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NOV/DEC 2017

## BACTERIA BALANCE

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## DETOX DESIGN

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## THE FATIGUE FIGHT

A guide to Chronic  
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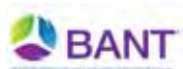
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# Welcome



This issue is always a highlight in the calendar for the *Nutrition I-Mag* team as it is the edition we feature the results of our Mentoring Scheme.

The scheme was set up a few years ago in partnership with the UK's leading colleges specialising in nutrition to support final year students and practicing post graduates and association members on the path to developing their skills as a health writer, and allowing them

to have their work published for the first time.

This issue, we have worked closely with CNELM and student Michelle Halemai, who turns her attention on fatigue. We are delighted to be able to publish her efforts and support Michelle as she takes her first steps into the world of nutrition.

The scheme works as it offers students the opportunity to think about where and how they would like to develop their nutritional careers, helping to build their skills and confidence, and we look forward to working with

more budding writers in the coming years.

*Nutrition I-Mag* is all about supporting students through their education and into their early years of practice, which brings me onto 2018; next year is set to be a hugely exciting one when it comes to educational events, with the IHCAN Conferences. Dates are soon to be released for the schedule of events in 2018, as well as themes and speakers. Keep an eye out at [www.ihcanconferences.co.uk](http://www.ihcanconferences.co.uk) for updates.

And don't forget that this is the issue where we reveal those in the running for one of our coveted *Nutrition I-Mag* Product Awards. These accolades are designed to recognise product excellence, and we would like you, our readers, to vote for your favourite. [Click here](#) to see what products are in the running.

Rachel

RACHEL SYMONDS, EDITOR

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# Autumn seminar schedule 2017

## Biosynthesis

### There's more to nutrition than nutrients

Nutrients constitute much of the vital energy in the foods we eat and equally, the more diverse and dynamic our diet the greater our potential for health. So the capacity for Nutrition Practice to exert health benefits is indeed profound. However, the modern Practitioner is routinely confronted by clients in an inflammatory, congested state with a lifestyle that does not sufficiently nourish them. To overcome these barriers the Practitioner can intervene with individual or combination supplements.

That being said, bioavailability and biological activity of nutrient combinations is dependent upon a number of factors; simply bombarding a stressed or weakened system can be either over-stimulating or just ineffective. Biosynthesis is the process through which basic nutrients and substrates are enzymatically activated into becoming much more than simply the sum of their parts. It is this process that forms Bionutri's core focus and is what **Edward Joy** and **Sue McGarrigle** will describe and unravel in their latest series of talks.

**Edinburgh** Tuesday 3rd October 6-9pm

Jurys Inn 43 Jeffrey St, Edinburgh EH1 1DH (close to Waverley rail station)

**Harrogate** Wednesday 4th October 12.30-3.30pm The Crown Hotel, Crown Place, Harrogate HG1 2RZ (10 minutes walk from Harrogate rail station, car parking available)

**Bournemouth** Wednesday 11th October 2-5pm

The Orchid Hotel, 34 Gervis Rd, Bournemouth BH1 3DH (parking available)

**London** Saturday 14th October 10am-1pm The Wesley Hotel 81-103 - Euston Street, London NW1 2EZ (3 minutes from Euston rail station)

**Birmingham/Solihull** Wednesday 18th October 10am-1pm

Beckett's Farm, Heath Farm, Alcester Rd, Wythall, Birmingham B47 6AJ

(Just off junction 3 of the M42, take the A435 north towards Birmingham, continue for 1 mile and turn into Becketts Farm Shop (look for the brown sign) just before the large roundabout)

**Taunton** Wednesday 1st November 10.30am-1.30pm Exchange House, 12-14 The Crescent, Taunton, Somerset, TA1 4EB (parking available behind Exchange House at The Crescent car park)

**Manchester** Wednesday 8th November 6-9pm

Friends Meeting House, 6 Mount St, Manchester M2 5NS (tram stop St. Peters Square). 10 minute walk to First Street Car Park and to nearest train stations Manchester Oxford Road or Deansgate.

**Bristol** Wednesday 15th November 10am-1pm Penny Brohn UK Chapel Pill Lane, Pill, Bristol BS20 0HH (five minutes from Junction 19 of the M5)

**Brighton** Tuesday 21st November 6-9pm

Friends Meeting House, Ship St, Brighton BN1 1AF (several car parks nearby)

**Maidstone** Wednesday 22nd November 10.30am-1.30pm

Hilton Hotel, Bearsted Rd, Maidstone ME14 5AA Junction 7 M20 (Car parking available or nearest rail station Maidstone East and use Park and Ride Service)

**Bury St Edmunds** Wednesday 29th November 10.30am-1.30pm

Best Western Priory Hotel, Mildenhall Rd, Bury St Edmunds IP32 6EH (car parking available or ten minutes walk from Bury St Edmunds Station)

**Bionutri** lectures will be CPD certificated and they are free of charge. **Refreshments** provided.

You can register for the event at [www.bionutri.co.uk](http://www.bionutri.co.uk) and click onto the secure practitioner section of the website. Or email [suem@bionutri.co.uk](mailto:suem@bionutri.co.uk) / call **Sue McGarrigle** 01905 345235.



# OUR CONTRIBUTORS

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



**Hannah Braye**

Hannah Braye NT, DipCNM mBANT, CNHC is a Nutritional Therapist, having studied at the College of Naturopathic Medicine (CNM), where she graduated with an award for outstanding performance. She is a member of the British Association of Applied Nutrition and Nutritional Therapy (BANT) and listed on the Complementary and Natural Health Care Council (CNHC)'s approved accredited register. She is a Technical Advisor at Probiotics International (Protexin), manufacturers of the Bio-Kult and Lepicol ranges.



**Frankie Brogan**

Frankie Brogan has spent more than 10 years working in the nutrition and wellness industry, including clinics, private consultancy and health stores. In his academic career, he's specialised in study and research into various aspects of nutritional supplementation, including clinical, public health, sports and exercise. As an Associate Registered Nutritionist (AfN), Frankie takes an ethical, practical and evidence-based approach to nutrition and wellness. He is Senior Nutritionist at Pharma Nord.



**Michelle Halemai**

Michelle Halemai has worked as a Fitness Professional for the last 25 years. She is a third year student of Bachelor of Nutritional Science HONS (specialising in Nutritional Therapy) with CNELM via Middlesex University, in London. She is the subject of this year's *Nutrition I-Mag* Mentoring Scheme.



**Rose Holmes**

Rose Holmes, BSc (Hons), Dip.ION, PGCE is a Nutritional Therapist with special interests in chronic illness, circadian rhythm disruption and healthy ageing. She is the Education and Training Manager at Rio Health.



**Dr Marilyn Glenville**

Dr Marilyn Glenville PhD is the UK's leading nutritionist specialising in women's health. She is Former President of the Food and Health Forum at the Royal Society of Medicine and the author of 14 internationally bestselling books, including her new book, *Natural Solutions for Alzheimer's and Dementia*. Dr Glenville runs a number of clinics in Harley Street, Tunbridge Wells, Kent and Ireland.



**Jenny Hall**

After a lifelong interest in health and nutrition, Jenny Hall embarked on a return to university, attaining a first class honours degree in Nutritional Science. On graduation, she was quickly employed at Viridian Nutrition to expand the Technical Services department, where she thrives off the client interaction whilst keeping abreast with research developments.

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# News bites

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

## New roles announced as BetterYou beats £5m turnover target

The natural healthcare company, BetterYou, has announced three new appointments as it surpasses its target of £5m turnover.

The award-winning business has achieved yearly sales growth of 30 per cent, recently achieving a turnover of £5.45m, and in light of the growth, has strengthened its team with three appointments.

Alrica Dixon-Middlehurst joins BetterYou as Quality Manager following extensive experience in the pharmaceutical industry. Alrica will impart her expertise in regulatory matters and the auditing and creation of procedures and systems to reinforce high quality standards across the product range.

Laura Housley joins as Project Manager and will be working alongside the New Product Development Manager to plan and monitor the completion of projects. And Helen Loxley takes on the role of Export Sales Executive and will manage several existing export accounts. She will also be responsible for pursuing new distributors in Germany, France, Italy, Spain and Hong Kong.

The three new additions bring BetterYou's staff total to 34.

To accommodate its growing

office and warehouse teams, the company has expanded its premises at Shortwood Business Park.

Andrew Thomas, founder and Managing Director, commented: "Each year, we've seen the BetterYou brand go from strength to strength. The company is going through a significant period of strategic growth and our focus continues to be the production of high quality products, supported by continued research and greater retail availability. Alrica, Laura and Helen will bring a wealth of experience to the team and their addition will further strengthen BetterYou's position in the marketplace."

(From left): Laura Housley, Helen Loxley and Alrica Dixon-Middlehurst



## Functional medicine course announced

How to apply functional medicine in clinical practice is the theme of a five-day seminar announced for 2018.

Applying Functional Medicine in Clinical Practice (AFMCP-UK) course takes place in London and with nearly a third of tickets already sold, the remaining places are expected to sell fast.

Nutri-Link is acting as the lead sponsor of the course, which is organised by Clinical Education, with the Institute for Functional Medicine (IFM) as the education partner.

For more than 20 years, the IFM has been teaching clinicians and practitioners the art and science that reflects the philosophy and practical application of functional medicine, and the core elements of these are distilled into five days.

The course teaches healthcare practitioners to more effectively integrate science, research, and clinical insights to treat and prevent disease and maintain health. Established and emerging diagnostics, therapeutics, and prevention strategies are extensively covered. AFMCP integrates these approaches through the Functional Medicine Matrix Model (an innovative and practical assessment tool) and through the emphasis on a therapeutic partnership between patient and practitioner.

Topics include gastrointestinal dysfunction and its links to chronic disease, inflammation and immune dysregulation, toxins, toxicity, and impaired biotransformation and hormonal imbalance, including adrenal, thyroid, and sex hormones.

The course offers up to 34 hours of CPD, and small group, interactive, case-based learning led by IFM Faculty and Experienced Practitioners

Find out more at [www.afmcp-uk.org](http://www.afmcp-uk.org), email [info@clinicaleducation.org](mailto:info@clinicaleducation.org) or call 0333 2414 289.





## Multi billion pound cost of obesity-related disease revealed

New figures have revealed the annual cost of treating the consequences of obesity will reach a concerning US\$31bn in the UK by 2025

The data, revealed to tie in with the recent World Obesity Day, was published by the World Obesity Federation, as it joined other global health leaders, including *The Lancet* and the World Health Organization, to shine the spotlight on the continued impact of obesity.

It was found that obesity-related diseases, such as heart disease, diabetes, liver disease, depression and many types of cancer, will cost the UK an estimated US\$31bn annually by 2025. In contrast, the World Obesity Federation suggests that by spending just US\$8.1m to reduce the prevalence of obesity

from 34 per cent to 29 per cent in the UK will help to avoid many of these consequences and their associated costs.

The coalition urged governments to prioritise investment in tackling obesity by investing in obesity treatment services, early intervention and prevention. Investment can also help to achieve the 2025 targets set by the World Health Organization to halt the rise in obesity and to achieve a 25 per cent relative reduction in mortality from NCDs.

The President of the World Obesity Federation, Professor Ian Caterson, commented: "Obesity is now a worldwide epidemic, which absorbs a vast amount of our healthcare resources. The annual medical costs of treating the consequences of obesity, such as diabetes and heart disease, is truly alarming. Continual

surveillance by World Obesity has shown how obesity prevalence has risen dramatically over the past 10 years and with an estimated 177 million adults suffering severe obesity by 2025, it is clear that governments need to act now to reduce this burden on their national economies."

Johanna Ralston, Chief Executive Officer of the World Obesity Federation added: "Addressing obesity now rather than treating the consequences is clearly going to be lifesaving and cost-saving, and an effective means for governments to meet their NCD targets. There is now a real urgency to integrate obesity services into universal health coverage programmes. The World Obesity Federation is here to help governments to meet this challenge."

## The best in sustainable beauty

The finalists in the Sustainable Beauty Awards have been revealed.

Ecovia Intelligence (formerly known as Organic Monitor), has revealed that more than 100 international entries were received for the awards, from operators in various sectors of the beauty industry, with the finalists now being revealed.

In the Sustainability Pioneer category, finalists include Neal's Yard Remedies and Trilogy Natural Products, while those in the running for the Sustainability Leadership accolade include Aveda and Hair O'Right.

In the Green Formulations category, Altea Organics Rose Jasminium Collection, Luxe Botanics, Organic Island, Planted in Beauty by Well Within, and Trilogy Rosehip Products are all named as finalists.

The winners will be revealed in the next few weeks at a reception in Paris.



## Beauty brand supports UK communities

An organic beauty brand has injected £20,000 in to community projects across the UK.

Green People has announced the winners of its national campaign –

Change the World in 20 Ways – and given away a total of £20,000 to fund community-based projects across the UK.

Green People received dozens of entries from groups and individuals across the UK, all hoping to receive £1,000 each to get their ideas off the ground, and make a positive difference to the communities around them.

The winners, whose projects range from helping the homeless, providing disabled facilities, developing educational initiatives and raising awareness of issues such as dementia, included Anne

Keller, from Kent, for her Dementia Booklet, Birmingham Cloth Nappy Network, Devon & Cornwall Food Action, Eco-Explore Community Interest Company, Caerphilly, and Lesley Penistone (pictured left), from Woking, Surrey, for her keep-fit sessions for children with challenges.

The campaign has been supported by well-known anatomist, author and TV presenter, and Green People's official brand ambassador, Professor Alice Roberts. She said: "Green People's 'Change the World in 20 Ways' campaign has highlighted groups and individuals who are working hard to make a positive difference in the world. The projects that have won funds are so diverse – some focused on health and disability, others on building community cohesion, or promoting nature education, but they all have something important in common – they're led by motivated and inspirational people who care deeply about others, and the environment."

# In Research

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

## Good nutrition in adult years boosts physical fitness in older age



New research has suggested that those who have a healthier diet through their adult lives will be stronger and fitter in older age.

The new study, led by the University of Southampton Medical Research Council Lifecourse Epidemiology Unit (MRC LEU), in partnership with colleagues at the MRC Unit for Lifelong Health and Ageing at UCL, looked

at the dietary patterns of a group of 969 British men and women, whose lifestyles have been monitored since they were born in March 1946.

Using information collected at four points in their adult lives (between 36 and 60-64 years), they examined diet at different ages in relation to three standard measures of physical function at age 60-64 (chair rise, timed up-and-go speeds, and standing balance).

The study, which was funded by the Medical Research

Council and has been published in *The Journals of Gerontology: Series A*, is one of the first to look at the long-term benefits of healthier diets across adulthood for physical function in older age, and revealed that those who ate more fruit, vegetables and wholegrain cereals, and fewer highly processed foods across adulthood performed better in the three tests. In addition, there was better performance in two of the measures (chair rise speed and standing balance time) among participants whose quality of diet had improved across adulthood.

Lead author, Siân Robinson, Professor of Nutritional Epidemiology at the University of Southampton, commented: "Improving the quality of your diet can have a beneficial effect on health, whatever your age. However, this study suggests that making good dietary choices throughout adulthood – by cutting down on highly processed foods and incorporating more fruit, vegetables and whole grains into your diet – can have a significant beneficial effect on strength and physical performance later in life, helping to ensure a much healthier old age."

Professor Cyrus Cooper, Director of the MRC LEU, added: "The link between dietary patterns and frailty in older people will open the door to effective interventions against the age-related decline in musculoskeletal function, which is such a growing cause of disability in ageing populations worldwide."

## Cannabinoid research into asthma announced



A new study into the effect of cannabis-based therapy for asthma has been announced.

Taking place at the Multidisciplinary Center on Cannabinoid

Research of the Hebrew University of Jerusalem, it is being sponsored by UK-Israeli cannabis biotech start-up, CIITECH.

CIITECH selected to award research funding, through a non-exclusive grant competition, to the collaborative work of Professor Raphael Mechoulam, a pioneer in the field of cannabis research credited for the discovery of the endocannabinoid system, and his colleague, Professor Francesca Levi-Schaffer, a global expert in asthma research. Together, the two Hebrew University scientists will embark on research to identify a possible inhibitory effect of a derivative of cannabidiol (CBD) on allergic airway inflammation.

