual to maintain a healthy weight for the long-term. So, why has this humble Asian fibre been promoted as a weight-loss aid?

REDUCES HUNGER AND INCREASES SATIETY

The first pitfall of many calorie controlled diets is hunger. Our hunger hormone, ghrelin, is actually low in obesity, likely due to the high caloric intake, but increases rapidly when calories are reduced.

A study using glucomannan in individuals with type 2 diabetes found that by supplementing with glucomannan, ghrelin levels could be reduced,¹ therefore reducing hunger pangs.

A review of the literature studying glucomannan for weight loss found that 2g-4g per day was well tolerated and resulted

in significant weight loss. The review suggests there is some evidence that beneficial effects of glucomannan are from promoting satiety and fecal energy loss.² It appears to be most effective when consumed before each meal.

Glucomannan taken with water will swell in the stomach, forming a large volume of viscous gel, which stretches the mechanoreceptors in the stomach, signaling satiety to the brain. This should then limit the space available for the meal, meaning smaller portions can be eaten. It is important, therefore, that if the individual is consuming smaller meals, these need to be highly nutritious and balanced, in order for them to not suffer with any nutritional deficiencies.

IMPROVE STOOL MOVEMENTS

Often, a change in diet can result in less frequent stool movements as the body's metabolism adjusts.

Glucomannan was studied in constipation sufferers to determine its effects on bowel movements. Although a small study, only seven subjects, it revealed a significant increase in weekly bowel movements, as well as easier defecation.³ This was likely to be



achieved through increasing the bulkiness of the stool, encouraging the growth of lactic acid bacteria and increasing fermentation in the bowel.⁴

PREBIOTIC EFFECTS

Glucomannan is a soluble and fermentable fibre, meaning it has the ability to act as a prebiotic in the intestines. Prebiotics will pass through the upper gastrointestinal tract undigested and unabsorbed to the bowel, where bacteria can then ferment them and produce short-chain fatty acids that can then stimulate appetite hormones.⁵

A recent study has shown significant reduction in visceral fat with a prebiotic, most likely through increased fat oxidation.⁵ Taking glucomannan alongside a probiotic could, therefore, have an even greater effect.

REDUCES BLOOD SUGAR LEVELS

A struggle for many who are overweight or obese is balancing





blood sugar levels. Glucomannan has been shown to reduce both blood glucose and improve insulin sensitivity.⁶ This suggests that glucomannan could be a useful supplement for individuals with conditions such as diabetes, PCOS and obesity.

Glucomannan may also be a useful supplement for individuals without a diagnosed condition, but are struggling with blood sugar imbalances as a way of helping to prevent hyperglycemia occurring.⁷

REDUCING CHOLESTEROL LEVELS

Another concern of individuals who are overweight or obese is often their cholesterol levels. Many studies have shown benefit of significantly reducing LDL cholesterol, whilst having no effect on HDL cholesterol through supplementation of glucomannan.^{8,9}

Glucomannan is likely to have this effect due to the increased excretion of cholesterol, whilst also decreasing cholesterol absorption in the intestines.

BIND TO AND REMOVE ENVIRONMENTAL TOXINS

Adipose tissue is known to store environmental toxins, and when someone embarks on a weight loss program, there is the potential for these toxins to be released into the body. Glucomannan has shown to bind to environmental toxins and, through improved stool movements, could assist in removing them from the body.¹⁰

SUMMARY

The clinical studies that appear to show the greatest benefit of using glucomannan for weight loss are the ones that also alter diet and lifestyle alongside. Glucomannan is unlikely to be a weight loss supplement in its own right. However, it could be a great choice for individuals who are embarking

