Nutrition

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Welcome



elcome to the latest edition of *Nutrition I-Mag* and my first in the Editor's chair – I'm delighted to be here.

Having worked in the natural health industry for almost a decade, I'm fully aware of just how important this sector is at helping people to get well. But what's

been really encouraging during my time putting together this first issue is just how high standards are and how committed students are to their studies.

Which brings me onto our mentoring scheme; this was something pioneered by *Nutrition I-Mag* in an effort to help the next generation of health writers take their first step into the publishing world, and we are really proud of how students have taken this to their heart. This issue, we have third year student, Joanna Keogh, as our latest candidate as she delves deeply into the issues around skin toxicity. You can read what she has to say on page 26.

And then it's onto detoxification. Yes, the season is truly upon us when vast numbers of Brits attempt to reverse the excesses of the festive season by taking up a detox. But with so many different types, some being far faddier than others, as practitioners it is important you can give the right advice. We hear from a selection of well-regarded experts on everything you need to know.

Finally, we are proud to be working with all the leading colleges in the nutrition world, and we are delighted to have our magazine distributed by them all. Our partners include CNELM, Institute of Health Sciences, BCNH, FNTP, IANT, Institute of Chinese Medicine, NNA, NT Community and of course, BANT, of which this magazine is CPD accredited.

I'd love to hear from you about what you think of *Nutrition I-Mag* and anything you'd like to see in the pages of the magazine. Feel free to drop me an email at rachel.symonds@targetpublishing. com or join the debate at our twitter page,
@NutritionImag

Rachel











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Meet The Team

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OUR CONTRIBUTORS

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



Alice Bradshaw D.N.Med, mBANT, gained her diploma in Nutritional Medicine at the Plaskett College of Nutritional Medicine, now called Plaskett International. She joined Solgar Vitamins in 1995 and now works as Educational Manager in the Technical Service Department.



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



Ben Shouler is a qualified Thai and Swedish massage therapist and naturopathic nutritionist, specialising in nutraceuticals. He is Head of Education and Technical Support for Terranova Nutrition in the UK.



Judy Rocher is a
Registered Nutritional
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of natural products from
around the world.



Kelly Rose DipION FdSc VN MFNTP has worked in the health and nutrition industry for 10 years and runs her own nutrition consultancy, where she provides one-to-one consultations and personalised nutritional programmes for her clients. Kelly also trained and worked as a veterinary nurse for a number of years, and has been member of Higher Nature's busy Nutrition department since 2006.



Suzie Sawyer
is a Nutritionist for Schwabe Pharma UK and
also writes articles for nutritional publications.
She has over 10 years experience in the
natural health industry, during which time
she has fulfilled a variety of roles, whilst also
maintaining a busy consultancy practice.



Emma Lane is founder and director of Integrative Health Education and Energize Mind Body. With over 25 years experience, Emma is qualified to practice across a wide range of natural health sciences including naturopathy, naturopathic nutrition, functional medicine, neurolinguistic programming, timeline therapy, hypnotherapy, auricular acupuncture, functional corrective exercise, sound therapy and energy healing.

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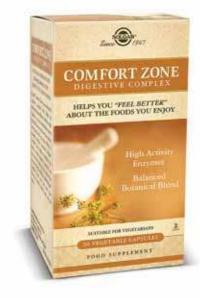
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Tews bites A round-up of the news from the natural health industry.

VMS levels in spotlight at Parliamentary event

Protecting consumers' rights to access higher potency vitamins and minerals was at the heart of a recent event held at the House of Commons.

Consumers for Health Choice (CHC) hosted the event, which was sponsored by Labour MP, Kate Hoey, and Marcus Jones, a Conservative MP, at Westminster, with the aim being to highlight the issues around the Food Supplements Directive, specifically Maximum Permitted Levels in vitamins and minerals

CHC Chair, Michael Peet, spoke at the event, telling MPs, Peers and other supporters: "Millions of Britons take vitamin and mineral supplements every day, either as part of their long term health and nutrition regimes or to address specific ailments. We believe consumers must continue to have the right to access the perfectly safe healthcare products that they have come to depend on.

"We are all too aware that there are powerful, well-funded lobby groups, led by big multinational companies, out there, itching to take advantage of the period

of flux just coming to an end in European policy-making circles and push for the setting of maximum levels as soon as possible. We cannot relax our guard in the face of these continued threats, and CHC will not let up one iota in its fight."

CHC is an independent organisation dedicated to fighting for individual rights and freedom of choice in health matters through its Save Our Supplements (SOS) campaign, which is supported by more



than 286,000 members of the public. The campaign calls on the Government to take urgent action so consumers can continue to make informed choices for themselves, free of excessive regulatory interference.





Everest effort

A well-known face from a leading natural health company has successfully trekked to Everest Base Camp.

Lynda Lucas, South West Area Rep for Kinetic, which distributes the supplement brand, Terranova, started the trek from Lukla, in the Himalayas, reaching base camp eight days later.