"We know that CBD has anti-inflammatory properties and we're looking forward to investigating whether this will be effective on treating asthma and related respiratory conditions," commented Professor Mechoulam. "We're excited to further explore the therapeutic potential of cannabis."







## Research reveals importance of supplement on pathogenic bacteria

Three new studies have confirmed the power of a digestive supplement to suppress the growth of pathogenic bacteria and promote a healthier gut environment.

Symprove says it has demonstrated with three breakthrough studies that its formula has an antagonistic effect on pathogenic bacteria, such as *C. difficile*, *Escherichia coli* (AIEC), *Shigella sonnei* and MRSA.

Leading expert, Professor Simon Gaisford, of University College London, said: "Symprove is without a doubt the most resilient probiotic that we have tested. The latest data shows that Symprove has a clear inhibitory effect on pathogens, including *C. difficile* and MRSA, under lab conditions. This is a powerful first step towards using beneficial live bacteria as part of the management of patients with potentially life-threatening infections."

The first study, from University College London, School of Pharmacy, showed that Symprove inhibits the growth of *C. difficile*, achieved by lowering pH levels to a more acidic environment so that pathogenic bacteria were not able to proliferate or survive. In addition, the study showed that the bacteria in Symprove also produced by-product substances that directly inhibited the growth of *C. difficile*.

Carried out by ProDigest in Belgium, the second study further supported the anti-pathogenic effect of Symprove by demonstrating a significant reduction in the concentration of *Escherichia coli* (AIEC). It also showed that there was a significant

reduction in the already established *Escherichia coli* (AIEC) population.

The third study from UCL highlighted that Symprove had an important antagonistic anti-pathogenic effect on established colonies of *Escherichia coli* (AIEC), *Shigella sonnei* and MRSA.

Dr Bu Hayee, of Kings College Hospital, added: "I am keen to take Symprove's latest findings to *C. difficile* patients to help in the management of this difficult condition, and am excited that we would not be advising a drug but helping with a good technology to adjust their microbiome."



## Nutritional deficiencies in men studied over impact on embryos

Paternal nutritional deficiencies could have an impact on the survival of an embryo, new research has suggested.

While well-established links already exist between maternal nutritional deficits and embryo health and viability, environmental effects through the father that could influence embryo mortality are under examined. And so researchers set out to test for effects of varying levels of protein (P), carbohydrate (C) and caloric load in adult male diet on embryo mortality in *Drosophila melanogaster*.

The main findings of the study, the researchers said, was "that varying macronutrient levels and caloric density of the adult male diet significantly and independently affected probability of embryo mortality, and that, strikingly, these effects depended on male mating order".

They continued: "2D surfaces depicting P × C effects on embryo mortality showed that responses were essentially in flipped configuration between a male's first and second females, and this effect was particularly evident for sucrose-based diets. Macronutrient concentrations exerted pronounced effects on all indices of male body condition, and body



condition, in turn, predicted embryo mortality – males in the worst condition sired embryos with greater probability of death, and this effect was likewise restricted to when a previous mating event had recently occurred."

They added: "In sum, the results support the hypothesis that diet-induced variation in the metabolic state of sires influences early developmental processes in offspring and post-fertilisation fitness outcomes. This link may have implications for understanding the consequences of suboptimal diet for ejaculate quality and reproductive fitness in animals generally, and for elucidating related processes in natural populations."

The study has been published in the journal *Proceedings of the Royal Society B*.

# New to market

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



## BETTERYOU INNOVATES WITH VITAMIN K2

The team at BetterYou have developed two new oral sprays focusing on vitamin K2 and D.

Soon to be available is the Vitamin K2 Daily Oral Spray, which expands the DLux Oral Spray range.

Providing 180ug of vitamin K2, the formulation is easily absorbed through the inner cheek of the mouth, with no need for food or water.

In addition, BetterYou has launched its brand new DLux+ Oral Spray product, combining essential vitamin D with vitamin K2, which work synergistically to support bone density, a healthy heart and normal blood clotting.

DLux+ Vitamin D and K2 is an optimum strength oral spray, delivering 3000IU of vitamin D, alongside 75ug of vitamin K2.



## NATURE'S BOUNTY RANGE LAUNCHES TO UK

A new range of supplements has been launched under the Nature's Bounty brand.

Originally founded in 1971, Nature's Bounty supplements are designed to tackle everyday health and lifestyle needs, from daily wellbeing, to beauty, energy and much more, and has led its UK launch with a series of adult gummy formulations.

Products in the range include Adult Multivitamin Gummies, Cran-Max Cranberry Gummies, which provide 500mg of clinically studied Cran-Max made from cranberry whole fruit extract, and Hair, Skin & Nails Gummies, which includes biotin and collagen, as well as zinc, selenium and vitamins C and E.

There is also Women's Multivitamin Gummies, which contain 18 key nutrients, plus collagen, to support overall wellbeing. Also in the range is Biotic Pro Gummies and Co Q-10 125mg Gummies with vitamin C.

Outside of the gummy formulations, there is also a range of products to support healthy lifestyles, including Mini Omega-3 450 mg EPA/DHA, and Multi-Digestive Enzymes with betaine hydrochloride.

## WINTER WELLNESS FROM COMVITA

Comvita has unveiled its latest innovations with a new manuka range for the winter season.

Comvita has developed a new range of targeted manuka honey elixirs and lozenges, aimed at helping fight coughs and colds at every stage of the suffering cycle.

Unlike other cough remedies, Comvita's new range contains only natural sugars from manuka, thyme and rewarewa honey, which are renowned natural remedies for coughs and colds.

Products include Winter Shield, combining the goodness of manuka honey with vitamin C and zinc to support the immune system and Manuka Honey Elixir Extra Strength, featuring extra vitamin C, zinc, marshmallow root and mullein leaf. Then there is Manuka Honey Elixir Night Time, with magnesium citrate, and Manuka Honey Elixir Kids, featuring vitamins D and C and marshmallow root, which is suitable for children aged two to 12 years.



## NATURAL SWEETNESS

A new range of raw chocolates has been created to aid digestion and even weight loss.

Adam's Chocolate uses yacon as a natural sweetener, which is bringing a new dimension to raw chocolate. Yacon is packed with antioxidants and boasts the lowest scoring natural sugar on the glycaemic index.

Discovered by head chef, Adam Farag, while exploring the potential of food to overcome health issues over 10 years ago, Adam became the first chocolatier to master the marriage of this syrup with the rare criollo tree's precious bounty, cacao.

Processed at a low temperature to retain more of its nutrients than any other natural sugar, yacon has a subtle pear-like sweetness, which allows the natural flavours of this Soil Association and Vegan Society certified cold pressed chocolate to shine through.

Each cube of Adam's Chocolate contains magnesium, copper, zinc, manganese, phosphorous and potassium, as well as 17 amino acids, including all nine essential amino acids.







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# BANT News

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



## THE ROLE OF THE PPC

How does the BANT Professional Practice Committee support BANT nutrition practitioners in professional practice?

Practicing or aspiring Nutritional Therapists (NTs) all need to adhere to standards of good practice as set out in the BANT Professional Practice Handbook (the Handbook) and the CNHC Codes of Conduct, Performance and Ethics. The standards of good practice are there to support all BANT members to ensure we work ethically, legally and adhere to the ethos of BANT. The standards of good practice are there to support and protect BANT Nutritional Therapists.

The current standards, as set out in the Handbook, have evolved over many years. The Handbook is updated regularly to ensure it reflects the most recent and appropriate advice to support BANT members. Any changes to the law that may affect BANT members are also updated into the Handbook on a regular basis. As an example, legislative changes related to data storage are due to come into effect in May 2018; the PPC is currently reviewing these changes and will update the Handbook as required.

Ensuring all members, including student members, act in a legal manner at all times is of particular importance. Keeping in regular contact with members helps the PPC understand the wider issues relating to professional practice, and ensures the BANT Handbook reflects current good practice. For a BANT member, the first step with any professional practice query should be to refer to the

Handbook.

The Handbook cannot, however, reflect all professional practice queries that members may face on a day-to-day basis so in many places the guidelines in the Handbook are of a generic nature. A key role of the PPC is, therefore, to support members in the application of the guidelines as set out in the Handbook. It is important in such situations that BANT members contact the PPC with any queries related to these guidelines. This not only ensures that the PPC can support the member with the appropriate interpretation of the Handbook for their specific query, but as a result of such queries, the PPC may review and update the Handbook for better support of all members.

In addition to the Handbook, there are many other tools and guidelines for members to consult regarding Professional Practice. Topics include Red Flag Reminders, Lone Working guidelines, Guidelines for Students and Student Observations, and Data Protection check lists.

Barbara Powell, Chair of the PPC, explained: "The PPC is here to support you to practice safely, legally and ethically. We are also here to provide you with guidance and advice on all aspects of nutritional therapy practice. We welcome and encourage queries from any member who is unclear on how to interpret the BANT Professional Practice Handbook or any other query related to Professional Practice. We can be contacted at [bantpractice@bant.org.uk](mailto:bantpractice@bant.org.uk)."

## BANT LAUNCHES NEW NUTRIGENOMICS LEARNING ZONE MODULE

The British Association for Applied Nutrition and Nutritional Therapy (BANT) is proud to announce the launch of its new Nutrigenomics Learning Zone Module.

Personalised healthcare is at the beginning of a genetic revolution with the decoding of the wealth of information that lives within us. Nutrigenetics, nutrigenomics and epigenetics are emerging sciences that are already having an enormous impact on all our lives and which have a fundamental effect on the way we manage our own and our client's health.

Nutritional therapy and nutrigenomics are fundamentally linked and BANT nutrition practitioners are finding themselves at the cutting edge of scientific knowledge and its application in practice. Genetics and nutrigenomics can be very sensitive subjects and it is vitally important that nutrition practitioners understand the whole picture, what test they should be recommending, how this translates for gene expression and how to explain it to their clients appropriately, safely and legally.

In 2014, BANT launched its Register of Nutrigenetic Counsellors, following a commitment to the Human Genetics Commission to set up an advanced practice register covering nutrigenetic counselling, following the HGC's 'Genes Direct' reports in 2003 and 2007. To date, registration has been based on experience and training in the use of genetic profiles/tests. The NgC Register is a gauge of quality for nutritional therapy clients and the application form can be found here: [http://bant.org.uk/wp-content/uploads/2014/04/APPLICATION\\_FORM\\_NUTRIGENETIC\\_COUNSELLOR\\_REGISTER\\_2017\\_EDITABLE.pdf](http://bant.org.uk/wp-content/uploads/2014/04/APPLICATION_FORM_NUTRIGENETIC_COUNSELLOR_REGISTER_2017_EDITABLE.pdf)

To further demonstrate BANT's commitment to education and excellence, the organisation has launched the new Nutrigenomics Learning Zone Module to further support members in their learning and qualification in this important topic. The module can be found in the BANT Learning Zone at <https://bant.org.uk/centre-of-excellence/education/learning-zone/> alongside the existing learning modules, The Principals of Functional Medicine, Functional Testing 1 and Functional Testing 2.

Further learning tools will be being launched by BANT in the future, supporting the organisation's commitment to furthering the education and professionalism of its members.



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#### AGING

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The carotenoids lutein and zeaxanthin are to a large extent present in the central part of the eye.

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#### BLUE LIGHT

A growing concern in the last decade is the prolonged exposure to high-energy blue light from digital sources such as screens, tablets and smartphones. This may cause problems in visual performance and sleep quality.



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# Dates for 2018 revealed

We are excited to reveal the dates for the 2018 IHCAN Conference series.

The dates for next year's series of IHCAN Conferences have been revealed – and with top names already confirmed as speakers.

The line-up for the 2018 programme of events will include Professor Dale Bredesen, the man who is making Alzheimer's a treatable, curable disease, who is planning on returning to lead a special IHCAN conference.

In addition, the team has also announced a new collaboration with the Naturopathic Nutrition Association (NNA), the professional association for nutritional therapists, who practice in accordance with naturopathic principles. Talks are going ahead for the IHCAN Conferences to host the NNA annual meeting and their speakers alongside the IHCAN Summit on June 30.

## DATES FOR 2018

There are six events planned for next year, alongside the renowned IHCAN Summit, which places the focus on the

must know topics in nutrition and functional medicine.

The dates for 2018 are:

- March 17
- April 14
- May 19
- June 9 – Functional Sports Nutrition
- June 30 – IHCAN Summit
- September 8
- November 17

As always, the IHCAN Conferences take place at the Cavendish Conference Centre, in London, while the IHCAN Summit will be hosted at 155 Bishopsgate, also in London.

In addition to the actual conference, the events are a great way for practitioners to meet, learn and do business in an environment dedicated to you.

Find out more at [www.ihcanconferences.co.uk](http://www.ihcanconferences.co.uk), or call the team on 01279 810080.

Integrative Healthcare and Applied Nutrition

**IHCAN** 2018  
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# Dates confirmed for 2018 IHCAN Conferences

Our innovative, market-leading IHCAN Conferences will be back in full force. We have six events planned for 2018 alongside the renowned IHCAN Summit, focusing on the most cutting-edge topics in nutrition and functional medicine.

A 'must-attend' conference series for the whole industry, IHCAN Conferences are always a sell-out. Meet, learn and do business at the Cavendish Conference Centre, London - in a environment dedicated to you.



@IHCANconference

Dates for  
your diary

**17 March 2018** | Auto Immunity

**14 April 2018** | Gut Health

**19 May 2018**

**9 June 2018** | Functional Sports Nutrition

**30 June 2018** | Integrative Healthcare & Applied Nutrition Summit

**8 September 2018** | Gut Health

**17 November 2018**



**Look out for more information about the themes, topics and speakers in the months to come. We look forward to seeing you again at next year's series.**

Significant discounts available for students and members of other associations.

# DESIGNS ON DETOX

Detoxification is a beneficial process to promote good health, but where do you as Nutritional Therapists start? Our experts offer their ideas.





**W**e are reaching that time of the year when clients may be feeling the effects of overindulgence, which makes it the most common season for detoxing.

Detoxification has become a bit of a buzzword in recent years, thanks to the various social media health and fitness 'gurus' extolling its benefits. This has meant that people are perhaps not following the safest guidelines when it comes to detoxing and are not necessarily doing it correctly. But a well-planned out detox still remains a really good choice, for many reasons – and not only at this time of year.

Designing the correct detoxification protocol for your clients, based on individual needs, is really important, but there are some simple guidelines you might want to follow as a starting point.

"Detoxing should be the foundation of all health protocols. Clearing toxins is crucial to good health," commented Nutritionist, Rose Holmes BSc, Dip.ION, PGCE, Education Manager at Rio Health. "The result of detoxification protocol – daily or concentrated – should be renewed vitality."

## THE NEED TO DETOX

So, what does it actually mean when we talk about a detox? And why would we find it useful?

Holmes explained: "The word 'detox' seems to be on everyone's lips, and it would be great if that was because it really was a way of life, something we set out to consider every day. Sadly, the term more commonly refers to a brief period of deprivation in between periods of high consumption of toxin-laden foods and drinks. As well as facilitating toxin removal, detoxing may help with improving skin quality, boosting energy levels, facilitating weight loss, enhancing immune function, preventing chronic illness, slow premature

ageing, improve mood and cognition and generally restore balance to the body. When the body is busy dealing with foreign substances (toxins) it has less time to deal with the metabolic processes that help us maintain optimal function of body systems.

"Since we expose ourselves daily to toxins, we need to be daily ensuring detoxification processes are optimal. We need, therefore, to ensure daily that detoxification channels are open and we are optimally processing toxins."

Lindsay Powers, Nutritionist and Health Coach at Good Health Naturally, agreed, adding: "The body is generally very good at detoxifying on a daily basis. You can assist this by allowing your organs to rest and rejuvenate by not eating between sun down and sun rise (depending on the time of year, of course). Some people feel that a full detox is beneficial, maybe once or twice a year, for example, spring and autumn. Others may do a one-off detox for a specific reason.

"Anyone can benefit from a detox, but if they are too depleted then it may not be advisable until some strength has been regained."

The reason we need to detox is due to the overload our various organs have to cope with.

Helen Ford BA(Hons) DipION MBANT CNH, Head of In-house Nutrition at the Natural Health Practice, explained: "The principle of detoxing seems to divide opinion. There are those who say that the body is perfectly capable of detoxing itself, and those who recommend bizarre diets and other practices that sound very uncomfortable indeed! As usual, common sense needs to be applied. Under 'normal' circumstances, yes, your body can detox itself. However, we do not live in 'normal' times for our bodies.