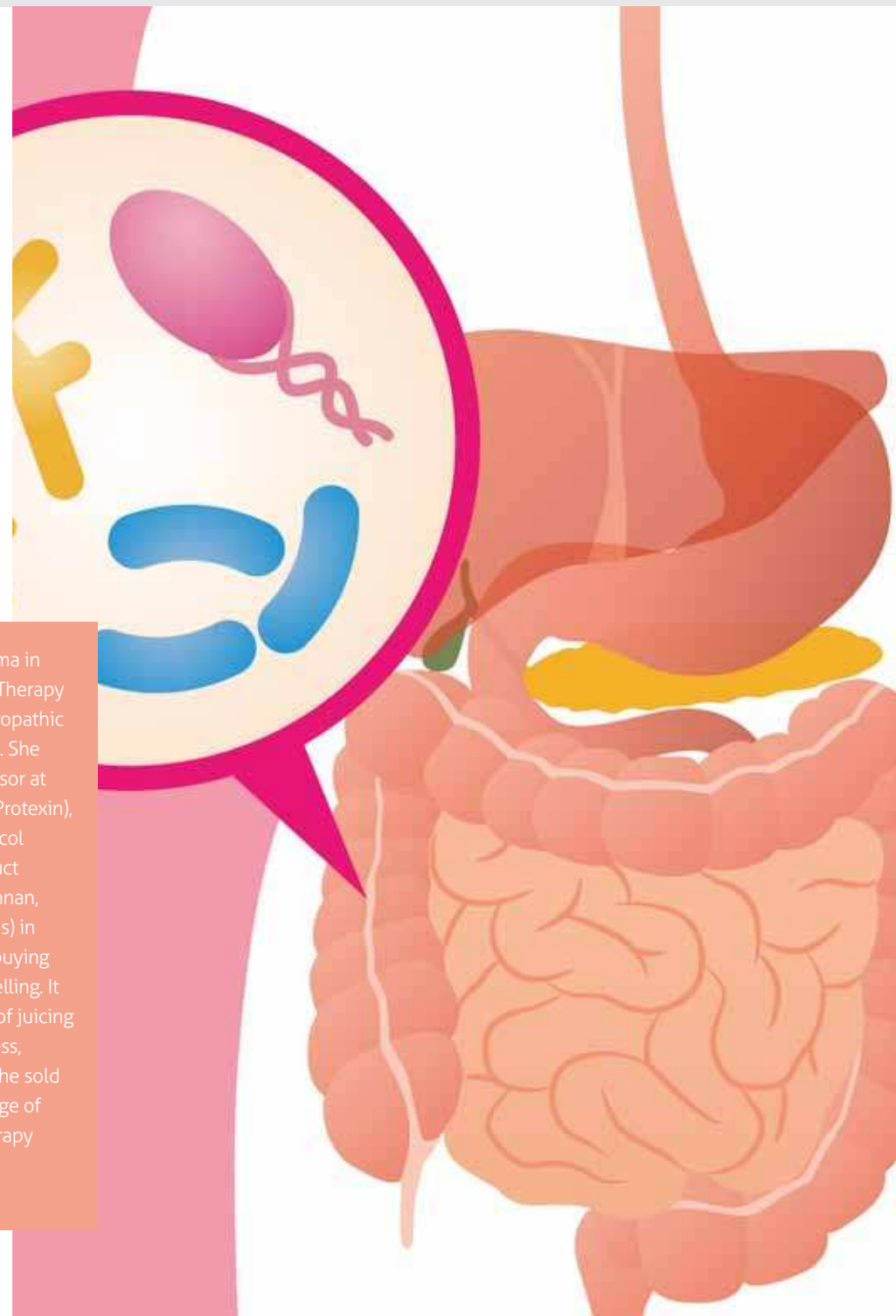
on a weight loss program to include glucomannan alongside a nutritious eating plan that also looks at other factors to try and determine why the individual has become overweight in the first place.