"I trekked through four seasons in that week from sunny 25 degrees to -10 at Base Camp. I saw some amazing scenery and met some lovely people on the way," she said.

Vitamin D health claim approved for elderly

A new health claim has been authorised for the use of vitamin D and a reduced risk of falling in the elderly.

The European Commission has authorised the Article 14 EFSA health claim, under the Nutrition & Health Claims Regulation, which was submitted by DSM, stating that vitamin D helps to lower the risk of falling associated with postural instability and muscle weakness.

A daily intake of 20µg of vitamin D from all sources is required to obtain the beneficial effect. The claim can only be used for food supplements that provide at least 15µg (or 600 IU (international units)) of vitamin D per daily portion.

Commenting on the development, Wouter Claerhout, Head Global Marketing, Human Nutrition and Health at DSM Nutritional Products, said: "We have been working closely with the scientific community on the preparation of the dossier to meet the strict requirements of the European Commission – a process of more than four years.

"We are proud to have been able to contribute in such a meaningful way to public health - fall prevention has important psychological benefits to seniors and it helps to reduce osteoporotic fractures."



Concern over lack of understanding about vitamin D levels

A company specialising in vitamin D products has expressed concern that Brits are unaware how much of this essential vitamin they need.

BetterYou, which has carried out research into vitamin D levels and has its DLux spray recommended by the Department of Health, believes patients could be getting the wrong dose.

BetterYou is keen to educate about the importance of maintaining vitamin D levels.

Andrew Thomas, founder and Managing Director, said: "We know that vitamin D

dosage should be based on body weight and the work that we have done with Birmingham City Hospital has produced a very clear indication as to what levels are required for life in the Northern Hemisphere. To maintain healthy levels of vitamin D within the body, a daily dosage level of 1000iu for every 25kg of body weight is required. This means that an average adult living in the United Kingdom requires 3,000iu (75mcg) of vitamin D daily to maintain a healthy body (primarily bone strength and immune system).

"Ninety per cent of our essential vitamin D should come from our skin's unprotected exposure to the sun, with only 10 per cent gained through diet. However, as the UK's winter sunshine is too weak to stimulate production of vitamin D, a daily dosage is essential to keep the body at its optimum."

This comes after NICE published new public health guidelines, calling for the millions of people at risk of low vitamin D to have better access to supplements to protect health.

Student bursary unveiled by **Bio-Kult**

Probiotics specialist, Bio-Kult, has announced a brand new bursary scheme to help a student establish their

The brand, part of the portfolio at Probiotics International (Protexin) has launched the Bio-Kult student bursary, where students are given the chance to win £1,000 to help them achieve their nutritional career goals. There is one prize of £1,000 while one lucky runnerup with receive £500.

To enter, students need to tell Bio-Kult what they would spend £1,000 on (healthcare related of course!).

"Every student is studying to make the world a healthier place, and we want to support them in that journey. We value our healthcare practitioners and aim to

offer them as much support as we can, from providing the latest research to hosting talks. This bursary goes one step further to give our practitioners of the

their own business when they graduate. It could also be used to fund a specialist short course or even a membership to a professional body."

www.bio-kult.com/student and will be sent an email when the applications open. You need to be over 18 and a student at the time of entry to be eligible to enter.

future a head start," Head of Marketing, Lizzie Hardy, explained. "The money could go a long way in helping someone who is looking to start

Applications open on January 5 but students can register their interest at

Leading nutrition authority releases new book



Well-known nutrition expert, Ben Brown, is to have his first book published. Ben, a

who is Technical Director at Viridian Nutrition, has written The Digestive Health Solution, a personalised fivestep plan for inside-out digestive wellness, released by Exisle Publishing. An international expert in the fields

of natural and nutritional medicines, the book unites several health topics of key interest, such as food sensitivities, gluten/wheat intolerance, low-carb diets for gut health, stress and mindbody therapies, natural supplements, probiotics and gut bacteria.

In addition to his work with Viridian, Ben teaches nutritional medicine and contributes regularly to industry magazines and scientific journals. He is on boards at the UK College of Nutrition and Health (BCNH) and lectures at top colleges and institutions.

Praise for Nutrition I-Mag



Nutrition I-Mag has become an important tool for students and graduates taking their first steps into practice - and we're delighted to hear from our readers about just why it's so useful.

We have recently carried out our annual reader survey, and are delighted to hear from so many readers about their thoughts on the magazine; some 53 per cent rate the editorial very valuable, while the rest describe it as valuable.

Popular sections include our research pages, written by Cherry Wills, while our features and ask the experts section are also well read.

But don't just take it from us, as many of our readers have plenty fo say.

Annie Edwards, who is studying Nutritional Therapy MSc, told us: "I really look forward to reading Nutrition *I-Mag.* Thanks for such a great mag! If it could be improved in any way you could make it longer so we have more to read!"