"They are bombarded by pollutants, internally and externally, and our sedentary lives, combined with a

diet woefully short of fibre, mean that often our gut can become lazy, leading to retention of waste products for far longer than healthy. We recommend that a detox programme is followed at least once a year to give us an internal cleanse to give our digestive system a kick start and support the liver, the organ of elimination. It is quite popular to follow a 'pre-tox' now especially before Christmas when there are generally more dietary excesses!"

Holmes added: "We are constantly bombarded by toxins through the foods we eat, the beverages we consume, the air we breathe and the products we place on our bodies. These add to the burden our 'detoxifying' organs (liver, kidney, intestines, respiratory tract, blood, lymph system and skin) need to cope with just from normal metabolic processes.

"We may also have exposure to toxins and heavy metals via smoking, dental amalgams, cooking methods, cosmetics/personal hygiene products, cleaning products, fabrics and paints, as well as through work environments (especially automotive and construction industries, hair dressing and nail salons). This is in addition to dealing with alcohol, non-filtered water and pesticides from non-organic foods, not to mention prescription medications and the electromagnetic fields that surround us."

## TIME TO DETOX

There are some telltale signs that a client needs to detox, and look for those with certain lifestyles.

"Fatigue and low energy are an indication that detoxification channels are overloaded. These are common complaints that indicate that toxin load may be exceeding the body's ability to detoxify," Holmes explained. "Constipation is an indication that one of the primary excretion routes is blocked. We need two to







three softly-formed and effortlessly-eliminated bowel movements daily for ensuring good detoxification as without elimination of toxins through faeces, these can re-circulate.

"Many skin conditions suggest detoxification may not be optimal. And those with skin conditions may be using chemical (toxin)-laden skincare products, which may further exacerbate the problem. Headaches can be a key sign of both dehydration and the need to detox. Halitosis (bad breath) may be an indication of a dysfunctional liver, indicating potential benefit from a detoxification protocol. Clients may also present with digestive problems, most of which may suggest dysfunctional liver."

Powers continued: "There may be times when a person feels the need to detox, for example, when coming into contact with heavy metal toxicity, mercury/radiation treatments or environmental pollution. They might want to regain some energy and generally feel a bit sluggish, so may benefit from a detox. Some people may want to detox before starting some major lifestyle changes.

"They may have multiple symptoms, poor bowel movements, dull skin, low energy and are not responding well to current treatment protocols."

And it goes much more deeper than that too.

Holmes added: "Nervous system conditions (for example, depression, irritability, foggy brain, recurrent headaches) may also suggest dysfunctional liver. Blood sugar problems (sugar cravings and hypoglycaemia) may also suggest need for detoxification. Hormonal imbalances, including severe menopausal symptoms, may suggest less than optimal liver capacity to detoxify. And immune dysfunction including allergies, Chronic Fatigue Syndrome, fibromyalgia, auto-immune diseases and recurrent viral, bacterial and parasitic infections

may indicate dysfunctional liver and need to detoxify."

Don't forget too that being obese or overweight and finding it difficult to lose weight can be a sign that you need a detoxification as it can help the body eliminate toxins stored in fat cells, which may improve metabolism and thus aid fat burning (and consequent weight loss).

**"Establish the goal of the individual and target the approach towards that. Begin by ensuring all the organs of elimination are working well, especially the bowels and liver."**

Ford added: "Those trying to kick start a weight loss programme will benefit from detoxing as automatically the diet will be cleaner and less processed, which is key to healthy weight loss. Women with hormone dependant conditions like fibroid and endometriosis would benefit as the liver has to work optimally in order to clear the excess hormones from the body efficiently."

And Holmes also pointed out: "Signs of premature ageing may also indicate stress on the detoxification processes; optimal functioning allows the body to absorb nutrients, including antioxidants. It also aids body systems to deal with free radicals and heavy metals, which contribute to ageing."

## PROTOCOLS IN PRACTICE

Let's now look at the advice to offer in terms of the right detox to follow.

"Establish the goal of the individual and target the approach towards that. Begin by ensuring all the organs of elimination are working well, especially the bowels and liver, to avoid any build-up of toxins in the system.

Ensure they are mobilised, as we need to get them out," Powers advised.

Let's start with duration.

"If we are exposed to toxins daily, it would be best to be eliminating toxins daily. More concentrated detox protocols may vary in length from three days to three months. The length of time would be dependent upon the starting point regarding toxin levels and the health of the client, as well as many other factors," Holmes explained.

Ford added: "A month is a good time to retune your body but because we are not advocating harsh detoxes (i.e. juice only/fasting), it can be followed for longer, perhaps three months. Many people feel so much better having cut out alcohol, caffeine and sugar, they continue to abstain or might have them on a less frequent basis."

And then we need to discuss what should be eliminated and what should be included to get the most from the process.

Ford advised: "Your liver is your waste disposal unit – it works hard to process and metabolise toxins and hormones, making them safe to be eliminated. It needs good quality fuel in the form of nutrients to work efficiently. So, if you can give this organ a break from things that put strain on like alcohol, caffeine and sugar, it is more likely to work better for your health.

"We recommend cutting out 'constipating' fast and pre-prepared foods, white foods (rice, pasta, potatoes, bread) and meat, alcohol, refined sugar and caffeine. These foods provide no nutritional value and put higher demands on the liver and gut."

Holmes added: "A detox protocol should look to optimise function of all elimination channels. In addition to ensuring regular bowel movements, protocol should consider lifestyle factors such as exercise





(gentle to moderate) to aid function of other elimination channels, such as skin (via sweat), lungs and lymph.

"In terms of diet, it makes sense to eliminate the substances which are contributing to the toxic build-up. These would include alcohol, processed foods and refined sugar. These can contribute to toxin load. Also eliminate exposure to other non-food toxins, for example, look at skincare and cleaning products. And consider the impact EMF may have."

There are a few easy recommendations to make with regard to diet, starting with choosing organic foods where you can.

In terms of the foods to add in to aid detox, there are many.

"If you are planning to detox, you would do well to include watercress as part of your regime. Watercress has a positive effect on detoxification enzymes in your liver, helping them with the clean-up. Add peppery watercress leaves to salad or make a simple blended watercress soup. You could add watercress leaves to a green smoothie but it's not for the faint-hearted due to its piquant flavour," Ford advised.

"During detoxification, your liver makes a number of waste products that could be harmful to your body. These waste products can be made safer with the inclusion of antioxidants in your diet. Fruit and vegetables are full of antioxidants so include plenty of these in your diet, at least five a day, to make sure your liver has everything that it needs to work well. Aim to eat a wide variety of colours throughout the day as you get different antioxidants from the different colours. Eat plenty of onions, garlic and turmeric. These foods contain powerful compounds that have been found to prevent cancers and protect the cells from damage caused by free radicals, a by-product of the liver's hard work. Plenty of water and herbal tea should be included."

And Powers suggested: "Juices, smoothies, soups, salads (lots of fruits and vegetables, especially green veggies, beets), good proteins and fats, such as nuts, seeds, flaxseeds, chia, avocados, coconut oil, olive oil, etc., legumes, plus buckwheat and quinoa. Flavour with fresh herbs, garlic, cinnamon, ginger, turmeric, sea/rock salt. Keep it light and nutritious.

"Ensure plenty of pure water is drunk throughout the day (six to eight glasses), green tea and chamomile tea. Consume fermented foods such as kimchi and sauerkraut, and use apple cider vinegar in water to support digestion. Some detox plans may involve just juices, for example, to kick-start the process."

Holmes continued: "Nutrient-rich foods with high chlorophyll content may benefit detoxification; these also alkalise and deodorise (for example, bad breath). Consider incorporating chlorella, spirulina, wheat grass and barley grass into your daily intake. Barley grass is very mild tasting and makes an excellent green drink when mixed with water, thus also helping to ensure adequate hydration, another very important aspect in detoxification protocols.

"Herbs such as parsley and cilantro (coriander) are also sources of chlorophyll and useful to aid detoxification. The spice turmeric may also benefit as it stimulates liver secretions and bile flow. Other foods which aid detoxification include beetroot, watercress, brassicas (broccoli, cauliflower, cabbage, kale), radish, artichokes, garlic and onions. Fibre (for example, in vegetables and fruit) is important for binding toxins for removal through the gastrointestinal tract. Protein is also needed as it supplies amino acids for the enzymes needed for detoxification processes."

## SPECIFIC GROUPS

Experts have offered some general advice here for



most people, but do bear in mind there may be specific groups of people whose need for detoxification may be greater.

Holmes commented: "Anyone whose diet and lifestyle choices mean higher exposure to heavy metals and other toxins may benefit from more concentrated detox protocols. This would include smokers, those consuming alcohol and those who eat non-organic fruits, vegetables and meats. Also those exposed to high amounts of chemicals, either in their living environment or through their work. This might include gardeners, farmers and agricultural workers (non-organic), automotive workers, hairdressers, nail technicians/manicurists, those working in the cosmetic industry or using high amounts of cosmetics (theatre, models), cleaners, painters/decorators, lifeguards at swimming pools and countless others with high toxin exposure.

"Those who have mercury dental amalgams may also benefit. Women who are pregnant or breastfeeding,





however, should not actively do concentrated detoxification protocols because it may harm the foetus/infant."

She continued: "A concentrated detox protocol might be beneficial for women with hormonal irregularities and might also be useful in the months before a planned (or hoped for) pregnancy. As pregnant women and those breastfeeding are not advised to actively do concentrated detox protocols, this planning stage might give women optimal conditions for fertility and for a successful pregnancy outcome.

"More concentrated detox protocols might be considered if increased indication that detoxification channels are overloaded or we have known increased toxin exposure."

## SAFETY FIRST

Ensuring your clients are being safe when following a detox, and are made aware of the likely side effects, is really important if they are to stick to the plan and get the most out of it.

Ford advised: "Common side effects could be headaches, increased lethargy, low mood and 'flu-like' symptoms but they are usually short lived – perhaps seven days maximum, although everyone is different. If someone has been drinking seven cups of coffee and lots of sugar and fizzy drinks, they are going to have more severe side effects and might be better reducing down rather than avoiding altogether. The individual would get the guidance appropriate for their needs."

And Holmes added: "An important part of any detox – daily detox or concentrated detox protocols – is ensuring adequate hydration. Insufficient intake of water often results in insufficient flushing of toxins, the whole point of detox. Ensure elimination channels are open before you start. And keep them open. This is

essential for elimination of toxins. When concentrated detox protocols are used, there may be noticeable signs that detoxification is occurring, such as headache, digestive issues, frequent urination, nausea and cravings. There may be increased need for sleep, and sometimes disrupted sleep.

"This is because the body is being stimulated to greater work for purging accumulated toxins. The reaction, sometimes referred to as a 'Herxheimer Reaction' or 'Healing Crisis', signals the body had need to detox due to the high toxin load; the reaction signals 'die-off' of toxins.

"If other symptoms like skin rash or vomiting occurs, it may indicate need to change the detox protocol as the body may be trying to expel toxins faster than the elimination channels will allow. If well supported with nutrients and co-factors, adequate hydration, fibre and sleep, and if elimination channels are functioning optimally, most of these 'signs' of detox may go unnoticed."

## DETOX TOOLKIT

There are certain nutritional supplements that you may want to add in to aid a detoxification.

"Chlorophyll-rich algae (chlorella and spirulina) and grasses (wheat grass and barley grass) can be taken in supplement form. Psyllium is a good way to add fibre and B complex vitamins are important co-factors in detoxification processes and play an important role in the methylation detoxification pathway," Holmes suggested.

"Digestive enzymes may be necessary to ensure the adequate break-down of proteins into amino acids, necessary for fuelling the detoxification pathways. Red beet (*Beta vulgaris*) and the amino acid taurine may support liver and gall bladder function."

Keep in mind antioxidants too.

Holmes explained: "Antioxidants generally, particularly glutathione, which is a tripeptide comprised of L-cysteine, L-glutamine and glutamate, support detoxification processes. Glutathione concentrates in the liver and is essential in detoxification processes.

"Curcumin, one of the active constituents of the spice turmeric (*Curcuma longa*), may help to maintain the normal action of elimination pathways in the liver. Anise, *Pimpinella anisum*, is another detoxifying spice which may help improve mental clarity and reduce 'brain fog'."

Don't forget the cleansing power of herbs too.

"Herbs which may support liver health include dandelion root, beetroot, artichoke leaf, milk thistle and curcumin. The South American herb, *Desmodium molliculum*, has been used for many years as a detoxifier and blood cleanser, supporting liver, kidneys and lymphatic systems; it may minimise 'die-off' reactions when anti-microbials are used," Holmes added.

Ford added that supplements to aid liver and digestive function are important, including psyllium husks, flaxseeds and prune powder, providing good quality fibre necessary to clean away old waste products clinging to the gut wall.

"A good quality multivitamin and mineral to ensure a good foundation of B vitamins and magnesium to support energy and stress hormones," she added.

Powers continued: "Detox supplements can include kidney/liver or bowel cleansing herbs to ensure all the channels of elimination are opened up. You can use zeolite and magnetic clay, plus chlorella/spirulina to help draw out heavy metal toxicity. Nascent Iodine is important to support the body's detoxification pathways." ●





## Live Life Lighter

Gaining extra pounds isn't always down to over consumption or lack of exercise. In fact, the bacteria in our guts can have a huge influence on what we crave and how much weight we gain. Lepicol Lighter is a new scientifically developed, natural food supplement which could assist your customers' weight loss journey. It contains glucomannan, which in the context of an energy-restricted diet can contribute to weight loss. While chromium helps maintain blood glucose levels and 7 strains of live bacteria keep the gut healthy beneficial when trying to lose weight.

For more information, visit [www.lepicol.com](http://www.lepicol.com)



## New Adrenal Function Profile now available from CNS

Cambridge Nutritional Sciences is excited to announce the official launch of their new functional test, the Adrenal Function Profile. This adrenal screen requires convenient salivary sample collection, taken at 5 intervals throughout the day, enabling a more precise analysis of an individual's 24-hour cyclic cortisol concentration.

Importantly, this will also help to accurately pinpoint the significant cortisol surge, which should assist practitioners in giving more personalised support to their clients. The test also includes morning and evening DHEA measurements, allowing the hugely significant Cortisol/DHEA ratio to be identified. Contact Cambridge Nutritional Sciences on 01353 863279 or [nutrition@camnutri.com](mailto:nutrition@camnutri.com) for more information.

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# BACTERIA BALANCE

The use of probiotic supplements is well established when it comes to supporting digestion. But as the body of scientific evidence develops, along with the product offering, it's important to stay up to date, say the experts.



**T**he way we eat in today's modern world has changed immeasurably compared to even 20 years ago. Not only is convenience culture making it easier to eat food quickly, on the go, and with little preparation, there is also concern that we are simply not obtaining the nutrients that we need for good health and wellbeing from our everyday diet.

When you then factor in exposure to pollutants, our reliance on medication such as antibiotics, and lifestyle choices, it is clear to see why our balance of

bacteria in the gut can be out of sync. This is having an impact on our gut health, which in turn affects on so many areas of our wellbeing.

"Before the widespread use of fridges and freezers, we would historically have preserved much of our food through fermentation, thereby exposing ourselves to a variety of dietary beneficial microbes on a regular basis," commented Nutritional Therapist, Hannah Braye, who is Technical Advisor at Protexin, which has the Bio-Kult and Lepicol brands in its portfolio. "A number







of factors can compromise the balance of bacteria and other microorganisms in our guts."

Jenny Hall, Technical Services Assistant at Viridian Nutrition, also pointed out: "As research expands, probiotics can be indicated for greater reaching symptoms than gastrointestinal issues alone. In the past, probiotics were considered for irritable bowel syndrome (IBS), inflammatory bowel diseases or symptoms such as bloating, flatulence, constipation, diarrhoea, intestinal permeability and dysbiosis. Yet as a greater understanding of the microbiome is grasped, further indications could be brain fog, low mood, skin conditions, cognitive dysfunction, lethargy, fatigue, metabolic disorders, toxic overload, food allergies, immune support, viral infection, yeast infection, antibiotic side effects, respiratory infections, stress and dental caries. In conclusion, probiotics could be indicated in most chronic disorders."