As nutritional therapists, we are always looking at the individual as a whole, and a weight loss program is certainly no exception. It is unlikely that changing one factor will have a life-long impact on weight reduction; rather, we need to look at many areas, such as their current diet, to ensure it is highly nutritious and balanced, that they are undertaking light to moderate exercise, their gut flora is balanced and their wellbeing and lifestyle choices have also been addressed. ●



Claire Barnes has a diploma in Naturopathic Nutritional Therapy from the College of Naturopathic Medicine (CNM) in Bristol. She works as a Technical Advisor at Probiotics International (Protexin), which manufactures Lepicol Lighter, a high fibre product

containing seven strains of live bacteria, glucomannan, chromium, and psyllium husk. Claire has a BA (hons) in Retail Management. She worked within the retail buying sector for three years before spending a year travelling. It was whilst travelling that she developed her love of juicing and nutrition and started her own juice bar business, which she owned and ran for seven years. When she sold the business, she wanted to advance her knowledge of nutrition and so began her lifelong nutritional therapy training. She now concentrates her research in the microbiome and digestive health.



I-Mag giveaways

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



PACIFICA COCONUT PROBIOTIC WATER REHAB CREAM



Even skin suffers hangovers due to stress, late nights, pollution and lack of sleep, and dehydration and dullness appear to add years to your skin. Take control with the Pacifica Coconut Probiotic Water Rehab Cream, which helps improve texture, addresses fine lines and helps bring back the youthful appearance of brighter skin. Clinically advanced vegan probiotic technology is fused with plant extracts and coconut water to promote a luminous, dewy and radiant glow. For all skin types, especially stressed, it is 100 per cent vegan and cruelty free.
🍏 **I-Win:** We have five to give away.



RENEW LIFE ULTIMATE FLORA CRITICAL CARE

Ultimate Flora Critical Care is a powerful 50 billion probiotic with 10 probiotic strains, including 30 billion *Bifidobacteria*, 20 billion *Lactobacilli*. It uniquely contains 25 billion *Bifidobacterium bifidum*, a key probiotic to therapeutically support large intestine health and destroy harmful bacteria – making it the ultimate probiotic formula to treat chronic intestinal disturbances, constipation, IBS, diarrhoea and for after antibiotics. The unique enteric coating delivery system ensures 100 per cent probiotic delivery.

🍏 **I-Win:** We have five Ultimate Flora Critical Care 50 billion, worth £41.99 each, to give away.

SPRINGFIELD COLLAENSE UNDENATURED TYPE II COLLAGEN (UC-II)



Collagen is the main structural protein in joint cartilage and exists for 85-90 per cent out of type-II collagen. The patented manufacturing process to make Collasense ensures that the specific structure of collagen type II remains intact. This makes it more bioavailable. Vitamin C is added to contribute to the normal collagen formation for the normal function of cartilage. Collasense provides 40mg UC-II with 10mg total collagen.
🍏 **I-Win:** We have 10 packs of 30 capsules to give away (worth £19.95).



ALTRIENT C

Altrient C is the world's leading liposomal vitamin supplement. The nutrient is encapsulated in a microscopic phospholipid bubble, which carries it directly to the cells, protecting it from the destructive elements of the digestive system. Altrient C is the most effective option for ensuring your body has adequate vitamin

C levels and has been compared to having an intravenous infusion of vitamin C.

🍏 **I-Win:** We are offering readers the chance of winning one of 50 14-sachet trial packs.



GREEN PEOPLE DAMASK ROSE COLLECTION

This skin trio is beautifully scented with precious rose otto, a century old oil with a soft, calming aroma that evokes a feeling of peace and happiness. Damask Rose Cleanser is a light and gently purifying cleansing lotion, which lifts away daily impurities, while Damask Rose Moisturise nourishes to leave the complexion hydrated and revived. Damask Rose Hand Cream is a reviving hand cream, naturally nurturing to hydrate, nourish and soothe.