Helen Ross, studying BSc Nutritional Science, added: "I really love the magazine and find it interesting from front to back cover. Well done!"

Hilary Martin, who qualified in Nutritional medicine, said that the magazine couldn't be improved in any way, while Donna Harvey, studying a BSc in Nutritional Therapy, went on: "I find the layout easy to navigate and the content is always relevant and interesting"

Karen Carman said simply: "Thanks for supplying Nutrition I-Mag!"

Alison Crowther, a qualified Nutritional Therapist: "I am very impressed with Nutrition I-Mag. As I always read CAM magazine and nutrition newsletters/product information leaflets, I want a magazine that is quick to read "

If you would like to respond to our reader survey, log onto www.nutritionimag.com



Research Research

Nutrition I-Mag contributor, Cherry Wills, rounds up the latest research studies in the nutrition world.

Flavonoids boost health in later life



New results have been published from The Nurses' Health Study (TNHS) from Brigham and Women's Hospital and Harvard Medical School.

The results are the latest to

be released from the series of publications from the TNHS, which is reported to be among the largest and longest running investigations of factors that influence women's health.

The researchers included data from 13,818 healthy women in their late 50s, who completed questionnaires on multiple aspects of their lives, including their average intake of six major flavonoid subclasses. The results were analysed for odds of healthy ageing when the women reached 70 years of age.

The team reported that 11 per cent of the initial intake of women met the criteria for healthy ageing and those in the highest quartile for intake of several flavonoid subclasses were significantly more likely to be healthy compared to those in the lowest quartile. The researchers concluded that a higher intake of flavonoids, in particular flavones, flavanones, anthocyanins and flavonols, during midlife was associated with a greater chance of health in later life. They noted flavonoids may help maintain physical, cognitive and mental health by favourably influencing oxidative stress and inflammation, which are associated with many age-related health conditions.

Samieri C, Sun Q et al (2014) Dietary flavonoid intake at midlife and healthy aging in women.

Samieri C, Sun Q et al (2014) Dietary flavonoid intake at midlife and healthy aging in women. The American Journal of Clinical Nutrition, first published October 29, 2014, doi: 10.3945/ajcn.114.085605.

Weaning with gluten – when's a good time?

A randomised controlled trial has tested the relationship between the risk of children developing coeliac disease (CD) and early weaning of gluten containing foods.

The research involved 707 newborns randomly assigned to either be weaned with gluten at six or 12 months. All the babies had a first-degree relative with CD. At 15 months of age, the children were tested for either the standard or high-risk HLA gene and screening for CD was then conducted at 15, 24 and 36 months, with further follow-ups at five, eight and 10 years of age.

Results showed that the introduction of gluten at six months resulted in a significantly higher proportion of



children developing CD autoimmunity or overt CD before the age of five than the group that first ate gluten from 12 months. After five years of age, there were no significant differences between the two groups. At 10 years, the children with the highrisk HLA genotype had a higher risk of developing either CD autoimmunity or the overt disease.

An analysis of the risk of CD based on whether the children were breastfed showed no association. The

researchers concluded that neither delaying introduction of gluten nor breastfeeding modified the risk of development of CD but onset of the disease may be delayed by later weaning of gluten. A high-risk HLA genotype was identified as being an important predictor of ultimately developing CD.

Lionetti E, Castellaneta S (2014) Introduction of gluten, HLA status, and the risk of celiac disease in children. New England Journal of Medicine, Oct 2;371(14):1295-303. doi: 10.1056/NEJMoa1400697.

The enduring legacy of a poor diet highlighted

A team of researchers in the Netherlands have published important evidence finding that the effects of a bad diet may have longer lasting health implications than previously thought, especially in terms of the immune system.

The team demonstrated that lasting changes in immune function occur from poor eating habits due to epigenetic changes in gene expression. The changes continue even after healthy eating habits are introduced and result in a higher risk of cardiovascular disease than would be evident if no exposure to unhealthy foods had taken place.

The team concluded that dietary history has durable effects on immune cells and could have "profound implications for treatment of diseases with immune underpinnings".

Further research into the importance of diet-induced changes to the epigenome and the interaction between dietary patterns, DNA methylation and disease is now considered critical.

Van Kampen E, Jaminon A, van Berkel TJ, Van Eck M (2014) Diet-induced (epigenetic) changes in bone marrow augment atherosclerosis. *Journal of Leukocyte Biology*, Nov; 96(5):833-41. doi: 10.1189/ jlb.1A0114-017R. Epub 2014 Jul 14.

Systematic review links vegetable oil with lower risk of heart disease

A systematic review and metaanalysis has renewed the debate of butter versus vegetable oil.

The review, undertaken by researchers at the Harvard School of Public Health, utilised both published and unpublished data from 13 prospective cohort studies to summarise the evidence of the relationship between dietary intake of linoleic acid, an n-6 fatty acid, and coronary heart disease (CHD). The authors concluded that replacing five per cent of calories from saturated fat, such as red meat and butter, with foods containing linoleic acid, such as vegetable oil, nuts and

seeds, lowered the risk of coronary heart disease by nine per cent and risk of death by 13 per cent.