## ADDRESSING THE CAUSES

There are a number of factors that can lead a person to your clinic in need of digestive support, and this is because the balance of bacteria can be upset in a variety of ways.

"Microbiome composition can be rapidly altered by exposure to antibiotics, with potential knock-on effects on health, for instance through the selection of resistant opportunistic pathogens that can cause acute disease.<sup>4</sup> It is, therefore, advisable to take a live bacteria supplement alongside antibiotics (at least two hours apart) and for at least a few weeks afterwards to help support the gut and reduce the risk of antibiotic associated diarrhea and *C. difficile* infections.<sup>5</sup> Similarly, infection, stress, travel or a period of unhealthy nutrition or lifestyle can all affect the composition of our gut bacteria<sup>6</sup>," Braye commented.

Hall added: "In the clinical setting, the initial construct of the functional matrix can shed light on the triggers and mediators of a dysbiotic microbiome. Contributing factors can start before birth, for example, the maternal and paternal microbiome and diet. Vaginal birth versus caesarean section, breast fed versus formula fed, the parental beliefs on diet to even parental stress levels can impact the development of neonatal microbiome. Early years factors can include antibiotic administration, exposure to pathogenic bacteria or anti-bacterial agents. Each life phase may add to the load of potential microbiome disrupting exposures."

Egzona Makolli, Technical and Commercial Nutritionist for Kinetic, which has brands including Nature's Answer, Garden of Life and Amazing Grass, added: "Our digestive system is home to microorganisms that colonise the gut and create an extraordinary environment that lives in sync, called the gut flora. This gut flora provides a natural barrier against invaders, unhealthy bacteria, parasites, fungi, and viruses that we ingest daily. Many factors can contribute to an imbalance in the gut flora; while antibiotics are necessary to fight off certain infections, they can have a devastating affect on beneficial bacteria in the gut, organs and tissues. Hostile bacteria can establish themselves in the gut wall as it can take weeks for beneficial bacteria to replenish the gut.

"Additional epigenetic factors such as poor diet, prolonged stress, environmental emissions, alcohol and medication can all damage healthy bacteria. Consuming animal by products that have routinely been given antibiotics, steroids and other drugs can, in turn, damage the gut flora. When the ratio of good to hostile bacteria is decreased, many health symptoms can occur, including bloating, constipation, diarrhoea,

excessive gas and poor absorption of nutrients."

And be aware too that an unbalanced gut has a huge knock-on effect to other areas of health.

Nicola McCusker, Nutritional Therapist, pointed out: "Gut flora has an effect beyond the gut and can influence the functioning of the immune system. So, clients presenting with allergies or even infections such as the common cold may benefit from probiotics supplementation.<sup>(1, 2)</sup> For example, *L. plantarum* 299v's ability to offer immune support has been demonstrated, with studies revealing that it may help with the management of allergies via an increase in interleukin-10 synthesis (which helps reduce inflammation), as well as secretion of macrophages and T-cells.<sup>(3)</sup>

"When studying to become a nutritional therapist I was told that for a client with numerous systemic symptoms, the best place to start supporting was the gut. This is so true! If there are food wastes that are not being eliminated or putrefying in the digestive tract, this can affect the whole body as these toxins can enter the blood circulation and become systemic. Symptoms that can manifest include poor skin, aching joints and foggy thinking.

"The industrial revolution over the past 100 years is an aberration in comparison to the working lives of people in the previous 1,000 years, where everyone moved around a lot. Foods that are high in Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols (FODMAPs) are known to increase the symptoms of irritable bowel syndrome<sup>(4)</sup> and this is worth looking into."

Dr Marilyn Glenville PhD added: "We now know that a having a good balance of bacteria in the gut is crucial to good health. Research has shown that probiotics can be helpful for weight problems, type 2 diabetes,





urinary tract infections, hormone imbalances and also skin problems. The beneficial bacteria are important as they can improve digestion and they also help in the manufacture of certain nutrients, such as the B vitamins and vitamin K, which is important for bone health. Also, 70 per cent of the immune system is in the gut so they are important for healthy immune function."

## DIETARY RECOMMENDATIONS

The key place to start when clients are presenting with signs of unbalanced gut bacteria is with the diet, being sure to cut out foods that allow bad bacteria to grow and ensure those that support the growth of good bacteria are increased.

As always, remember that everyone is different.

"What is causing bloating in one person may have a very different cause to the next person. A nutritional therapist, through relevant questions and tests, will be able to deduce a number of areas that may be problematic," McCusker advised. "For example, small intestinal bacterial overgrowth (SIBO) has been recognised as reason for IBS and there are a number of tests now available to confirm if this is the case. If SIBO is confirmed, then following a low FODMAP diet is recommended to help reduce and even eliminate symptoms."

So, what to recommend?

"Encouraging clients to reintroduce fermented foods such as sauerkraut, kimchi, kefir, live yoghurt and miso into their diets is great way to provide the gut with extra support and have been associated with a number of digestive, immune, metabolic and mental health benefits<sup>7,8</sup>," Braye recommended.

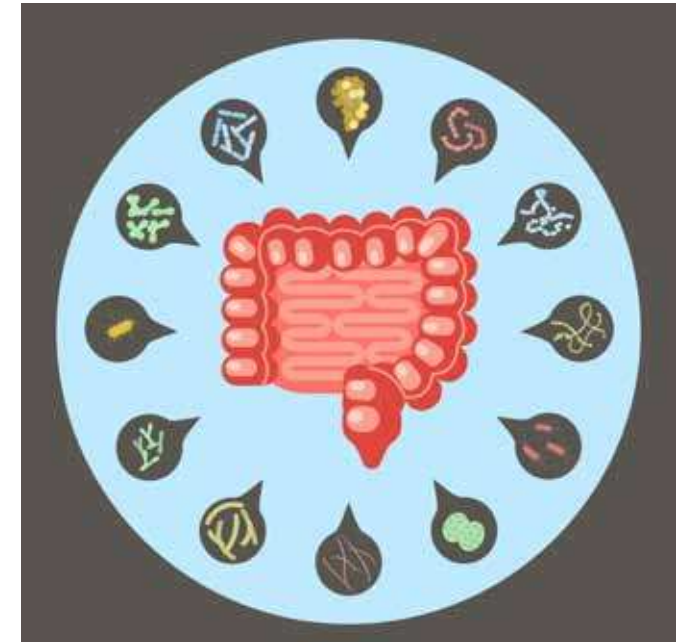
"Certain foods, such as garlic, have also been shown to possess anti-microbial and anti-fungal

properties. Also important for maintaining a healthy microbial balance within the gut is eating plenty of non-digestible carbohydrates, (ie., fibre and resistant starch). These travel to the large intestine, where they undergo fermentation, providing a source of microbiota accessible carbohydrates (prebiotics), and have been shown to increase bacterial abundance and gene richness, in particular, *bifidobacteria* and lactic acid bacteria.<sup>9,10</sup>

"They are also important to maintain abundance of short-chain fatty acid (SCFA) producing species, such as *Ruminococcus*, *E.rectale* and *Roseburia*, which play a pivotal role in helping to maintain the integrity of the gut lining.<sup>11</sup> Some individuals with dysbiosis or an overgrowth of bacteria in the small intestine may find that increasing fibre and resistant starch intake can exacerbate digestive symptoms initially. These issues may therefore need to be addressed through supplementation beforehand, and increases in fibre should be done gradually."

Makolli advised: "It's essential to eat a diverse range of food as there are hundreds of species of bacteria in the gut and each plays a different role in human health and requires different nutrients to grow. A dietary intake of different types of food can lead to a diverse microbiota<sup>(11)</sup> as unfortunately current statistics show that the Western diet is not very diverse<sup>(12)</sup>. A few studies have shown that the gut microbiota diversity is much greater in people from rural regions of South America and Africa compared to westernised countries<sup>(13)</sup>.

"Fruits and vegetables are the best sources of nutrients for a healthy gut flora as they are high in fibre, which cannot be digested in the body, although fibre can be digested by certain bacteria in the gut and can stimulate their growth. Good sources of fibre



include beans, legumes, chickpeas, lentils, broccoli, artichokes, green peas and wholegrains. Studies have shown apples and artichokes to increase *Bifidobacteria* in humans<sup>(14)</sup>. Include plenty of fermented foods, such as yoghurt, kimchi, sauerkraut, kefir, kombucha and tempeh. Studies have shown that individuals who consume yoghurt have more *lactobacilli* in their intestines and fewer *enterobacteriaceae*, which is associated with inflammation<sup>(15)</sup>."

Dr Glenville continued: "From a dietary perspective, it would be important to focus on the person having a wide variety of food. Having a diverse balance of bacteria is thought to be the healthiest and eating a diet that consists of different food types can encourage a diverse microbiota. Encouraging the inclusion of fermented foods can also be helpful, such as organic natural yogurt, sauerkraut, kefir, tempeh and







kimchi. The fermented foods contain prebiotics, which act as an energy fuel for the beneficial microflora. And avoiding artificial sweeteners is important as they have been shown to negatively affect the microbiota in just seven days."

## CLIENT SPECIFIC

Probiotics are useful in a variety of ways, and you may see clients presenting with different issues in which probiotics could be a useful part of a nutritional plan.

Braye advised practitioners to look for the signs of dysbiosis.

"Dysbiosis in the gut is associated with the development of a wide range of both intestinal and extra-intestinal symptoms and disorders. Intestinal manifestations range from bloating, flatulence, constipation or diarrhoea to inflammatory bowel disease, irritable bowel syndrome (IBS), and coeliac disease,<sup>1</sup> whilst extra-intestinal disorders include allergy, asthma, eczema, acne, metabolic syndrome, cardiovascular disease and obesity," she explained.<sup>1</sup> "Our gut bacteria play a fundamental role in the development and function of our immune system. Frequent colds and infections are a common sign that someone's microbiome could potentially do with some extra support, as are autoimmune and other inflammatory conditions.<sup>2</sup> Dysbiosis may also play a role in a number of mental health conditions, and there is increasing evidence that modulating the gut-brain axis using live bacteria supplements could be a therapeutic solution for anxiety and depression."<sup>3</sup>

And Hall explained the breadth of issues that can be experienced.

"Current theories lie on the crosstalk, not only between the microbiome and host but extends to brain, endocrine system, immune system and

skin. Thus, the modulation of the microbiome has potential repercussions in such areas. For example, a study that demonstrated gut-brain crosstalk reported an improvement in cognitive function in a group of Alzheimer disease patients following 12 weeks of probiotics administration. A further study demonstrated the modulation of cholecystokinin and glucagon like peptide 1; two intestinal hormones that contribute to satiety, by *Lactobacillus gasseri* CMUL34 and *Lactobacillus acidophilus* CMUL67; a demonstration of the endocrine-gut link," she explained.

"Additionally, immune-gut crosstalk was demonstrated in a study assessing probiotic supplementation during chronic stress. It was reported that the probiotic supplementation could act on the gut and systemic immunity by improvement of the structure of the villi, increased the systemic immune response and protected against Salmonella infection. Interestingly, *Lactobacillus Rhamnosus* GG has shown skin-gut improvements in both acne and atopic dermatitis. A randomised, double-blinded, placebo-controlled study saw the administration of 3bn *Lactobacillus Rhamnosus* GG for 12 weeks to a small group of adult acne patients with blood sugar dysregulation. The results showed a significant improvement in acne and the associated blood sugar dysregulation. A double-blind, randomised placebo-controlled trial saw the administration of *Lactobacillus Rhamnosus* GG prenatally to mothers who had at least one first-degree relative (or partner) with atopic eczema, allergic rhinitis, or asthma, and postnatally for six months to their infants. The frequency of atopic eczema in the probiotic group was half that of the placebo group. "

Antibiotic use is perhaps one of the best understood areas when it comes to beneficial effects of probiotics.

"Antibiotic use is the most common sign a client presents that they require probiotics as antibiotics function the exact opposite to probiotics, antibiotics are designed to kill bacteria in the body and do not distinguish between the good and bad. Current research suggests that if a client has ever taken a course of antibiotics, then they should consider a course of probiotics<sup>(4)</sup>. Current evidence shows that two particular strains, *Lactobacillus rhamnosus* and *Lactobacillus acidophilus*, reduce the incidence antibiotic associated diarrhoea by around 24 hours<sup>(5)</sup>," Makolli explained.

She continued: "Many skin disorders are also linked with an imbalance in the gut flora as currently, antibiotic drugs are used to treat skin disorders such as acne, rosacea and atopic dermatitis. Antibiotics are designed to kill not only pathogenic microorganisms but also non-pathogenic microorganisms, disrupting the skin and gut microbiome, causing dysbiosis. Probiotics may help restore the skin microbiome, as well as gut flora as studies have shown<sup>(6)</sup>.

"Many studies hypothesise that probiotics may influence immunity by altering specific immune parameters and play a beneficial role in human disease. Recent studies have shown positive results in the effects of probiotics in immune related disorders due to an increase in IgA-secreting cells<sup>(7)</sup>. Studies have also focused on children and the effects of probiotics on immune related disorders during the winter period with positive results, reducing missed days at school and decreasing the need of antibiotics<sup>(8, 9)</sup>."





## SUPPLEMENTATION – A GUIDE

So, when looking at incorporating a probiotic supplement into any recommended protocol, what factors should be considered in terms of the correct recommendation?

Braye explained: "When recommending a live bacteria supplement, it's important to consider the number and different types of strains in a product. The composition of everyone's microbiome is different, therefore, which type of probiotic will be most beneficial will depend on the specific individual and the health concern at hand.

"The following genera are the most well studied and have demonstrated potential human health benefits; *Lactobacillus*, *Bifidobacterium*, *Saccharomyces*, *Enterococcus*, *Streptococcus*, *Pediococcus*, *Leuconostoc*, *Bacillus*, *Escherichia coli*.<sup>12</sup> Multi-strain products have been found to be more effective at inhibiting pathogens than their component strains administered separately,<sup>13</sup> and as different strains exert their effects in different parts of the gastrointestinal tract, multi-strain products may be of benefit in a wider range of digestive conditions."

Be clear too about the labeling of products.

"As the effects of bacteria have been shown to be strain specific, strains should be clearly identified on the product. This includes listing not only the genera (for example, *Lactobacillus*) and species (for example, *acidophilus*), but also the specific strain number (for example, PXN35)," Braye commented.

She referred to colony forming units, and the importance of ensuring any product you recommend has an adequate amount.

"The degree of health benefits provided by live bacteria formulations varies in their ability to a) deliver viable, functional bacteria in large enough

numbers, (b) provide protection against the harsh effects of the gastric environment and intestinal bile, and (c) survive formulation processes.<sup>14</sup> Therefore, CFU (colony forming units) counts should be guaranteed at the date of expiry of a product's shelf life (not at manufacture)," she explained.

**"The composition of everyone's microbiome is different, therefore, which type of probiotic will be most beneficial will depend on the specific individual and the health concern at hand."**

"In addition, delivery mechanisms, such as enteric coated capsules or protective coatings applied to the bacteria itself, should be used to ensure that viable bacteria reach the intestines. There is often a misconception that refrigerated products are superior. However, with the development of new technology, such as lyophilisation (freeze-drying) and cryo-protection, shelf-stable products are now able to match refrigerated products for quality whilst providing consistency as to viability by the time the product reaches the shelf, as well as a more practical option for clients."

But Makolli added: "Many individuals believe that the best probiotic is the one with the most colony-forming units (CFUs) but current research does not suggest that more CFUs is better as research focuses on individual strains or a combination as opposed to CFUs. It is essential to look at the number of different strains a probiotic contains as each strain will have a slightly different function and these tend to be overall more effective compared to products which contain one to two strains. Keeping up to date with

current literature is essential to find out the correct recommendation for clients as each client will be unique and will require different strains or CFUs."

Dr Glenville advised testing may be needed.

"It would be helpful if the practitioner could organise a digestive stool test for the person as this will show the degree of dysbiosis and also whether yeasts and parasites are present, as well as looking at other factors of digestion," she explained.

"Probiotic supplements are very beneficial but, as practitioners, we need to be mindful of anyone with a compromised immune function and particularly in introducing soil-based organisms (SBOs). SBOs are not part of our resident gut flora, they are transient and although years ago we would have eaten food with soil on it or even as children they would have played in the dirt, our food now is almost free of these SBOs. So, if they are introduced in high quantities in a supplement there is the possibility they could become pathogenic."

Quality control measures should also be clear.