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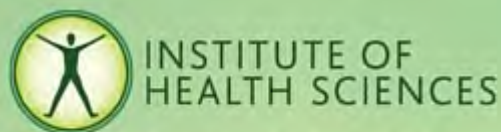


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BIONUTRI – the practitioner brand



Created a decade ago with practitioners at heart, **Bionutri** is a research-led brand rooted in nutritional science. Here, its founder, Robert Joy, explains his inspiration.

Robert Joy



Bionutri was a brand founded a decade ago with a simple, yet pioneering principle; it focused on an integrative and applied approach to nutritional supplementation that did not really exist up until then in supplements.

Those behind the brand also brought great experience too; founder, Robert Joy, had worked with John Stirling, the founder of

BioCare, since the mid 1980s and during that time, had developed relationships with several leading practitioners, including Marion Kirkham. It was these influential people who encouraged Robert to develop a new brand, continuing to develop the direction that had been a focus for many years.

"I spent a year thinking about how to improve and clarify a supplemental approach to what had long been one of the toughest and commonest problems that nutrition therapists faced – maintaining the ecological balance and epithelial integrity of their difficult clients' gut microflora," Robert explained. "Turning that thinking into Bionutri's first product, the award-winning

Ecobalance, could not have been achieved without the support and technical brilliance of Dr Nigel Plummer and his research team."

The Bionutri range now stands at 22, and, as the brand has developed so too has the team, notably with John joining the company.

"Ecobalance was our first product and remains a very important introduction for practitioners to our thought processes. Our early products were probiotic, immune support and hormonal health. When John Stirling joined the company in 2010 as Technical Director, his unique background and experience in Biochemistry, Naturopathic Nutrition and Pathology transformed our product development," Robert explained.

"John's focus is on formulation of products and product quality and we now have products that support all the main systems of the body – neurological, cardiovascular, endocrine, musculo-skeletal, immune and primarily gastro-intestinal support."

The company is sometimes thought of as a family business, despite being owned by Robert and John, and this is because Robert's son, Edward, is a Herbalist and Naturopath and has worked for the business since the start, and more recently, Ed's older brother, Richard, has joined.

"As we have three Naturopaths and a Nutritional Biochemist in the company, bringing in Richard's commercial operations specialism to Bionutri is very welcome and very necessary against

the background of our growth. I tend to think of Bionutri as a family in a wider sense though – we get to know many of the practitioners who recommend our products very well indeed and our discussion with them and their feedback is an essential of our product development as well as our educational development," Robert explained.

SIMPLIFYING SUPPLEMENTATION

The ethos of Bionutri is a very straightforward one, and focuses on wanting to make it easier for practitioners to recommend nutritional supplements to their patients.

Robert explained: "There were two ways in which we felt we could make a real difference to the work of practitioners and, therefore, improve the support that they provide to their clients. First, over the previous 10-15 years, there had been an explosion in the number of supplements available to the practitioner. Several companies had ranges with over 200 different products in each. Practitioners were (and are) faced with a forest of thousands of supplements to





comprehend for their clients.

"Secondly, as the quantity of products available grew, I felt that the thrust of product development from most supplement companies was becoming increasingly pharmaceutical in outlook. Nutrients don't exist in nature in isolation and supplementation with isolates is not a nutritional approach and inevitably risks creating different imbalances. Practitioners were asking me to simplify their complex task of recommending supplements. So what we started to put together, following on from the original work with Ecobalance, was a system-based approach using combinations of nutrients, botanicals and probiotics – a much more integrative and applied approach to nutritional supplementation that did not really exist up until then in supplements, which we now refer to simply as Biological Advantage because that is what the products deliver."

In this respect, the overall call of Bionutri is to help practitioners to simplify the prescribing task, making the taking of supplements simpler for clients.

Robert explained: "Over the years, I've seen practitioners giving clients a list of six to 12 different supplements to take, each with different instructions and perhaps having to be taken at different times of day or even on different days – difficult for the practitioner to put together and a problem for the client to comply with.