From these prospective observational studies, the authors believe dietary intake of linoleic acid is inversely associated with risk of CHD. In view of their findings, the authors recommend replacing butter, lard and fat from red meat with liquid plant oils in cooking.

Farvid MS, Ding M et al (2014) Dietary Linoleic Acid and Risk of Coronary Heart Disease: A Systematic Review and Meta-Analysis of Prospective Cohort Studies. Circulation, Aug 26. pii: CIRCULATIONAHA.114.010236. [Epub ahead of print]



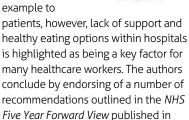
Doctors suggest healthy eating should be at the 'heart of the NHS'

A new editorial is increasing the pressure on the NHS to refocus its priorities for tackling obesity and help stem both the current and predicted future costs of this health epidemic.

The authors suggest the food environment of the NHS needs to change, with staff given more encouragement to adopt healthy eating habits. They argue that the current oversupply of cheap, high-energy, nutrient poor food such as confectionery, crisps and sugary drinks served by hospital food outlets, on trolleys to the bed-bound and by vending machines increase the acceptability and consumption of poor food choices and hence should not be present in healthcare settings. Furthermore, NHS employees should become health ambassadors in the local communities, with doctors and nurses given greater training in evidence-based nutrition.

Currently, 50 per cent of NHS staff are estimated to be overweight or obese, thereby setting a poor

October 2014



Malhotra A, Maruthappu M, Stephenson T (2014) Healthy eating: an NHS priority A sure way to improve health outcomes for NHS staff and the public. Postgraduate Medical Journal, Nov 16. pii: postgradmedj-2014-133103. doi: 10.1136/ postgradmedj-2014-133103. [Epub ahead of

Weight and the microbiota



In a regular column for *Nutrition I-Mag*, Natalie Lamb, Technical Adviser for Protexin, reviews the latest

After an often overindulgent festive season, many of our clients will be looking to detox and lose some excess pounds again this January. Opposed to relying on 'real food', many will be looking for a guide for a seriel for a s

of microbes thrive in our body¹. However, back in

microflora can be very different between lean and obese individuals³. It is already widely accepted that our microflora has an important role to play in digestion and absorption. Findings also suggest that our gut microflora can affect how much we eat, how efficiently we are able to break down food and

will hear a lot more about over the coming years. I

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- 2. Zhang C, Zhang M, Wang S, Han R, Cao Y, Hua W, Mao Y, Zhang X, Pang X, Wei C, Zhao G, Chen Y, Zhao L. 2010. Interactions between gut microbiota, host genetics and diet relevant to development of metabolic syndromes in mice. ISME J. Feb;4(2):232-41.
- 3. Jeffery IB, O'Toole PW. 2013. Diet-microbiota interactions and their implications for healthy living. Nutrients. Jan 17;5(1):234-52 4. Kalliomaki M. et al. 2008. Early differences in fecal microbiota
- composition in children may predict overweight. The American Journal of Clinical Nutrition 87:534-8.
- 5. Kadooka Y. et al. 2010. Regulation of abdominal adiposity by probiotics (Lactobacillus gasseri SBT2055) in adults with obese tendencies in a randomized controlled trial. European Journal of Clinical Nutrition. Jun;64(6):636-43.



Sunshine vitamin for reducing depression in elderly

The body of evidence on the importance of vitamin D continues to grow with the publication of results from a large scale, longitudinal study looking at the health of older adults.

The Health, Aging and Body Composition (Health ABC) study is an ongoing, prospective study involving 2,598 men and women aged in their 70s. This latest publication has focused on the relationship between serum vitamin D levels and risk of development of depression or depressive symptoms. The elderly are a known high-risk group for both vitamin D deficiency and depression, with depression reported to affect

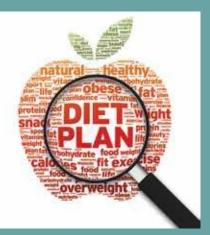
nearly 20 per cent of the elderly population.

The researchers concluded that there was a significant association between vitamin D concentrations and an increase in risk for experiencing depressive symptoms in the elderly. Further research is planned to follow up and test if supplementation and support of vitamin D levels may help protect against depression for elderly individuals.

Williams JA, Sink KM et al (2014) Low 25-Hydroxyvitamin D Concentrations Predict Incident Depression in Well-Functioning Older Adults: The Health, Aging, and Body Composition Study. Journal of Gerontology A Biol Sci Med Sci. Oct 18. pii: glu184. [Epub ahead of print]



Personalised dietary protocols backed up in new research



The participant's compliance was assessed after three and 12 months using food frequency questionnaires. The team extent than those only given standard

Nielsen DE, El-Sohemy A (2014) Disclosure of genetic information and change in dietary intake: a randomized controlled trial. *PLoS One*, Nov 14;9(11):e112665. doi: 10.1371/journal. pone.0112665. eCollection 2014.