"I would suggest recommending a reputable brand that has billions of bacteria per capsule. Also, that it contains different strains and particularly the valuable strains of *Lactobacillus* (that reside in the small intestines) and *Bifidobacteria* (that reside in the large intestines). If it can also contain a prebiotic, that would be beneficial," Dr Glenville suggested. "I would suggest avoiding probiotic drinks as they may contain added sugar or a liquid probiotic that contains a preservative, sugar or artificial sweetener.

"Given the research that has emerged, I would avoid probiotics that contain maltodextrin as it is rapidly converted to glucose so has a high GI and 'contributes to the suppression of the intestinal antimicrobial defence mechanisms and may be an





environmental priming factor for the development of chronic inflammatory disease<sup>1</sup>.”

Braye added: “Quality assurance is very important when it comes to choosing nutritional supplements as there are many products of varying quality on the market. cGMP accreditation (current Good Manufacturing Practice) from the Medicines and Healthcare products Regulatory Agency (MHRA) shows that the manufacturer is meeting the same requirements to those manufacturing pharmaceutical medications and that their products are of consistent high quality, appropriate to their intended use and meet the requirements of the marketing authorisation or product specification. Independent ISOs, such as ISO 17025:2005, also evidence that a manufacturer has a laboratory accredited for testing and sampling. Manufacturers should also be able to produce fully documented Quality Assurance, HACCP (Hazard Analysis and Critical Control Points), health and safety and hygiene policies, if asked.”

Makolli added: “There are many factors to take into consideration when choosing a probiotic as this market is so saturated at the moment. It’s essential to pick a reputable probiotic brand which has been tested by a third party and that the probiotics come with a full strain identification and safety data. Clinical studies are essential when picking a probiotic as these ensure that the strain has been tested in a robust controlled study and has been fully reviewed prior to being sold. Always look at the CFU count with a potency claim at ‘end of expiration date’ versus the ‘at time of manufacture’ as many may not contain the same CFU count it did at the time of manufacturing.”

## RESEARCH FOCUS

There is constant research being published examining the effects of probiotics on a host of health areas.

“As the digestive system is such a complex unit, there are ongoing studies between probiotics and the role in inflammatory bowel disorders, with the possibility of probiotics play a critical role in new therapeutic approaches to IBD. Ongoing research is also focused on the link between inflammatory bowel disorder related colon cancer and the gut flora, with probiotics potentially being involved in the therapeutic strategy,” Makolli pointed out.

“There are also many ongoing studies in the field of gut flora and caesarean born children which focus on the change of balance in gut microbes. Another important focus is the link between the digestive system and the brain as recent studies have shown intestinal microbiota to play an important role in regulating the brain and subsequent behaviour<sup>(16)</sup>. Recent studies have shown probiotics positively impacted mood activity compared to placebo controlled<sup>(17)</sup>. These results provide first evidence that probiotics may help with health related disorders but further robust research is required to support these hypotheses.”

And Dr Glenville added: “Recent research has looked at the benefits of probiotics on relieving depression. In a RCT, twice as many adults with IBS who were given a probiotic reported improvements in depression compared to those taking a placebo. As well as the decreased depression score, Functional Magnetic Resonance imaging showed that the improvement in the depression scores was associated with change in those areas of the brain involved in mood control.<sup>1</sup>

“Other research is looking at how the gut microbiota may play a role in MS, an autoimmune condition where the immune system is attacking myelin. Researchers analysed the gut microbiome of MS patients and healthy controls and identified certain species of bacteria that were more or less common in MS patients compared to the general population. It is being suggested that the microbes could be make the disease progression worse or if someone has a genetic predisposition, could trigger the disease.<sup>1</sup>”

Hall added: “A big step forward into microbial research was reported recently; thousands of microbial communities have been newly identified. A group of researchers from Harvard T. H Chan School of Public Health, Broad Institute of MIT and Harvard and the University of Maryland School of Medicine assessed new samples from a diverse range of body sites and from multiple points in time. Their work was in published in the journal *Nature*, and may offer a greater understanding of which species make up individual microbiomes and how they communicate with human cells.”

McCusker continued: “There has been an explosion of research into SIBO and FODMAP foods over the past five years. One of the most recent publications is a meta-analysis that was published in *PLoS One* this year that looked at the therapeutic effect of a low-FODMAP diet on symptoms of IBS and quality of life in comparison to a regular, standard IBS diet with high FODMAP foods.<sup>(4)</sup> The analysis provided high-grade evidence of improved symptoms such as bowel function dissatisfaction and quality of life among patients with IBS who have followed a low-FODMAP diet compared to those on a traditional IBS diet.” ●



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# CHRONIC SYMPTOMS OF FATIGUE –

## SYNDROME OR DISEASE?



Continuing with our annual Mentoring Scheme, CNELM student, Michelle Halemai, discusses the reasons your clients could be suffering with fatigue.







There are many millions of people all over the world who suffer from severe, disabling fatigue, which may also include symptoms of musculoskeletal pain, sleep disturbance, impaired concentration, and headaches<sup>(1)</sup>.

These symptoms can signal a variety of abnormalities in a patient's health, some being easily tested and measured, while others less understood, controversial and even theoretic. In this report, I will be discussing the comparisons and controversy between Chronic Fatigue Syndrome (CFS) and Myalgic Encephalomyelitis (ME).

## DEFINITIONS OF CHRONIC FATIGUE SYNDROME

According to two widely used definitions, originating from the Centers for Disease Control and Prevention (CDC) in the US, and Oxford in the UK, the above mentioned symptoms may be characteristic of Chronic Fatigue Syndrome<sup>(1)</sup>.

Whilst each country's definition agrees on the majority of the criteria used as a guide to diagnosing this condition, there are, however, two important conflicting differences. The presence of mental fatigue is insisted upon by the British criteria, whilst several physical symptoms, that suggest an "underlying immunological or infective pathology", are included in the American criteria<sup>(2)</sup>. These very distinct differences would seem to describe two similar, but perhaps very different conditions, and could explain why CFS and ME are quite often used interchangeably, being referred to as the very same condition.

However, the National Alliance for Myalgic Encephalomyelitis in the US (NAME-US.org) state that CFS and ME should definitely not be confused as being the same condition, and such an error could even prove to be fatal to the sufferer of ME<sup>(3)</sup>.

It would seem that the precise cause of CFS is unknown and poorly understood, despite considerable research. In fact, there are a variety of factors that could be associated with increasing a patient's risk of developing CFS. Whilst a number of infectious illnesses, such as viral meningitis, Epstein-Barre Virus and Q Fever, have associated sufferers with a higher risk of developing CFS, a preceding virus is not obligatory, as many patients show no evidence of viral infection, persistent or otherwise.

As suggested by several case-control studies, a patient with previous psychiatric disorders and psychological factors is at a higher risk of developing CFS later in life, although once again, it is not a required criterion<sup>(1)</sup>. There are no known blood tests or brain scans that can definitively diagnose CFS, and whilst there has been no primary cause that can explain all cases of CFS, an accepted measure of diagnosis, according to all definitions, is that a patient must be suffering from symptoms of chronic fatigue, not induced by exercise, for a period of at least six months<sup>(9)</sup>. However, if ME is in fact a separate disease to CFS, then what implications could a delay of six months have on diagnosing a patient?

## HISTORY OF MYALGIC ENCEPHALOMYELITIS

The meaning of Myalgic Encephalomyelitis is 'brain and spinal cord inflammation with muscle pain'. 'Myalgic' (muscle pain) – 'Encephalo' (relating to the brain) – 'Myel' (relating to the spinal cord) – 'Itis' (inflammation)<sup>(3)</sup>. There have been more than 60 recorded outbreaks of the disease worldwide since 1934, and in 1978, these outbreaks appear to have been explained when the Royal Society of Medicine concluded that epidemic ME was a distinct

disease that caused Central Nervous System (CNS) dysfunction<sup>(4)</sup>, acquired from an organic base, such as Epstein-Barre Virus (EBV)<sup>(5)</sup>. However, when the CDC researchers investigated a cluster of the disease in Lake Tahoe, Nevada, in 1984, there was no sign of EBV detected, or was perhaps ignored in an attempt to avoid an outbreak of fear within the country<sup>(8)</sup>.

**"CFS is a syndrome characterised by symptoms of fatigue; ME is a disease characterised by acquired CNS dysfunction, resulting in inflammation and chronic symptoms of fatigue."**

This finding contradicted the criteria for ME, thereby resulting in a new disease being named; Chronic Fatigue Syndrome<sup>(6)</sup>. Therefore, history would suggest that if ME is only triggered by a virus, and CFS can be, but is not always, then they are not the same condition. By definition, CFS is a syndrome characterised by symptoms of fatigue; ME is a disease characterised by acquired CNS dysfunction, resulting in inflammation and chronic symptoms of fatigue.

Should a disease that results in inflammation of the Central Nervous System, the command centre controlling all voluntary and involuntary bodily functions<sup>(10)</sup>, be untreated for a period of six months whilst waiting for an uncertain diagnosis of CFS, then it would be logical to assume that the condition of a patient could be unnecessarily and very likely worsened<sup>(4)</sup>.

Dr John Greensmith explains that ME is, in fact, recognised as a neurological illness by the World Health Organization with currently no known physical cause, but is actually differently categorised from







Chronic Fatigue Syndrome.

"Bundling them [fatiguing illnesses] all together weakens any research experimental design, dilutes and distorts the findings, making it difficult, if not impossible, to generalise to any one particular illness and, therefore, hampers progress towards finding an appropriate treatment or cure for every one of them, packaged under the controversial umbrella term CFS, not just ME<sup>(13)</sup>," he said.

Throughout recent decades, there have been many different diseases, or varying names of the same disease or syndrome, that have fallen under the umbrella of CFS. These include not only ME, but also chronic fatigue immune dysfunction syndrome (CFIDS), post-viral syndrome, post-viral fatigue syndrome (PVFS), and Gulf war syndrome<sup>(8)</sup>.

## CONTRADICTIONS IN DIAGNOSIS

*Merriam Webster Dictionary* defines a syndrome as a group of signs and symptoms that occur together and characterise a particular abnormality<sup>(7)</sup>, although, according to NAME-US.org, the term syndrome is often used to describe a condition that cannot otherwise be explained by any known disease<sup>(3)</sup>. This would explain why the Foundation of Autoimmune research, The Marshal Protocol Knowledge Base, discusses how almost every aspect of CFS is subject to uncertainty and disagreement, even in its diagnosis, stating that "when symptoms are attributable to certain other conditions, the diagnosis of CFS is excluded"<sup>(8)</sup>.

Prolonged depression is often a common symptom of both CFS and ME, with various symptoms of depression, including a depressive mood daily, suicidal thoughts, feelings of guilt and worthlessness, a lack of interest and enjoyment in life, a considerable increase or decrease in weight, insomnia or excessive sleep, and

an inability to concentrate. However, diagnosis of CFS or ME will require a sufferer of chronic depression to equally suffer from physical symptoms, such as prolonged headaches, sore throat, non-exercise induced muscle aches, or fever, whilst having had all other diseases tested for and ruled out<sup>(9)</sup>.

## A FUNCTIONAL APPROACH TO TREATMENT

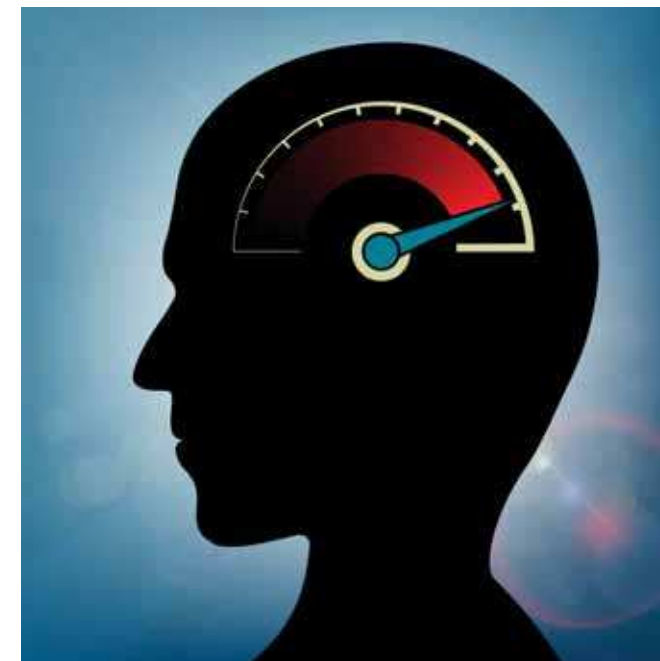
Without a known primary cause of both CFS and ME, there is no known cure or approved treatment, and is, therefore, extremely difficult for a Nutritional Therapist to treat the root of the problem.

Understanding that 'CFS is a heterogeneous disorder with diverse etiological factors and pathological features'<sup>(14)</sup>, possibly the most effective management of the condition is the use of nutrition and lifestyle in treating and managing the symptoms, whilst considering a functional, integrated body systems approach that contemplates the management of lifestyle, core imbalances, systems signs and symptoms, metabolic pathways or networks, and biomarkers<sup>(11)</sup>. There are several modifiable physiological and environmental factors that have been studied as being suspected contributors to CFS and ME, including 'Dietary and nutritional factors, physical fitness, psychological and physical stress, environmental pollutants, gastrointestinal disturbances, chronic infection, inflammation and oxidative stress, and mitochondrial dysfunction'<sup>(14)</sup>.

For the purpose of this article, dietary and nutritional factors will be focused upon, as well as the management and treatment of various symptoms.

## DIETARY AND NUTRITIONAL FACTORS

Although diet is known to be a powerful modifier of



chronic disease, investigations in to effect of diet on CFS and ME is lacking in comparison. With this lack of evidence, it is, however, plausible to suggest that a phytonutrient-dense, polyphenol-rich, Mediterranean type diet could improve mental state and physical fitness by countering functional impairments, such as oxidative stress and low-grade inflammation. It has also been reported that food sensitivities to gluten, wheat, lactose, nitrates, and food additives can exacerbate symptoms of chronic fatigue and other physiological symptoms of CFS and ME, such as joint soreness, headaches, sore throat, cognitive dysfunction, and recurrent fever<sup>(9,12,14)</sup>.

Functional nutrition is based upon a functional nutrition model, focusing on a patient-centred approach for detecting, and then correcting unique





nutritional imbalances using diet and nutritional supplementation to enable the restoration of a healthy physiological function. There are several functional nutritional deficiencies that have been identified in CFS and ME patients, and whilst supporting documentation of their efficacy is varying between studies, individualised nutrient interventions could prove to be very beneficial<sup>(14)</sup>.

**“Clinical evidence has shown that low levels of zinc have been linked to immunological dysfunction, low mood, and increased fatigue, inflammation and oxidative stress.”**

Vitamin D levels in CFS and ME patients have been found to be significantly lower than the general population, with one retrospective survey showing sufferers with a mean of 44.4 nmol/L compared with optimal levels >75 nmol/L. This may be explained by the association that a vitamin D deficiency has with inflammation and oxidative stress, both contributing factors to CFS and ME<sup>(14)</sup>.

B vitamins are required for healthy skin, hair, eyes, liver and nervous system function, as well as in the conversion of carbohydrates into glucose and the metabolism of fats and proteins<sup>(16)</sup>. Several vitamin B deficiencies have been reported in CFS and ME patients, including pyridoxine, riboflavin, thiamine, and serum folate, as well as elevated levels of homocysteine in the cerebrospinal fluid, which is a functional marker of vitamin B12 deficiency. In randomised trials, positive effects on fatigue have been shown treating CFS and ME patients with nicotinamide adenine dinucleotide (NADH), the active

form of niacin, as well as the supplementation of vitamins B12 and folate<sup>(14,15)</sup>.

It has been hypothesised that the biosynthetic pathway for long-chain polyunsaturated fatty acids (PUFAs) may be impaired by the viral infection that could have triggered CFS or ME, which will in turn have consequences on the functionality and structure of the Central Nervous System. Supporting this hypothesis are several clinical trials that have observed improved symptoms with the treatment of fatty acids, such as -linolenic acid (GLA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA), including improvements in brain structure<sup>(14)</sup>.

Low magnesium levels have been described in some sufferers of CFS and ME, with intravenous supplementation, showing reductions in pain and improvements in emotional state and energy levels<sup>(14)</sup>.