"I'm not saying it's always possible to satisfy the supplement needs of a client with a single tablet or capsule, so we have some products that will combine two or even four different capsules together. To the client, it's a single product with a single discreet set of instructions. There is also a synergy between products in the range so that practitioners can tailor a programme for an



(From left): Richard, Edward and Robert Joy



individual client simply and efficiently in a way that provides clarity to the client."

THE QUALITY PROCESS

Many brands will talk about the quality of their products but not all can back this up. This is where Bionutri differs as it has a number of processes and practices in place to ensure both quality and efficacy.

"Importantly, our products are UK manufactured to full HFMA Good Manufacturing Practice (GMP) under a Quality Assurance System accredited to ISO 9001 so every stage of the manufacturing process is documented, scrutinised and audited," Robert explained.

"Purity criteria of raw materials are established so that when

these are delivered in bulk, they are checked against the standard before they enter the production process. The nutritional value of many of the ingredients we use can be easily lost in the production process and we use the most up-to-date technology to ensure that we retain it. Bionutri's Aquasorb process uses food ingredients rather than chemicals to emulsify fat-soluble nutrients into a freeze-dried powder that can then be encapsulated. We also use freeze-drying of botanical ingredients to remove moisture from the plant without rupturing the cell wall and we use very low temperature grinding to retain volatile actives, such as the essential oil component within mastic gum."

It's a big investment, but one Robert absolutely believes is worth making.

"These are costly and time-consuming processes but an





essential part of maintaining the nutrient content of a fresh fruit or herb within a manufactured supplement. Without such techniques, a formula that can look impressive on paper may have little or no efficacy in practice," he commented.

Practitioners have always been important to the brand, and will remain so, as Robert explained: "The practitioner market isn't just important to us, it's the reason we exist. Our products are formulated specifically for practitioners so the product focus can be quite distinct from one looking to span the retail market as well. A simple example is our Vitamin C Complex, where the broad spectrum of bioflavonoids we insist on would not be appreciated by a retail customer, but its value is understood by the practitioner to be intrinsic to its overall quality.

"Food supplements are expensive commodities. People who take the trouble to consult a Nutritional Therapist or Naturopath before deciding what supplements to take expect the best value from them, both in terms of overall cost and benefit and we aim always to deliver that."

In terms of the support offered to practitioners, it is vast through the Technical Support team, Sue McGarrigle and Edward Joy, who provide a reactive service providing answers to the constant stream of questions from both practitioners and their clients about products. A proactive service, delivering seminars, lectures and interactive training sessions online both to practitioner and to student groups, is also offered.

"We also offer an own label service for practitioners, which is popular with some types of therapist to be able to personalise a particular supplement protocol that their clients follow," Robert added.

LEGISLATIVE FOCUS

Bionutri as a company is incredibly aware of the issues surrounding supplement legislation, and has developed its portfolio in response to this.

By way of explanation, Robert said: "The year we began Bionutri, 2007, was also a critical time in that new European

legislation was reshaping what nutrients and what botanicals could be used in food supplements so starting then with a blank piece of paper made a lot of sense – new products in tune with the new regulatory environment, rather than modifying existing products to conform to it.

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

Robert himself believes that much work needs to be done in defending the industry and the continued use of nutritional supplements, and he identifies this as an area of focus for him.

"On a personal level, I plan to devote a lot of energy over the next few years to lobbying for the continued freedom of sale of food supplements. It's a passion I've always fought very strongly for," he said, adding that he was Chairman of the British Health Food Trade Association in 1989, when the European Commission first proposed a Food Supplements Directive.

"The practitioner market isn't just important to us, it's the reason we exist. Our products are formulated specifically for practitioners so the product focus can be quite distinct from one looking to span the retail market as well."