Is overeating a symptom of obesity?

An interesting review article has put forward a concise argument against the current paradigm of obesity being a result of overeating.

The author suggests evolution has led to a metabolic thrift, which has resulted in a genetic tendency to become obese when we are exposed to the modern 'obesogenic' culture of energy-dense foods and inactivity.

Studies are now indicating that it is the body's response to nutrients in the modern diet that contributes to overeating and ultimately fat accumulation. Changes in the epigenome, neurotransmitter functions and gut microbiota are all highlighted as playing a crucial role. Furthermore, the lack of specific nutrients on mitochondrial function and signalling pathways may promote fat to be accumulated, even when calorie intake is relatively low.

The author continues that future studies should focus on the impact of nutrients on mitochondrial health and foetal development and the relationship between gut flora species and accumulating fat. In this way, new and potentially effective therapeutic approaches may be found.

Stenvinkel P (2014) Obesity-a disease with many aetiologies disguised in the same oversized phenotype: has the overeating theory failed? Nephrology Dialysis Transplantation, Oct 31. pii: gfu338. [Epub ahead of print]

CHERRY WILLS



completed her nutritional therapy training at ION and The University of West London. She is passionate about new research to promote the benefits of nutrition for all and ensure greater acceptance of nutritional and lifestyle approaches into mainstream medicine. She is currently living and working in Brisbane, Australia.

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New to market

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

NEW HOMEOPATHIC SPRAYS UNVEILED

Weleda has launched a new range of homeopathic oral sprays.

The new homeopathic medicines are registered within the NR (National Rules) criteria and are an innovative new range of six indicated oral sprays, which has taken five years in development.

Among the new products is Stress Relief Spray, formulated for temporary relief of mild stress, irritability and tension and contains a homegrown biodynamic tincture of Chamomilla matricaria (Chamomile). Combined with this is Pulsatilla pratensis (Small Pasque Flower), traditionally used in homeopathy to bring calm to life when we feel emotional, tearful or over sensitive.

There is also Digestive Relief Spray, formulated for indigestion and bloating, and a combination of two homeopathic remedies, Carbo Veg and Colocynthis.

Carbo vegetalis, potentised from charcoal from birch wood, is traditionally used to tackle wind and bloating and to ease the discomfort experienced when food is slow to digest. The tincture



of Citrullus colocynthis (or bitter cucumber) is made from the pulp of the fruit of this vine-like plant, traditionally used in homeopathy for the griping or colicky pain of indigestion.

BETTERYOU DEVELOPS MAGNESIUM RANGE

A new magnesium spray developed for sensitive skin has been launched.

BetterYou has added the new product to its award-winning magnesium range, specially formulated to be gentler on sensitive skin.

Magnesium Oil Sensitive Spray has undergone extensive dermatological testing on different skin types to ensure everyone can benefit from transdermal magnesium, which has been scientifically proven to supply the essential mineral faster than tablets and capsules.

Andrew Thomas, founder and Managing Director of BetterYou, said: "More and more, we are seeing vulnerable groups of people such as the pregnant, infirm and infants enjoying the tremendous benefits that come from elevating elemental magnesium levels in this way. With up to 80 per cent of people thought to be deficient in magnesium, we've now developed a product, which even our most sensitively skinned customers can enjoy. This will help ensure that no one misses out on the benefits of spray-on-the-skin supplementation, which we believe is the most effective way of making sure our bodies get the magnesium they need."



ORGANIC SELECTION

developed a new selection box of some of its top organic teas.

The Ayurvedic company has created the box comprising of five of its award-



winning blends; Elderberry & Echinacea, Lemon, Ginger & Manuka Honey, Night Time, Three Mint and Detox.

Price Herbal Collection is described as the perfect introduction to Pukka's adventurous tasting teas, using ingredients that are all Soil Association certified and expertly blended by herbalist and Pukka co-founder, Sebastian Pole.

"At Pukka, we aim to take people on their own mini herbal adventure and what better way to do this than with five of our bestselling organic teas. The variety in our Herbal Collection box means there's a tea to suit your wellbeing needs, whether you need a kick start in the morning or to wind down at night." Pole said



SUPERFOOD DEVELOPMENT

Amazing Grass has developed two new green superfood products.

The superfood company has launched Tangerine Immunity and Energy Watermelon.

Ideal to reform your pH balance and strengthen your immune system, Tangerine Green SuperFood Immunity Defence is a powerful blend of nutritious greens, phytonutrient packed fruits and vegetables, and digestive enzymes and probiotics to aid digestion and absorption.

The blend contains organic mushrooms, herbs and vitamins and a complete raw food with powerful antioxidants.