Amino acid supplementation has been shown to dramatically improve symptoms of CFS and ME. This may be due to the requirement of various amino acids in neurotransmitter synthesis and the production of adenosine triphosphate (ATP)<sup>(14)</sup>. Whilst studies relating to amino acids supplementation to the benefit of CFS and ME symptoms are few, the potential is very interesting and requires more research<sup>(14)</sup>. The amino acid carnitine plays a crucial role in mitochondrial energy production. Supplementation of carnitine for patients of CFS and ME with deficiencies has shown beneficial effects on fatigue, cognitive functions and pain<sup>(14,17)</sup>.

Clinical evidence has shown that low levels of zinc have been linked to immunological dysfunction, low mood, and increased fatigue, inflammation and oxidative stress. This could explain why many CFS and ME sufferers have significantly low levels of serum zinc, and why supplementation could improve

symptom severity and immunological function<sup>(14,17)</sup>.

## MANAGEABLE SYMPTOMS

### Sleep problems

Patients with both CFS and ME will often remain unrefreshed after sleep, have difficulty in falling and remaining asleep, experience extreme drowsiness, restless legs and muscle spasms, and may also complain of intense and vivid dreaming. Creating a regular bedtime routine can help to improve sleep quality. This may be achieved by:

- Creating a lengthened winding-down and calming period before sleep time.
- Trying to go to bed and wake up at the same time each day.
- Should daytime naps be necessary, trying to limit them to a total of 30 minutes throughout the entire day.
- Removing all electronic gadgets from the bedroom.
- Avoiding using the bed for leisure activities, such as watching TV or listening to music.
- Making the sleep environment as relaxed as possible, with a comfortable temperature, fresh sheets, and by limiting noise and light.
- Avoiding the consumption of food, caffeine, and alcohol before bed.
- Avoiding exercise during the four hours prior to bedtime<sup>(9,12)</sup>.

### Pain

Sufferers of CFS and ME may complain of pressure-like headaches, deep muscle and joint aches and pains, and a feeling of soreness when the skin is touched.

Other than using prescription or even non-prescription painkillers that will only mask the symptom, a CFS and ME patient may benefit from





gentle massage, water therapy, light stretching and movement therapies, as well as acupuncture performed by a licensed practitioner<sup>(9,12)</sup>.

### Depression, stress, and anxiety

These symptoms can be present before developing CFS and ME, or can be a result of the sickness due to a difficulty in adjusting to such a chronic and debilitating illness.

Depression, stress and anxiety can isolate a patient from their normal surroundings, exasperating their condition, and can even be the root of suicidal thoughts, and should, therefore, always be treated. Antidepressants and anti-anxiety medications prescribed by doctors can cause side effects that worsen the symptoms of CFS and ME. Other methods of treating depression, stress, anxiety and promoting a sense of wellbeing can include deep breathing and muscle relaxation, gentle massage, water therapy, light stretching and movement therapies (such as yoga, pilates, and t'ai chi), as well as acupuncture performed by a licensed practitioner.

A mental health professional must be promptly recommended should these approaches not improve the patient's state of mind<sup>(9,12)</sup>.

### Orthostatic intolerance resulting in dizziness and lightheadedness

For some sufferers of CFS and ME, symptoms of orthostatic intolerance can be triggered or worsened by standing or sitting upright. The symptoms of orthostatic intolerance can include lightheadedness and dizziness with blurred vision and seeing spots, a feeling of weakness, and a fluttering of one's heart or the feeling of 'skipping a beat'.

A patient with these symptoms should have their



blood pressure and heart rate checked and should be recommended to see a cardiologist or neurologist. Should the specialist confirm no sign of heart or blood vessel disease, then suggesting the patient increases their daily fluid and salt intake to increase hydration, with the retaining of water in the muscles, can improve these symptoms<sup>(9,12)</sup>.

### CONCLUSION

Whilst the precise source causing CFS and ME continues to elude the medical profession, diagnosis and treatment remains controversial and at times, hypothetical, yet patients continue to suffer. Managing the symptoms with changes in lifestyle and diet can only improve one's state.

A patient-centred, integrated functional nutritional approach has shown to provide promising results in reducing chronic symptoms and more research in this area has potential in offering hope to CFS and ME sufferers. ●



MICHELLE HALEMAI has worked as a Fitness Professional for the last 25 years. She is a third year student of Bachelor of Nutritional Science HONS (specialising in Nutritional Therapy) with CNELM via Middlesex University, in London.





# The gold standard

**The time is upon us when we honour those brands demonstrating product excellence – and we need your votes.**

**T**he *Nutrition I-Mag* Product Awards are held each year with the express aim of recognising and honouring product excellence.

Over the following pages, we are excited to reveal to you all those products in the running for one of our awards, across various categories.

And then it is up to you; we want to hear from you, our readers, about what products you would like to see win one of our awards and why. There is no set reason as to why you need to like a product, it could be because you like the brand, you believe the formulations are superior, or it is particularly innovative.

Whatever your reason, we want your vote. All you need to do is simply click on the form over the page or log onto [www.nutritionimag.com](http://www.nutritionimag.com)

Keep an eye out for the Jan/Feb issue, where we will be revealing the winners.





# Nominate now!

## Honouring product excellence

### BEST ALTERNATIVE PRODUCT/ SERVICE

**A Nelsons** – Spatone Apple

**Nap 4EU** – SWAMI

**Nucleotide Nutrition** – Nutri-tide NT

### BEST NEW PRODUCT

**Cambridge Nutritional Sciences** –  
Adrenal Function Profile

**Probiotics International** – Lepicol  
Lighter

**Salt of the Earth** – Pure Armour: Explorer

### BEST VMS

**Hifas Da Terra** – Mico-Rei

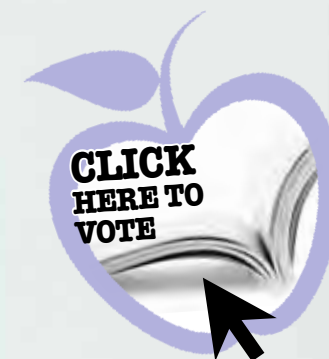
**Higher Nature** – Keep Sharp

**Kinetic Enterprises** – Amazing Grass Raw  
Reserve

**Nutri Advanced** – Ultra Probioplex ND  
Capsules 60 Caps

**Probiotics International** – Bio-Kult

**Rio Health** – Epigenar



## BEST ALTERNATIVE PRODUCT/SERVICE



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### Nutri-tide® NT – harnessing nucleotide power

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Contact: [rachel.hoyle@nucleotidenutrition.com](mailto:rachel.hoyle@nucleotidenutrition.com) & visit [www.nucleotidenutrition.com](http://www.nucleotidenutrition.com).

Tel: +44 (0)1299 405485

# BEST ALTERNATIVE PRODUCT/SERVICE





## BEST NEW PRODUCT



### New Adrenal Function Profile available from CNS

Cambridge Nutritional Sciences have recently launched their new functional test; the hugely popular Adrenal Function Profile. This adrenal screen requires a convenient saliva sample collection, taken at 5 intervals throughout the day, thus enabling a more precise analysis of an individual's 24-hour cyclic cortisol concentration. Importantly, this also helps to accurately pinpoint the significant cortisol surge, which should assist practitioners in giving more personalised support to their clients. This particular test also includes morning and afternoon DHEA measurements, allowing the hugely significant Cortisol/DHEA ratio to be identified.

.....  
Contact Cambridge Nutritional Sciences on 01353 863279 or [nutrition@camnutri.com](mailto:nutrition@camnutri.com) for more information.



### Live Life Lighter

Gaining extra pounds isn't always down to over consumption or lack of exercise. In fact, the bacteria in our guts can have a huge influence on what we crave and how much weight we gain. Lepicol Lighter is a new scientifically developed, natural food supplement which could assist your clients' weight loss journey. It contains glucomannan, which in the context of an energy-restricted diet can contribute to weight loss. While chromium can help maintain blood glucose levels and 7 strains of live bacteria keep the gut healthy.

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# BEST NEW PRODUCT



## BEST VMS PRODUCT



### Mico-Rei - Reishi Mushroom Extract by Hifas Da Terra

Mico-Rei is a highly concentrated organic anti-ageing extract of the reishi mushroom. Known in the far east as the "immortality mushroom" and in China it has been used as a medicine for more than 20 centuries. Reishi is an adaptogen with strong anti-inflammatory and antioxidant properties, capable of aiding a number of health issues, such as menopause, anxiety, insomnia, eczema, psoriasis, arthritis and many more. The reishi mushroom potentiates the immune system and has strong antiviral properties acting against wide range of viruses such as influenza or herpes simplex. Organic and GMP certified, gluten free, suitable for vegans.

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For more information or to place an order email [sales@kinetic4health.co.uk](mailto:sales@kinetic4health.co.uk) or call 08450 725 825

# BEST VMS PRODUCT

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## BEST VMS PRODUCT



### Ultra Probioplex ND Capsules 60 Caps

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For more information, visit [www.nutriadvanced.co.uk](http://www.nutriadvanced.co.uk)



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For more information, visit [www.bio-kult.com](http://www.bio-kult.com)



### epigenar® Curcumin Forte Micelle Form for Maximum Uptake and Highest Bioavailability

The micellar liquid form used for epigenar® Curcumin Forte gives the highest bioavailability, with maximum uptake as validated by reputable research. Micellar curcumin is 185 times more bioavailable than standard powder and is more bioavailable than micronized or liposomal forms. One capsule contains 30mg micelle curcuminoids, equivalent to approximately 5.5 grams of pure curcumin. The liquid caps contain curcumin in a form that is both water and fat soluble, as well as pH stable. The micellar form is well tolerated and the specialised capsules protect against gastric acid.

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# EXPERT ADVICE

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



# Q

I am seeing more research emerge around the use of vitamin K2 and circulatory health – can you detail the benefits of this vitamin, and offer advice on form that should be recommended?

## FRANKIE BROGAN EXPLAINED:

Vitamin K2 is rising in popularity as a supplement because there's a real need for it. Vitamin K1 (found in green leafy vegetables) is easy to find in the diet, but K2 is relatively low in western diets. The main sources are fermented foods, such as Japanese Natto.

K2's main role is that it activates (or carboxylates) two vital proteins in the body; matrix gla protein (MGP) and osteocalcin (OC). In summation, these proteins are responsible for correctly transporting calcium (from diet or supplements). MGP helps ensure that calcium does not adhere to soft tissues, such as arteries, which would result in calcification (a hardening of the arteries that elevates cardiovascular disease risk). Meanwhile, OC is used by bone-building osteoblast cells; cells that take free roaming calcium from the blood and deposit into the bone matrix, supporting bone density and strength.

Years ago, if a person wanted to look

after their bone health, the first nutrient they would think of would be calcium. Lately, we've realised that vitamin D is also important as it helps calcium absorb into the blood. Vitamin K2 seems like the final piece in the 'bone health triangle' as it ensures that calcium benefits the body (such as aiding bone health and keeping blood vessels flexible), rather than inadvertently doing harm via calcification.

There is a lot to be said about the form of vitamin K2 one should be taking, but modern research is certainly pointing to one form in particular. Vitamin K2 MK-7 has demonstrated various benefits over the traditional MK-4 form, including better carboxylation rates of MGP and osteocalcin, better absorption, improved elevation of vitamin K levels and lasts longer in the body (a better half-life). There's also different ways of producing MK-7 and that's important to consider as well.

K2 MK-7 produced from fermentation (say, from chickpeas or natto) tends to

produce a vitamin that is partially inactive. That is to say that some of the vitamin is present in its 'cis isomer' form. Only the 'trans isomer' form is able to activate the key proteins needed for bone and circulatory health. K2 MK-7 produced via organic coupling processes usually meet this, boasting high levels of trans isomers (up to and including 100 per cent).

Finally, much like vitamin D, vitamin K2 is a fat soluble vitamin. Capsules containing oil help ensure that the vitamin is absorbed well in the digestive tract, so this would always be my recommendation.

## THE EXPERT



FRANKIE BROGAN has spent more than 10 years working in the nutrition and wellness industry, including clinics, private consultancy and health stores. In his academic career, he's specialised in study and research into various aspects of nutritional supplementation, including clinical, public health, sports and exercise. As an Associate Registered Nutritionist (AfN), Frankie takes an ethical, practical and evidence-based approach to nutrition and wellness. He is Senior Nutritionist at Pharma Nord.

CLICK FOR MORE QUESTIONS



Q

I am seeing an increase in women with poor lifestyle who have recurrent UTIs – can you explain why this is the case and the kind of dietary and lifestyle protocol I should be recommending to clients experiencing this problem?

**HANNAH BRAYE ADVISED:** Urinary Tract Infections (UTIs) are infections of any part of the urinary tract causing inflammation. Lower UTIs are commonly known as cystitis, whereas upper UTIs are known as pyelonephritis. In more than 80 per cent of cases, they are caused by the overgrowth of the bacteria *Escherichia coli* (*E.coli*),<sup>1</sup> originating from the digestive system or vagina. *Enterobacteriaceae* infections are also common in children.<sup>1</sup> Infections from the digestive system are most common,<sup>2</sup> as the pathogenic bacteria that take a foothold in the gut are able to move easily from the anus to the urethra, especially in women.

An estimated half of all women in the UK have at least one UTI in their life-time, with 25 per cent having recurring episodes.<sup>3</sup> The high prevalence may be due to a number of factors, such as poor diet, high stress, increased sexual activity with new partners, and hormone imbalances.<sup>4</sup> Patients suffering from symptomatic UTIs are also commonly treated with antibiotics. These treatments can result in long-term alteration of the normal microbiota of the vagina and gastrointestinal tract and in the development of multidrug-resistant microorganisms and uropathogens,<sup>5</sup> increasing the risk of reoccurrences.

Diet and lifestyle factors can certainly play a part in the occurrence of UTIs. Those eating a typical Western diet tend to consume high amounts of refined carbohydrates from grains. Animal nutritional research has shown that when cattle are fed a high-grain diet, sugars released from starch will favour certain *E. coli* strains.<sup>6</sup> In addition, diabetes sufferers have been shown to be at an increased risk of UTIs,<sup>7</sup> implicating poor blood glucose regulation in the pathogenesis. Focusing any dietary intervention on

reducing sugar and refined carbohydrates in the diet is therefore a good starting point.

Studies have also shown that those suffering from UTIs tend to consume less fresh fruit and unsweetened berry juices than those without UTIs.<sup>8</sup> Flavonols, such as epicatechin and proanthocyanidins (PACS) (specifically type A), which are abundant in berries such as cranberries, are able to block bacterial adhesion to uroepithelial cells.<sup>9</sup>

Dietary intervention to support the immune system is also recommended. The urinary tract is constantly exposed to microorganisms which inhibit the gastrointestinal tract, but generally resists infection due to the versatility of its innate immune defences.<sup>10</sup> Malnutrition associated with a deficiency of protein, vitamins and minerals has been shown to cause a decline in immune functions and results in susceptibility to infection.<sup>11</sup> Increasing fruit and vegetable intake and ensuring good quality protein is, therefore, advisable. Both physical and mental stress can also disturb function,<sup>11</sup> so working on stress reduction techniques with clients is key.

The composition of our gut and vaginal microflora plays a pivotal role in modulating the immune system and protecting against pathogens. Frequent consumption of fermented milk products containing probiotic *lactobacilli* have been shown to protect against UTI recurrences,<sup>8</sup> and probiotics have been shown to restore the gut and vaginal microflora.<sup>12</sup> Encouraging clients to incorporate fermented foods, such as sauerkraut, kimchi, live organic yoghurt and kefir into the diet and supporting the microbiome through a good quality probiotic supplement may therefore be of benefit. Certain strains

of bacteria, such as *Lactobacillus acidophilus* PXN 35 and *Lactobacillus plantarum* PXN 47 have been shown in vitro to significantly inhibit *E.coli* and *E.faecalis* growth.<sup>13</sup> Look for a minimum of 36mg proanthocyanidins (PACS containing A-type) and vitamin A, which contributes to the normal function of the immune system and the maintenance of mucous membranes.<sup>14</sup>

Along with the above dietary and supplement recommendations, clients should be advised to refrain from sexual intercourse during infection, ensure sufficient water intake and completely void the bladder when urinating. Both partners should be encouraged to practice good hygiene, and vaginal irritants, such as personal care products, tampons, diaphragms and spermicides may need to be avoided. Some women also find avoiding tight fitting clothing and wearing breathable natural fibres to be of benefit.