Robert continued: "We formulated a very simple policy proposal at that time that the freedom of sale of food supplements should be limited by safety alone. Both the UK Government and the Commission accepted the proposal and to this day it still remains UK Government policy. No other EU Member State has adopted it though. We successfully lobbied the Government to resist the introduction of the Food Supplements Directive, delayed its introduction for 14 years and even now, nearly 30 years later, the harmonisation of Maximum Permitted Levels across Europe

for vitamins and minerals has not been agreed because of British intransigence!"

Robert added that there are new opportunities to be pursued around supplements legislation in light of Brexit.

He explained: "Brexit now gives us the opportunity to

permanently remove that threat in the UK of the removal of safe supplements from sale. Our views are listened to in Westminster now much more seriously than used to be the case and this is because of a constant dialogue with Government through our trade associations and because of the huge number of people who support the message that we transmit. When in 1997, the Government introduced a proposal (MLX249) to ban journalists from discussing the health benefits of supplements and nutrients, I organised a petition and march with the old *Journal of Alternative & Medicine*. The petition was signed by over a million people, an unheard of figure before the days of the internet and this generated the birth of Consumers for Health Choice (CHC), which now has a quarter of a million supporters."

Looking ahead, there is much in the pipeline for this innovative company, with Robert commenting: "Product development is and will continue to be our major focus. We'd also like to expand the number of European countries that we work in. That may not sound relevant to practitioners in the UK but in each country in which we work, we learn from their different skills and cultures and we're able to share those insights through our education programme with practitioners here." ●



(From Left): Robert, John Stirling and Dr Nigel Plummer

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Weight loss

Lamberts

June 28 - Birmingham

July 11 - Exeter

July 13 - Tunbridge Wells

CPD hours: BANT six hours

Speakers: Lorraine Nicolle, Shoela Detsios, Justine Bold, Katie Sheen

Cost: £44.95 (delegates receive a £30 product voucher after attendance at the seminar and a BANT certificate)

Website: www.lambertshealthcare.co.uk

Nutrigenomics in practice – Detoxification

Lifecode GX

June 30 - Cambridge

CPD hours: BANT 5.5 hours

Speakers: Karen Harrison BSc (Hons) Dip CNM mBANT rCNHC

Cost: £99 for BANT members using discount code BANT20

Website: www.lifecodegx.com/events/

Supporting female health and hormones

BANT London and South East Regional
June 30 - London

CPD hours: BANT five hours

Speakers: Dr Carrie Jones, Emma Beswick, Dawn Waldron, Dr Lars von-Olleschik

Website: www.eventbrite.co.uk/e/supporting-female-health-and-hormone-balance-tickets-34705610415

Nutrigenomics in practice – nervous system

Lifecode GX

July 1 - London

CPD hours: BANT 5.5 hours

Speakers: Karen Harrison BSc (Hons) Dip CNM mBANT rCNHC

Cost: £99 for BANT members using discount code BANT20

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MSC MCNHC MBANT MIFM
Tuesday, June 27, 6.30pm-7.30pm

The blood brain barrier (BBB) is a semi-permeable membrane that separates the central nervous system (CNS) from peripheral blood circulation. Serving as an "essential protective bubble" around the brain, it plays numerous important roles in protecting the brain and ensuring optimum functioning. Just like the gut lining, our blood brain barrier can become compromised. Dysregulation of the blood brain barrier is now thought to be linked to numerous health conditions, and a range of symptoms. Fortunately, with appropriate intervention it is possible to restore function and healing.

In this webinar you will learn: Structure and function of the blood brain barrier; Dysregulation of the BBB – what can go wrong?; Link between BBB dysregulation and long-term health conditions; Links to environmental toxins and the role of gut health; Testing to assess the health of the BBB – who is at risk?; Healing the blood brain barrier – key strategies, nutrients, foods and supplements to consider.