LEPICOL – 3-IN-1 HIGH FIBRE FORMULA

Lepicol is a multi-fibre source product containing gentle psyllium husk which contributes to maintaining normal bowel transit, as well as inulin. Together, these two ingredients can help ensure your recommended daily intake of fibre. The third key ingredient of Lepicol is five strains of live bacteria. Lepicol is suitable alongside antibiotics, for children and when pregnant, when travelling and for vegetarians.





Detoxology

Footpads

KICK START YOUR **DETOX WITH CRYSTAL** SPRING'S DETOXOLOGY **FOOTPADS**

Kick start your New Year detox with Crystal Spring's Detoxology Footpads. According to ancient Eastern wisdom, toxins in the body accumulate in the feet and are expelled through perspiration. The Detoxology Footpads aid this process by warming the skin on the feet, opening the pores, and absorbing the toxin-filled



CORDYCEPS-MRL 250G **POWDER PRESENTATION** WITH 2G SPOON

Cordyceps-MRL (Cordyceps sinensis) powder is not an extract, the powder does contain both mycelium and primordia (young fruit body) cultivated into a biomass that is grown on a sterilized (autoclaved) substrate. Cordyceps sinensis is most commonly used to support adrenal, lung and immune function but there is also a growing body of evidence supporting its important hepato-protective

properties(1)(2).

For more information, visit www.mycologyresearch.com

(1) Medicinal Mushrooms-An Exploration of Tradition, Healing & Culture by Christopher Hobbs L. Ac. Page 81.

(2) Cordyceps sinensis – Supplementation as Imunomutrition in Alcohol Induced Liver Steatosis, C. Santos, Mycology News Edition 9, Page 2.

Is Your Client Suffering with IBS or IBD?



An imbalance in gut flora (dysbiosis) could be responsible for their symptoms.

Have they been tested?



For more information about the FloraPrint® test. please visit the CNS website, email info@camnutri.com or contact us on 01353 863279.







BANTNews

We bring you all the latest developments from the UK's leading professional body for Registered Nutritional Therapists, BANT.



NUTRITIONIST RESOURCE DEAL LIVE FOR BANT MEMBERS

ANT has launched an exclusive offer for members with Nutritionist Resource.

Nutritionist Resource has teamed up with BANT to offer its

members a free three-month free trial and, if they decide to continue their membership after the trial has ended, a discount of 12 per cent on monthly payments or 20 per cent on appual payments.

Barbara Powell, BANT's Membership Director, said: "We are delighted that we have been able to negotiate such a fantastic deal with Nutritionist Resource for our members. We know this has been a really useful marketing tool for many members in the past."

Nutritionist Resource is an online directory advertising nutritionists, nutritional therapists and dietitians in the UK. To make it easier for members of the public to find what they need, Nutritionist Resource has created an online directory that is completely free for visitors to browse at any time, from anywhere.

New student webinar programme announced

BANT Student Network has started this academic year's webinar series. Student members can now register for webinars by emailing studentwebinars@bant.org.uk.
Recordings of the trainings will
also be available after the live
event.

BANT LAUNCHES 10 REGIONAL GROUPS

BANT has set up 10 new regional groups for its members to share knowledge, advice and support.

The regional groups hold regular meetings for members and act as support networks for nutritional therapists, who predominantly work on their own. The new regional groups are in:

- West Midlands
- Hampshire
- Cambridgeshire
- East London
- France
- Italy
- **■** Germany
- Malta
- Surrey (West)
- Republic of Ireland

Commenting on the new developments, Michelle Chester, Head of Regions for BANT, said: "We have been absolutely blown away by the great response from members to setting up new groups. Thank you to our new regional coordinators for volunteering their time to run these groups. They are an invaluable resource for our members, the majority of whom spend much of their time working alone."

BANT is also in the process of organising new groups in Bristol and Spain.

About BANT

The British Association for Applied Nutrition



and Nutritional Therapy (BANT) is the professional body for Registered Nutritional Therapists. Its primary function is to assist its members in attaining the highest standards of integrity, knowledge, competence and professional practice, in order to protect the client's interests, nutritional therapy and the Registered Nutritional Therapist. To find out more, visit www.bant.org.uk

Freedom for Blocked Noses!

Sinusitis? Nasal Congestion? Try Esberisin®



Head colds are a nuisance whenever they strike, but sinusitis and a really blocked nose have a way of being all you can think about - if you can think at all! New Esberisin® uniquely combines Gentian root, Verbena and Sorrel herbs, Elder and Primula flowers to relieve typical symptoms of sinusitis, such as a headache, tenderness around or behind your cheekbones, and of course nasal congestion.