CLICK FOR MORE QUESTIONS



## THE EXPERT



Hannah Braye NT, DipCNM mBANT, CNHC is a qualified Nutritional Therapist, having studied at the College of Naturopathic Medicine (CNM), where she graduated with an award for outstanding performance. She is a member of the British Association of Applied Nutrition and Nutritional Therapy (BANT) and listed on the Complementary and Natural Health Care Council (CNHC)'s approved accredited register. She is a Technical Advisor at Probiotics International (Protexin), manufacturers of the Bio-Kult and Lepicol ranges, and runs her own nutritional therapy business, Fine Feather Nutrition, working with clients to help them meet their health goals.

Q

Can you detail the mechanisms by which resveratrol can be recommended in terms of its anti-ageing ability?

**PENNY SHAW EXPLAINED:** There are many theories of ageing, such as those related to telomere length, mitochondrial function, cell membrane permeability, calorie restriction, inflammation and oxidation. It's likely that there is an overlap of causes that contribute and therefore, a natural holistic approach is likely to support in the prevention of premature ageing.

Resveratrol is a polyphenol most known for its presence in grape skin and, therefore, red wine. Resveratrol's effects against ageing may be linked to quite a few of these examples, including oxidation, calorie restriction, mitochondrial biogenesis and more. It is most known for its roles in protection against neurodegeneration by inhibiting amyloid beta and tau protein aggregation and hyperphosphorylation. Amyloid beta are proteins that can clump together surrounding nerve cells, which are implicated in Alzheimer's disease, and tau proteins are populated predominately in neurons within the central nervous system.

Sirt is an anti-ageing gene, which is triggered by NAD<sup>+</sup>. Sirt proteins are encoded by the SIRT1 gene that regulate age. This protein cannot work on a high calorie diet and so forms part of the calorie restriction theory of ageing. A meal high in glucose will make lots of NADH out of NAD<sup>+</sup>, using up NAD needed for the sirt gene. Calorie restriction increases production of NAD<sup>+</sup> and ultimately activates sirtuin enzymes. These sirtuin enzymes are related to longevity through their ability to control gene expression of

sirt proteins. Resveratrol has a similar effect in that it also stimulates production of these sirtuin enzymes. A protein can be inhibited if joined with acetyl-coa, which is ageing to the body. Sirt proteins work by taking off the acetyl-coa and allowing the protein to function again, which is the anti-ageing effect of sirt proteins (deacetylation). Resveratrol works by making deacetylation much easier.

A major theory surrounding ageing is that of mitochondrial function. Mitochondria are energy factories within cells, which are abundant particularly in muscle tissues such as in the heart. Resveratrol increases PGC-1alpha enzymes, which are vital for mitochondrial health.

There are many more mechanisms by which resveratrol works to protect the body, including the ability to help increase both insulin sensitivity and neuroprotective antioxidant enzymes. Resveratrol has also been found to be protective against hearing loss.

Resveratrol is often used with quercetin, another flavonoid. This synergistic pair works well to help in the reduction of fat tissue.

## THE EXPERT



Penny Shaw, BA Student of Nutritional Therapy at CNM, BANT, is Head of Development at G&G Vitamins.





# IHCAN 2018 awards



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# Leading the way in nucleotide nutrition



**Nucleotide Nutrition** leads the way when it comes to specialising in these “neglected” nutrients. Here, founder, Rachel Hoyle (*pictured*), tells us more about her discovery, and why nucleotides are critical for practitioners to understand.



Rachel Hoyle believed that nucleotides were the missing and neglected nutrients in human ill health. It happened that the Swiss nucleotide pioneer, Dr Peter Koeppel, held the same view and together, the pair set about making these more widely available to the practitioner market.

This led to Rachel founding Nucleotide Nutrition Ltd (NNL) back in 2011, fuelled by her drive to see these micronutrients, nucleotides, accepted as conditionally essential by experts in the human health market.

“The formation of NNL followed 20 years of researching and developing the market for nucleotides in animal health,” Rachel explained. “The more we understand about the roles nucleotides play – particularly in areas of the body with rapid cellular turnover rates, most notably the gut mucosa, the gut microbiome and the immune system – the more we realise that nucleotides may not just be ‘conditionally essential’, but essential for most of us, most of the time.”

Since then, the company has developed three products within the Nucleotide Nutrition brand, namely consumer supplements, IntestAid IB for digestive health, and NuCell IM for immune health and stress, and practitioner therapeutic supplement Nutri-tideNT. NNL has also launched a new brand for the sports market, nnnSPORT, aimed at serious athletes.

“For the health practitioner market, the top selling product is Nutri-tideNT, containing therapeutic levels of the Nutri-tide formula with no added vitamins or amino acids, allowing the HP to include nucleotides without altering their



clients’ existing protocols with respect to vitamin and amino acids levels,” Rachel explained.

Under the nnnSPORT brand, there is X-Cell, which supplies the Nutri-tide formula blended with selected vitamins and amino acids that enhance immune and digestive health, and improving energy and recovery.

Within the business, there are leading experts when it comes to nucleotides. For example, Dr Koeppel is an immunologist, biochemist, and internationally respected pioneer of nucleotide supplementation. Then there is Rachel, a product development expert, with specialist knowledge of nucleotides and their influence on health matters.

## A NUCLEOTIDE DISCOVERY

Rachel herself was convinced of the importance of nucleotides, and the collaboration with Peter was an obvious one.

“Back in the noughties, following internal research into the nucleotide content of different foods, Dr Koeppel, with his Swiss company ProBio,



established Nutri-tide, a proprietary formula containing a scientific balance of all five of the main dietary DNA and RNA nucleotides, the composition of which was designed to overcome dietary deficiencies and intensive stress conditions," she explained.

"The collaboration between Peter Koeppel and myself found UK grant funding for investigative clinical trials to test these nucleotide supplement formulations and the mid 2000s securing two major research grant awards, which financed a range of clinical trials for the Nutri-tide nucleotide formula-based food supplements, IntestAid IB and NuCell IM – and with such significant results emerging, we have never looked back!"

So, what was it about nucleotides that Rachel found so powerful when it comes to human health?

"The intestinal tract has the highest rate of cellular turnover in the body, this rate being greater during periods of infection

or when the gut mucosa has been damaged and is in need of repair. Additionally, the 100 trillion or so microbes that make up the gut's microbiome turn over even more rapidly, and have an insatiable requirement for nucleotides to build RNA and DNA within the nucleus of every new cell," she explained.

Research has shown that across the species, supplementary nucleotides enhance the height of the villi, reduce lesions, and increase the surface area of the gut mucosa. A most prominent effect is on the *bifidobacteria*, which are fully dependent on the adequate supply of dietary nucleotides to proliferate. Additionally, protein formation requires vast numbers of nucleotides. There is approximately 1,000 times more RNA in a typical cell than DNA, most of it present as messenger (mRNA), transfer (tRNA) and ribosomal (rRNA) RNA, with the all-important mRNA carrying the information for the protein synthesis."

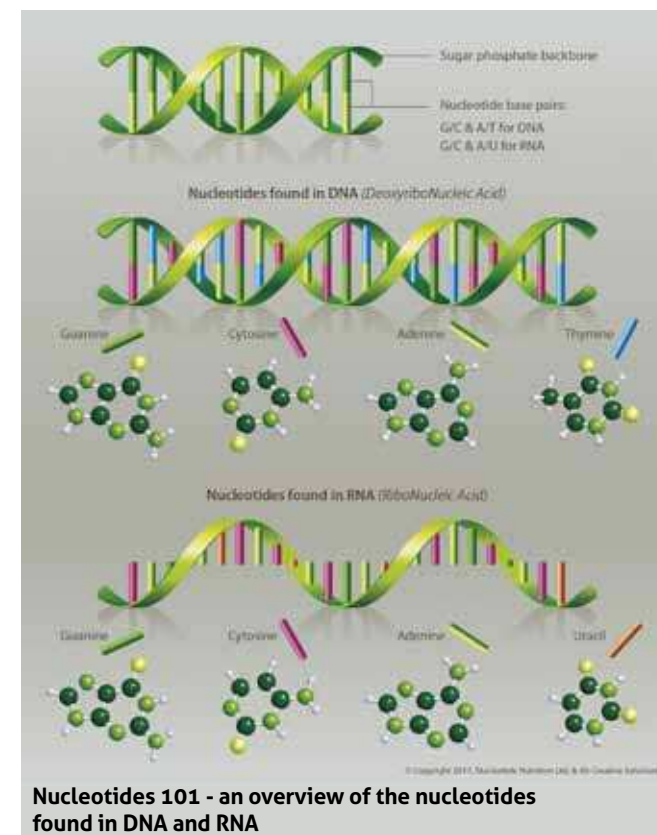
The portfolio at NNL offers a unique point of difference in that it offers the only supplements on the market that provide all five nucleotides that are required for cellular replication.

Rachel added: "They do not target just one symptom, since nucleotides are nutrients that are fundamental to many of the body's biological processes and overcome modern dietary deficiencies."

And as a brand, it boasts superior quality.

"We are quality, and research and development led, with every batch of product checked by the manufacturer to ensure conformity, and our products provide dose levels consistent with those used in their respective clinical trials," Rachel explained. "Our nucleotides are extracted from food grade yeast cells and the products are produced to the highest quality in GMP quality control facilities. No yeast cells are carried over from the extraction. Each batch is analysed to ensure that the nucleotide content is as declared."

She added: "It is important to stress all of the supplements provide all the required nucleotides in the ideal ratio, and in a biologically ready-available form, unlike other more crude



forms of yeast/yeast extracts. Two of the products, Nutri-tideNT and nnnSPORTX-Cell are supplied as powders that can be dissolved into water, which is indicative of its purity.

"nnnSPORTX-Cell is even covered by the WADA prohibited substances registration scheme, Informed-Sport, which means that sports men and women who are regularly tested by their sports bodies can have peace of mind."

Practitioners are a fundamental part of the business, and an area Rachel is committed to.

She explained: "Practitioners are key for us because we are pioneers of a new type of nutrients. They are able to take our







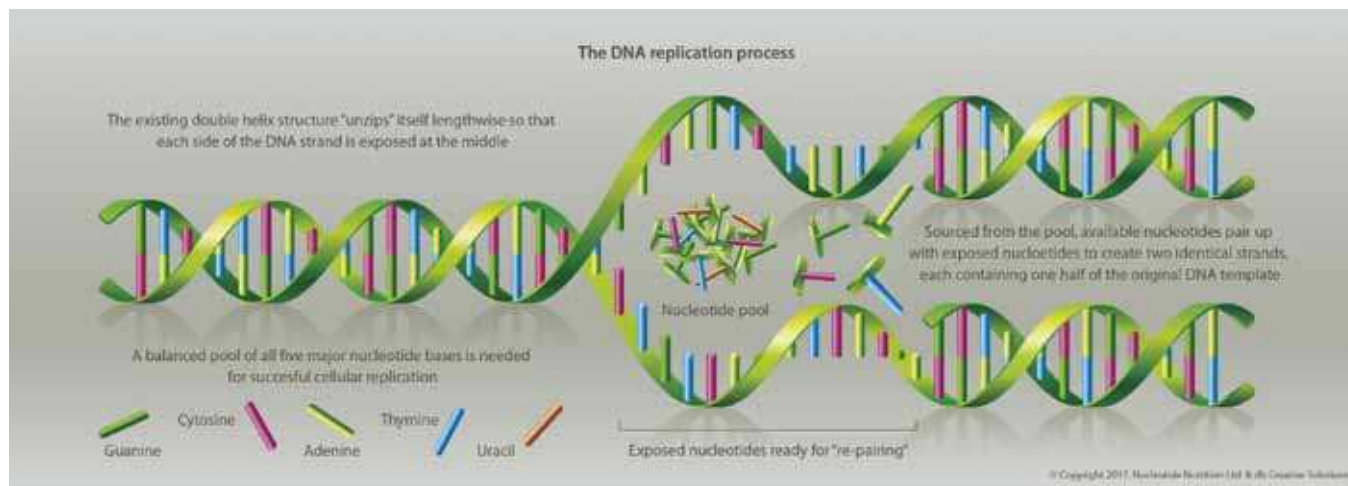
technical information and trials data and understand the implications of using the supplements for their clients. The general consumer is unlikely to understand what nucleotides are – at least not yet! This is despite the fact that nucleotides are supplemented into infant formula to mimic mother breast milk.

“Nucleotide Nutrition supports practitioners by providing extensive research, case studies and technical back-up. The support comes from highly experienced staff who have in depth knowledge of nucleotides and also health i.e., Dr Peter Koeppel and me.”

## PRODUCT FOCUS

So, what exactly does the Nucleotide Nutrition range involve? And why are these products something you could be recommending?

Let's start with Nutri-tide NT, which launched to the practitioner trade in early 2015.



### How readily available nucleotides are essential for new cell production

Rachel explained: “This supplement contains therapeutic levels of the unique nucleotide formula (50 per cent nucleotides) combined with the functional carriers, betaine, D-ribose, and malto-dextrin. Without the additional vitamins and amino acids as found in the IntestAid IB and NuCell IM consumer products, practitioners are able to slot Nutri-tide NT easily and directly into their existing patient protocols. The development of this product, and use of it by influential health practitioners with their clients, led to BANT requesting a generic nucleotide webinar, which was aired in April 2015.”

In 2016, the company decided to launch a supplement dedicated to the sports market.

“It was a decade between the publication of our first sports exercise clinical study pertaining to high intensity exercise stress (McNaughton *et al.*), and the release of the latest study testing athletes with our unique nucleotide supplement, under a resistance stress exercise regime (Sterczala *et al.*), that we decided to dedicate a new brand to the sports market, nnnSPORT [nnn = Nutri-tide nucleotide nutrition].”

Also in 2016, advances in biologically available forms of folic

acid/folate enabled a change to the IntestAid IB, NuCell IM and nnnSPORTX-cell formula, replacing the synthetic form of folic acid with Quatrefolate, the recently EFSA approved and much heralded glucosamine salt of (6S)-5-methyltetrahydrofolate.

Rachel explained: “Quatrefolic completely bypasses the ‘damaged’ MTHFR conversion step and delivers a ‘finished’ folate the body can immediately use without any kind of metabolism.”

The company is also spreading its reputation worldwide and has established links with new distribution partners now in the US, Germany, Poland, and Mexico.

Looking ahead, further development is a certainty as the company continues to spread the message about nucleotide nutrition.

“For the near future, NNL is now forging new collaborations to expand further into the health practitioner market. Discussions are under way with a leading manufacturer with the intention of expanding this company’s supplement line for health practitioners with inclusions of the Nutri-tide formula,” Rachel revealed. ●



The NNA supports a naturopathic approach to nutrition. We offer the personal touch, providing information, guidance and support to practitioners, students and the public.

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**The Federation of Nutritional Therapy Practitioners**

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# CPD DIRECTORY

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

## BANT Supervision Group

October 25 – Manchester

CPD hours: BANT two hours

Speakers: Dalbinder Bains

Cost: £30

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

## Review of Popular Functional Tests

October 26 – Bingham

CPD hours: BANT two hours

Speakers: BANT LNC, Eva Humphries

Website: [bant.org.uk/members-area/bant-local-networks/local-network-coordinators-list/#Eva\\_Humphries](http://bant.org.uk/members-area/bant-local-networks/local-network-coordinators-list/#Eva_Humphries)

## BANT Supervision Group

November 9 – Totnes

CPD hours: BANT two hours

Speakers: Elizabeth Bray

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Elizabeth\\_Bray](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Elizabeth_Bray)

## BANT Supervision Group

November 10 – Woolpit

November 20 – Colchester

CPD hours: BANT two hours

Speakers: Fiona Mealing

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Fiona\\_Mealing](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Fiona_Mealing)

## BANT Supervision Group

November 13 – London

November 14 – London

November 17 – London

November 20 – London

November 24 – London

CPD hours: BANT two hours

Speakers: Lisa Patient

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Lisa\\_Patient](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Lisa_Patient)

## BANT Supervision Group

November 13 – online

November 15 – Shoreham-by-Sea

CPD hours: BANT two hours

Speakers: Carmel Buckley

Cost: £30

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

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

## BANT Supervision Group

November 17 – Farnham

CPD hours: BANT two hours

Speakers: Ruth Taylor

Cost: £30

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

## BANT Supervision Group

November 17 – St Albans

CPD hours: BANT two hours

Speakers: Paula Werrett

Cost: £30

Website: [bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Paula\\_Werrett](http://bant.org.uk/members-area/bant-supervision/meet-the-supervisors/#Paula_Werrett)

## BANT Supervision Group

November 17 – Chesham

CPD hours: BANT two hours

Speakers: Tracey Harper

Cost: £30

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





## Forthcoming webinars...

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



Organised by the  
IHCAN Conference Team



### Parasite Problems, Protocols and Prevention: Natural Therapies



Presented by Rose Holmes, Nutritionist, BSc Dip. ION, PGCE  
Tuesday, November 7, 6.30pm-7.30pm

Parasites are much more common than most people realise. Many of the symptoms of parasitic infection can be mistaken as those for other conditions and, since they associate with common gut symptoms, may go undiagnosed, manifesting as food allergies, Leaky Gut Syndrome, skin issues and other issues, including psychological issues. Parasitic infections also have direct connection with toxicity issues.