Three Probiotic Strains You Should Know About



Presented by Functional Nutritional Therapist, Chef and Author, Christine Bailey MSC MCNHC MBANT MIFM
Tuesday, July 4, 6.30pm-7.30pm

The microbiome is fast becoming one of the most exciting tools to be harnessed, not only for understanding human health, but also in reshaping how we approach individual imbalances. With more investment than ever into understanding the significance of bacterial diversity, strain specificity is now an area of much focus.

During this webinar, Christine Bailey will discuss the importance of strain specificity in terms of probiotic supplementation. Different probiotic strains have different beneficial effects in the body. Here, she will review three of the most researched strains for digestive health:

- *Lactobacillus acidophilus* NCFM.
- *Bifidobacterium lactis* BB12.
- *Saccharomyces boulardii*.



Organised by the
IH CAN Conference Team



GRAINS OF GOODNESS

Take inspiration from these tasty recipes and get cooking with grains.



Carrot and coconut loaf cake



Mixed grain sushi



Gluten free muesli with tropical fruits



Carrot and coconut loaf cake (Makes 10 slices)

Rather than making a cake using wholewheat flour (which can be quite heavy), try using bulgur – it adds texture and moisture and stops the cake from becoming dry. The lovely coconut cream icing means this cake is completely dairy free.

INGREDIENTS:

- 100g (3½ oz) bulgur wheat, rinsed
- 200ml (7fl oz) apple juice
- 75g (3oz) coconut oil
- 3tbsp creamed coconut
- 75g (3oz) sultanas
- 120ml (4fl oz) clear honey
- 2 medium carrots, peeled and coarsely grated
- 50g (2oz) ground almonds
- Good pinch of salt

- 2 large eggs, beaten

- 75g (3oz) wholewheat or spelt flour
- 1tsp baking powder

FOR THE ICING:

- ½ x 400g (14oz) tin coconut cream, chilled in the fridge for several hours or overnight
- 1tbsp clear honey
- Flower petals or herb flowers, to serve, optional

METHOD:

- 1 Put the bulgur in a saucepan with the apple juice and bring to a gentle simmer. Cover, reduce the heat to its lowest setting and cook gently for 10 minutes, until the bulgur is tender and the juice has been absorbed. If there's still unabsorbed juice in the pan, cook, uncovered, for a couple more minutes. Leave to cool.
- 2 Preheat the oven to 180°C (350°F). Grease and line a 22 x 12cm (8½ x 5in) loaf tin. Put the coconut oil in a large bowl. Add the creamed coconut, cutting into pieces if solid. Rest the bowl over a saucepan of simmering water and leave until melted, stirring frequently.
- 3 Remove from the heat and stir in the bulgur, golden raisins, honey, carrots, ground almonds and salt. Add the beaten eggs and stir well to combine.
- 4 Sift the flour and baking powder into the bowl, tipping in the flour left in the sieve. Stir in with a metal spoon and transfer to the tin. Spread level and bake for 1½ hours until deep golden and firm to the touch. Cover with foil if the surface over-browns during cooking. Leave in the pan for 10 minutes, then transfer to a wire rack to cool.
- 5 For the icing, open the coconut cream and scoop the thick layer of coconut into a bowl. Add 120ml (4fl oz) of the liquid (the rest can be kept in the fridge, or frozen, for another recipe). Beat with an electric whisk until smooth and creamy. Beat in the honey and spread over the loaf. Scatter with flower petals or herb flowers, to serve.

Mixed grain sushi



Gluten free muesli with tropical fruits





Cook's tip: For an easy salad alternative, make the oatly mixture and stir in the cucumber and asparagus. Even the nori can be torn into pieces and stirred in. Try alternatives to the asparagus and cucumber, such as roasted red pepper, avocado, artichoke, prawns and smoked salmon.

Mixed grain sushi (Makes 24 pieces)

Cooked oats cling together in the same way glutinous rice does, making it perfect for a sushi filling. The only other inauthentic ingredient is quinoa. Everything else is just what you'd expect to find in rolled sushi nori, and the flavour is just as good. These take a little while to make, but can be chilled for six to eight hours before serving.