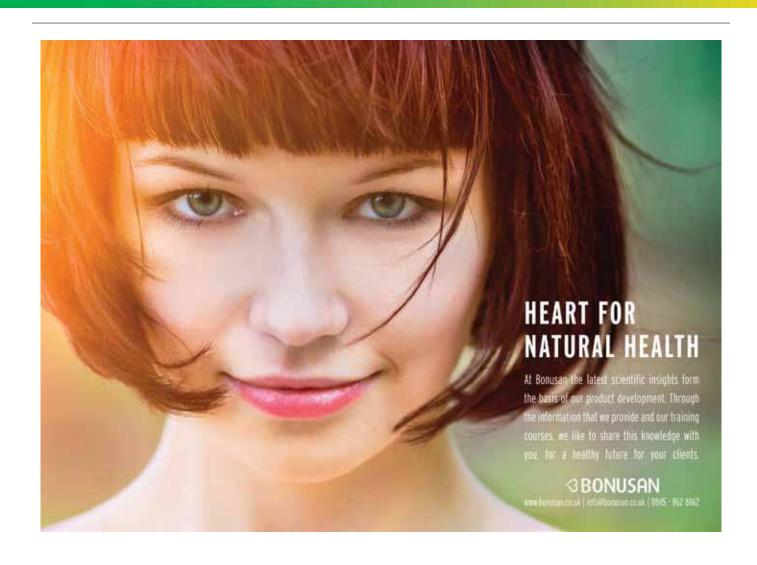
Esberisin is a traditional herbal medicinal product used to relieve nasal congestion and sinusitis based on traditional use only.

Always read the leaflet.



Exclusively available from plant-remedies.co.uk







ACAM, education

With five CAM Conferences taking place throughout 2015 in collaboration with BANT, make sure you secure your place.

s we head into 2015, now is the time to book your place at our series of CAM Conferences in collaboration with BANT.

Throughout the year, there will be five CAM Conferences, all held in collaboration with BANT and focusing on the most prevalent topics relating to nutritional therapy and how CAM practitioners can use this in their practice.

Our Education Director, Simon Martin, who works closely with BANT to ensure that each event provides the highest standard of education, designs all of the CAM Conferences. And each one is held at the popular London venue, Cavendish Conference Centre, only five minutes' walk from Oxford Circus. And there are multiple booking discounts available, with up to a third off.

But don't just take it from us; many of the past attendees have heaped praise on the events.

Amanda Cornford said: "Excellent food and inspiring presentations," while Susan Fruhman "enjoyed networking and having a chance to talk to relevant companies".

New for 2015... CAM Summit

The organisers of the CAM Conferences are excited to announce the launch of a brand new one-day educational event.

Featuring some of the biggest names in the CAM community lecturing on their specialist subjects, the CAM Summit is being held on June 20, 2015 at a brand new venue, 155 Bishopsgate, next to Liverpool Street Station

We will be announcing keynote speakers for the CAM Summit over the coming weeks, but to keep completely up-to-date, follow us on Twitter (@cam_summit), or visit the website www.camsummit.co.uk





Tracey Harper enthused: "Excellent, interesting and thought-provoking, thank you." And Catherine Dignan reported: "Taught me lots I didn't know and thought I knew. Highly relevant to NT practice."

The CAM Conference series, in collaboration with BANT, have become prestigious events and sell out months before the conference takes place. With a waiting list of over 70 people at our November CAM Conference, it is essential to book well in advance to secure your place.

All conference will be accredited by BANT, the FNTP and the NNA.

So, what's in store for 2015?

Brain Health: March 14

Following the BANT AGM, (available for any BANT member to attend), the first CAM Conference of 2015 focuses on brain health. The conference will feature one specialist speaker covering all aspects of the subject.

Nutrigenomics, Personalised Medicine and the Quantified Self: April 11

This conference will look at functional



medicine from a different perspective and why our most knowledgeable clinicians are distancing from protocoldriven practice and in the direction of even more highly individualised health care.

Frequency Medicine Meets Biochemistry: May 23

Exploring the intersection where foods and supplements are enhanced – or compromised – by deliberate and accidental energetic influences.

Meeting the Microbiome: September 12

New DNA techniques have enabled scientists to quantify and identify previously unknown species of bacteria that inhabit our guts and in relation to the influence of the microbiome on zonulin, leaky gut, reactions to gluten and other proteins.

Mind/Body Nutrition: November 7

Discussing how practitioners with the right attitude can trigger the healing process from the consultation itself, before any diet, supplements, bodywork or other modalities are employed.

Find out more

If you would like to book for any of the CAM Conferences, log onto www.camconferences.com or email amy.robinson@targetpublishing.com





Dr Dale Bredesen to headline March CAM Conference

14 March 2015 Cavendish Conference Centre





We are privileged to announce that Dr Dale Bredesen, MD, author of a revolutionary paper describing a true breakthrough in brain health, will be the sole speaker at the first CAM Conference in collaboration with BANT on the topic of Brain Health.

20 JUNE 2015



To book or for more information, click www.camconferences. com or telephone 01279 810080.