This webinar will discuss types of parasite and some common parasitic infections, clinical indications of parasites, direct connection between parasites and other microbial infections, bacterial, viral, fungal, and connection with specific illnesses, for example, Babesia and Lyme disease

It will also discuss testing, when to suspect parasites and who is at risk, the link between parasitic/microbial infection and toxicity, importance of supporting clients through the cleansing process, natural anti-parasitics, protocols to address parasite infection and prevention strategies.

### Biome Depletion and Restoration in Chronic Inflammatory and Allergic Disorders



Presented by Judith Chinitz MS MS CNC  
Tuesday, November 21, 6.30pm-7.30pm

The rates of autism, autoimmune illnesses and allergies continue to escalate throughout the industrialised world. There is growing evidence that many of these conditions are caused by the loss of exposure to many of our commensal organisms. Improved hygiene, water purification and our ubiquitous use of toilets have contributed to the depletion of our intestinal organisms, both microbiotic (ex. probiotic bacteria, which most people are quite familiar with now) and the lesser-known macrobiotic (i.e. helminths ((intestinal worms))).

Macrobiotic animals live in all mammals on the planet, except for humans in industrialised countries, where the rates of these immune-mediated illnesses have sky-rocketed in the last few decades. Research from leading universities shows that restoring our internal ecosystem with benign helminths may lead to a more regulated, less inflammatory immune response.

### *Saccharomyces boulardii* – a key probiotic in clinical practice



Presented by Joanna Scott-Lutyens BA(Hons) NT DipION  
Tuesday, December 5, 6.30pm-7.30pm

Join Nutritional Therapist, Joanna Scott-Lutyens, for an informative discussion of the clinical research behind this unique probiotic yeast, and how it can be applied in practice.

### Did you miss our 2017 series of IHCAN Conferences?



Demand for the 2017 IHCAN Conference Series has led to the final event of this year being completely sold out.

With a total of 15 expert speakers presenting cutting-edge research on six topics in the field of nutrition and functional medicine, during 2017, the IHCAN Conferences are designed for you.

If you missed out on any of the IHCAN Conferences from 2017, you can purchase the post-show downloads from each event for only £50 (inc VAT) each.

Post-show downloads include access to the video, presentations and audio – all available to download to your PC, Mac or mobile device and enjoy from the comfort of your home while still receiving the CPD hours.

Purchase them today [here](#), or by calling the team on 01279 810080.

# GOOD FOOD FOR THE SOUL

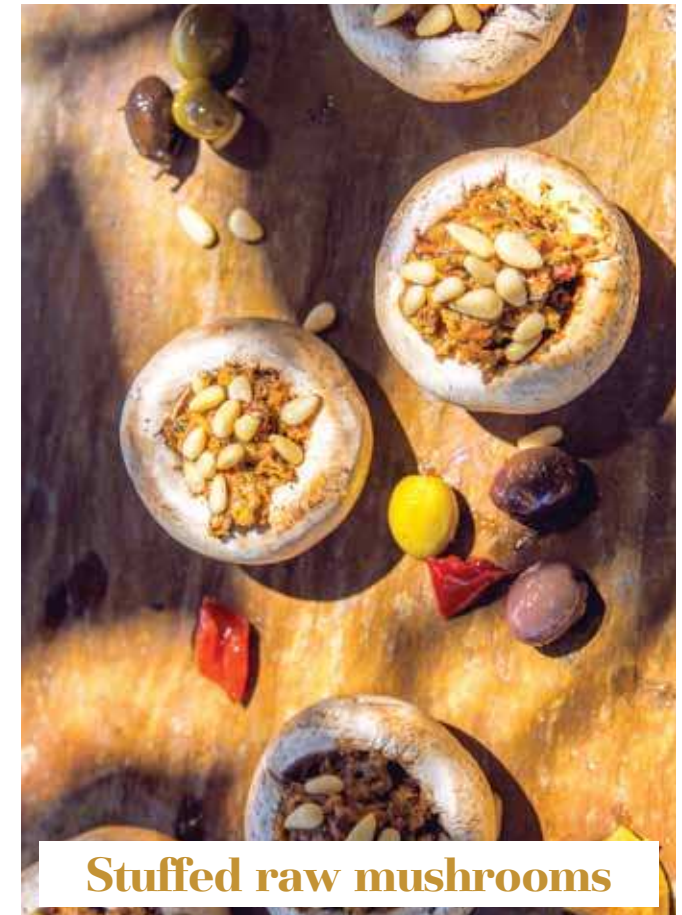
*Food To Make The Soul Smile* presents creative and delicious healthy dishes that cater to all the family's dietary needs.



**Basic hummus**



**Raw chocolate truffles**



**Stuffed raw mushrooms**





## Basic hummus (Serves 4-6)

### INGREDIENTS:

- 100g raw chickpeas
- Juice of a lemon
- 3 cloves garlic, peeled
- 1tsp ground cumin
- 1tsp sweet paprika
- 4tbsp tahini (sesame seed paste) (optional)
- 6tbsp cold pressed extra virgin olive oil
- Himalayan pink salt and pepper to taste

### METHOD:

- 1 Start by soaking the chickpeas in plenty of cold water overnight. It is possible to cook from raw, but it takes about two hours. When ready to make the hummus, drain the chickpeas and rinse well. Boil the chickpeas in plenty of water until tender, approximately 30-40 minutes. When they are cooked, drain and rinse in plenty of cold water.
- 2 Tip all the ingredients into a food processor and blitz until smooth. The texture is very dependent on personal taste; make it as coarse or smooth as you like, even reserve some whole chickpeas to mix in at the end. Season the hummus and add a little more olive oil if too dry. Serve with raw vegetables or use to top a baked potato.
- 3 Try adding other ingredients to vary the flavours – fresh herbs, spring onion and roasted peppers work well. At the restaurant, we do a great dish of roasted sweet potato with burnt aubergine hummus; use the recipe above and blend in a whole charred and roasted aubergine.

Raw chocolate  
truffles



Stuffed raw  
mushrooms







## Raw chocolate truffles

### INGREDIENTS:

#### BASIC TRUFFLES MIX:

- 150g Medjool dates, chopped
- Approx 100g soft coconut oil (must be the texture of soft butter not liquid)
- 70g raw cacao powder
- Little coconut nectar, approx 4tbsp

#### TO COAT THE TRUFFLES:

- Raw cacao powder
- Desiccated coconut
- White sesame seeds
- Finely chopped nuts

### METHOD:

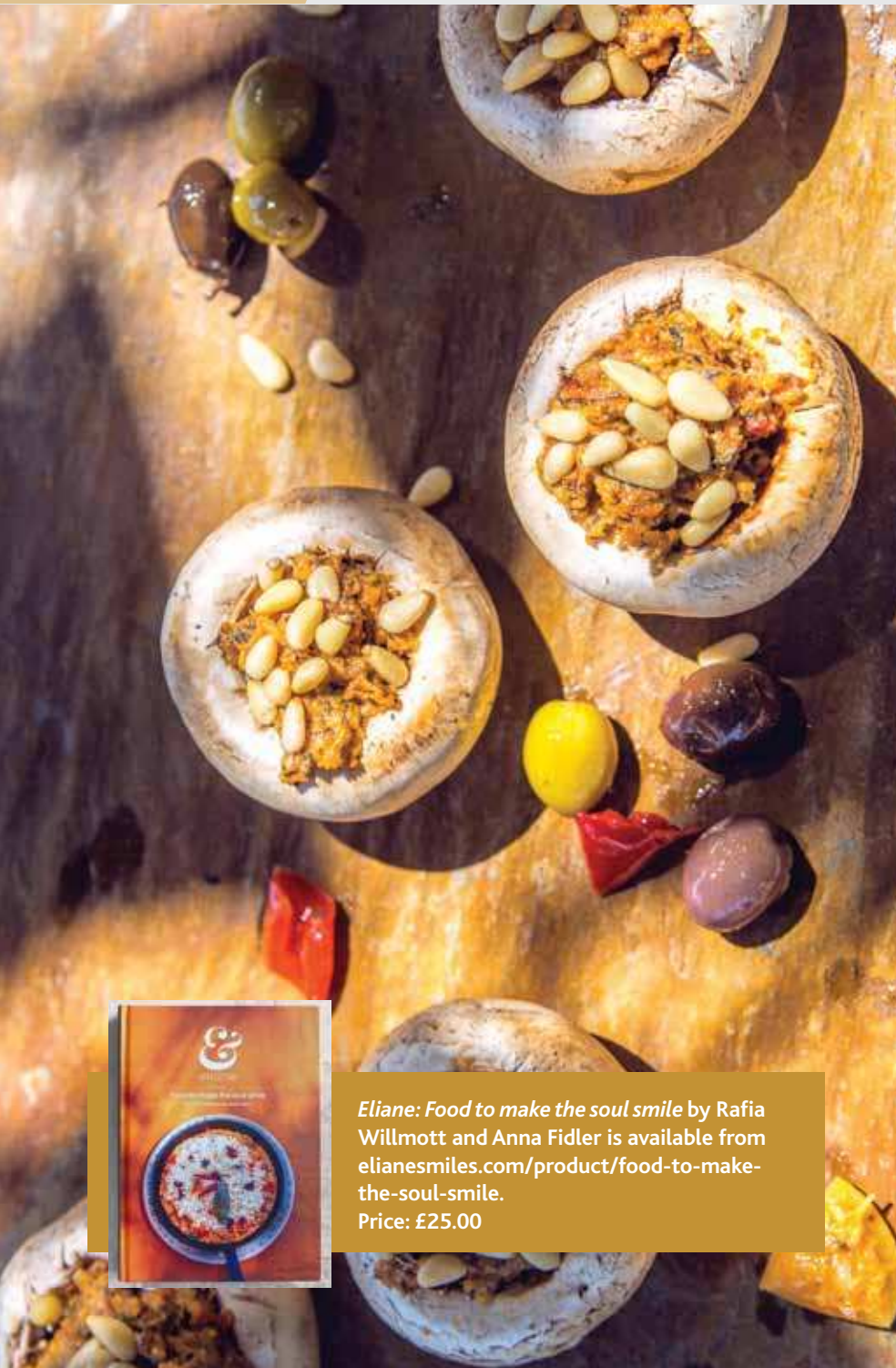
- 1 In a food processor, puree the dates until smooth, adding a little water if needed. Next, blend in all the other ingredients for the basic truffle mix until you have a butter icing consistency. The mixture needs to be firm enough to hold its shape when rolled into a ball; if it is too soft, refrigerate until it has hardened up a little.
- 2 Shake your chosen coating into a large bowl, then roll the truffles into bite-sized balls and drop into the coating. Toss the truffles around the bowl until completely covered, and then gently remove them and place on a lined baking tray in the fridge.
- 3 You can try adding flavours to the basic truffle mix like orange or peppermint oil and experiment with different coatings; finely chopped dried berries work as well.

Basic hummus



Stuffed raw mushrooms





## Stuffed raw mushrooms (Serves 4 as a main dish)

### INGREDIENTS:

- 12 medium-sized chestnut mushrooms

### FOR THE FILLING:

- Approx 150g raw cashew nuts
- A small handful of fresh coriander, roughly chopped
- Approx 2tbsp fresh mint, chopped
- Approx 2tbsp of fresh basil, chopped
- 2 cloves of garlic, peeled
- 1 pitted date
- 2tbsp fresh lemon juice
- A pinch of Himalayan pink salt and pepper

### TO DECORATE:

- 6tbsp raw pine nuts

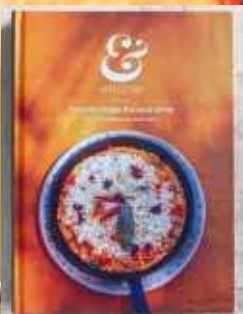
### METHOD:

- 1 Start by wiping or washing the mushrooms to remove any dirt or debris and lay out to dry on some kitchen towel. Gently remove the stems and roughly chop.
- 2 Add all the filling ingredients, including the mushroom stems, into a food processor. Whizz everything together to create a thick paste. Season and set aside until needed.
- 3 Fill each mushroom with the filling. Decorate with the pine nuts and serve on a beautiful platter.
- 4 This recipe also makes a wonderful raw canapé. Just select small, bite-sized button mushrooms.

Raw chocolate  
truffles



Basic hummus

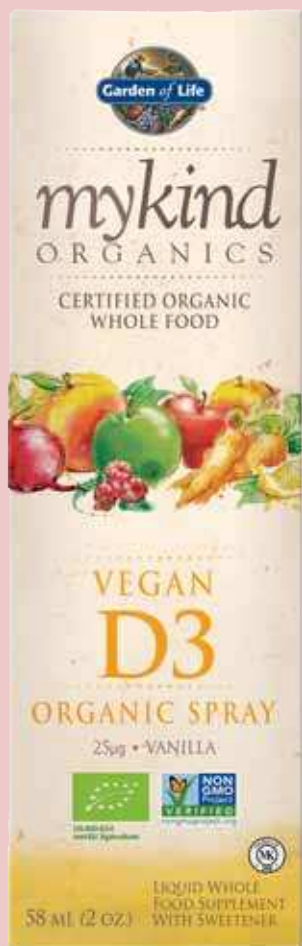


*Eliane: Food to make the soul smile* by Rafia Willmott and Anna Fidler is available from [eliansmiles.com/product/food-to-make-the-soul-smile](http://eliansmiles.com/product/food-to-make-the-soul-smile).  
Price: £25.00



# I-Mag giveaways

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



## GARDEN OF LIFE VITAMIN D3

Garden of Life whole food vitamin D3 formula is certified USDA Organic and Non-GMO Project verified, in a mouth-watering vanilla spray. Registered with The Vegan Society, it provides 1000iu (25mcg) per spray. Since vitamin D3 is a fat-soluble vitamin, vegan D3 also contains organic plant omegas from organic pumpkin seed oil and organic cranberry seed oil.

🍏 I-Win: We have five to give away.



## RIO ROSA ANTIOXIDANT FACIAL OIL

The latest addition to the award-winning, vegan-friendly, no nasties Rio Rosa Mosqueta range of pure Chilean rosehip oil skincare products is the Antioxidant Facial Oil, which contains Cityshield complex, a blend of three rich organic oils, rosehip seed, cranberry seed and sacha inchi, each with its own unique qualities to combat the skin-damaging effects of urban living, air pollution, air conditioning and hectic lifestyles. Light, quickly absorbed and with a nice natural scent from essential oils.

🍏 I-Win: We have 10 to give away.

## PROVEN PROBIOTICS ADVANCED MICROFLORA FORMULATION

ProVen Probiotics has launched a new range for practitioners and the first product is an Advanced Microflora Formulation, which provides 500 billion Lab4 live bacteria per sachet for shorter term intensive use to help provide a balanced bacterial population in the large intestine.

🍏 I-Win: We have five to give away.



## NUTRI ADVANCED PROBOTIX

Launched in November 2016, ProbotiX Daily 5 Live has quickly become Nutri Advanced's top selling live bacteria supplement, picking up Best New Product from True Health

magazine along the way and it's easy to see why. Delivering a guaranteed minimum of five billion live bacteria per capsule with five different viable strains of bacteria, ProbotiX Daily 5 Live is ideal for both health practitioners and patients alike looking for an effective and easy way to support their daily digestive health. A shelf stable formula means it's perfect for use when travelling.

🍏 I-Win: We have five to give away.





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