INGREDIENTS:

- 175g (6oz) whole grain oats, rinsed
- 50g (2oz) quinoa, rinsed
- 4 spring onions, finely chopped
- 1 medium strength red chilli, deseeded and finely chopped
- 6tbsp Japanese rice vinegar
- 2tsp caster sugar
- 100g (3½ oz) asparagus tips
- ½ small cucumber
- 4 sheets sushi nori
- 25g (1oz) pickled ginger
- Soy sauce, to serve

METHOD:

- 1 Put the oats in a saucepan with 500ml (17fl oz) boiling water and bring to a gentle simmer. Cover and cook on the lowest heat for 30 minutes until the oats are tender. Add the quinoa and continue to cook, uncovered, until the quinoa is tender and the liquid absorbed. If there is excess liquid, drain through a colander and return the mixture to the pan and cook off any remaining moisture. Leave to cool.
- 2 Tip the grains into a bowl and stir in the spring onions, chilli, rice vinegar and sugar.
- 3 Cook the asparagus in boiling water for two minutes until tender. Halve the cucumber and scoop out the seeds with a teaspoon. Cut the cucumber into thin strips.
- 4 Lay one nori sheet on the work surface with the smoothest side face down and a longer side facing you. Spoon a quarter of the oat mixture onto the nori and spread in an even layer, keeping it 2cm (¾ in) clear of the long side furthest from you. Spread to the edges on the remaining sides and press down firmly. Lay several of the asparagus tips and cucumber pieces lengthways across the oats, making sure they are evenly spaced.
- 5 Lift the nori at the edge nearest you and roll up as tightly and compactly as you can. Cut into six even-sized pieces using a sharp knife, and transfer to a plate or board while you prepare the remaining sushi in the same way. Chill until ready to serve, drizzled with soy sauce if desired.

Carrot and coconut
loaf cake



Gluten free muesli
with tropical fruit





Gluten free muesli with tropical fruits

(Makes about 300g (10oz))

Gluten free oat flakes can be used to replace one of the other grains and oat milk makes a smooth, creamy alternative to regular milk for serving. For a softer muesli, add milk and leave to stand for 20-30 minutes before eating.

INGREDIENTS:

- 75g (3oz) millet flakes
- 50g (2oz) buckwheat flakes
- 10g (½ oz) popped amaranth
- 3tbsp sunflower seeds
- 1tbsp coconut palm sugar or light muscovado sugar
- Finely grated zest of 2 limes
- Good pinch each of ground ginger and cinnamon
- 50g (2oz) raisins
- 50g (2oz) mixed dried tropical fruits e.g. papaya, pineapple or mango, chopped
- 25g (1oz) roughly chopped Brazil, pecan or cashew nuts

METHOD:

- 1 Combine all the grains, sunflower seeds, sugar, lime zest and spice in a bowl and mix well so all the flavours are combined.
- 2 Add the fruits and nuts and mix well. Transfer to a jar or airtight container and store in a cool place for up to one month.

Mixed grain sushi



Carrot and coconut loaf cake



SUPER GRAINS



Super Grains by Joanna Farrow, published by Apple Press, an imprint of The Quarto Group (£14.99). Out now.

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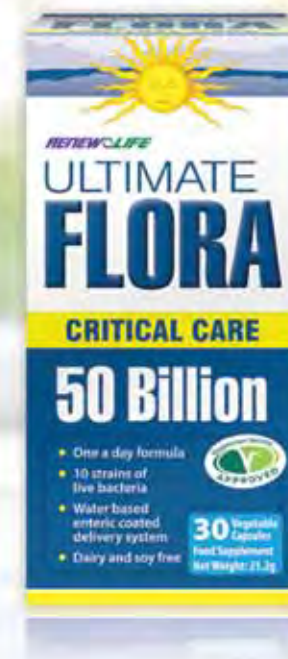
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