We can now announce Dr Tom O'Bryan and Dr Alex Vasquez as our keynotes for the CAM Summit

@camconferences



Dr Alex
Vasquez –
speaking on
inflammation
and
mitochondrial
medicine



Dr Tom O'Bryan – speaking on gluten sensitivity



To keep completely up-to-date or to book, click www.camsummit.co.uk or telephone 01279 810080.



The DETOX Rules

A buzzword in recent years, the time is here when practitioners see a rise in clients seeking advice on detoxing. But what guidance should you offer? And how can you be sure detoxification is needed? Our panel of nutritional experts offer some answers.



ear after year, come January, nutritional therapists see an influx of clients seeking advice on detoxing. The reasons are mixed, but what seems certain is there's a lot of misinformation out there as to how to detoxify safely and effectively.

Therefore, assessing your client's needs and the depth of a detox needed is crucial.

"Often, our current lifestyle choices create quite a few problems in our body's overall optimal function; we have raised stress levels, diets that are high in sugar, poor quality fats and processed foods, therefore the diet is low in key nutrients that assist in detoxification. Add in a lack

of exercise and such lifestyle abuses will affect the delicate balance of the body systems and can lead to congestion or sluggishness in the detoxification pathways," explained Emma Lane, naturopathic nutritionist and founder of Integrative Health Education.

"We misuse medications, antibiotics, hormonal medications such as the ocp, we have poor digestion, poor bowel movements, which create inadequate elimination of toxins through the digestive tract, reduced liver and kidney function and these things will contribute to increased levels of toxicity.

"Without appropriate levels of hydrochloric acid and digestive enzymes,

the digestive tract is unable to function optimally and this can lead to an increased growth of bacteria, yeast, fungus and parasites, which produce their own mycotoxins and by-products, which our detox systems then have to deal with. Also, because of the inappropriate breakdown of food, you also have large food particles that the liver has to deal with and possible increased intestinal permeability.

"With chronic low levels of continual stress, the patient will have higher levels of the stress hormones, which can cause challenges to the detoxification pathways, which in turn encourage toxins such as free radicals to proliferate."



IDENTIFY THE SYMPTOMS

"General signs are fatigue, weakness, elevated blood cholesterol, bloating and oedema. In regards to specific signs for the bowel system, look for halitosis, bitter taste in the mouth, fatty stools, constipation or diarrhoea, and intolerance to fatty foods," Lane said. "In regards to the immune system, food allergies, skin issues and asthma are all signs that clients may need to consider a detox. Hormonally, stress, infertility, PMS, being overweight and with the nervous system, headaches, dementia, poor memory and concentration."

She went on: "Common signs and symptoms of suboptimal detoxification activity within the body include recurrent headaches, muscle aching/weakness, recurrent infections, infertility, adverse reaction sensitivity to environmental chemicals, odours and/or nutritional supplements, chronic fatigue and lethargy, depression, anxiety and/or mood swings, poor short term memory and concentration, anaemia, and dark circles under the eye."

Kelly Rose DipION FdSc VN, a Nutritionist at Higher Nature, added: "Clients often present with a variety of different symptoms and many come to a practitioner as a last resort. Having gone through the orthodox medical route seeking advice for their symptoms, they may not get the relief they wish and seek other therapies. The liver is a large organ with many functions and so when it is under pressure and not functioning efficiently, or detoxification is poor, it may throw up a large variety of symptoms. Common symptoms that indicate that a detoxification programme may be of benefit include white or yellow-coated tongue and/or bad breath, skin rashes, allergies, chemical sensitivities, poor digestion, nausea and changes in stool such as pale coloured or greasy/shiny stool."

DETOX DESIGN

There are many types of detoxification people can choose, and Rose pointed out that it is all to do with the individual.

"The reasons behind why any one client will arrive at their present state will vary and as each person is an individual they should be treated as such. Therefore, there is no ideal for detoxification – it will depend on many factors, including the client's history, for example if they used prescription medicines, have a history of high alcohol intake or have been exposed to toxins," Rose said. "Genetics should also be taken into account as some people have been shown to have genetic differences in the CYP450 enzyme family that leads to an impaired ability to metabolise toxins^{1,2,3}. Age is also an important factor and in general an elderly person may have less efficient liver detoxification4 than a younger person."

She suggested questions to ask of a client include are they able to take on a detox programme? If so, to what degree?

"Some clients will present in a state where they do not have the capacity to undertake a radical detox programme and so a 'softer' programme may need to be adopted. This may mean that it may need to be repeated in order to aid detoxification fully," Rose explained.

Bradshaw pointed out there are two steps to a detox.

"Clients may be tempted by detoxification programmes that encourage exclusive fasting or juicing, or very low calorie, plant-based diets. Such programmes are not sustainable long-term and do not support the liver, the key organ of detoxification. The enzymatic processes that occur within the liver, known as phase I and phase II detoxification, can be supported by various foods and nutritional supplements," she said.

Rose added: "Phase I metabolites are often more harmful than the

A HERBAL DETOX

By Suzie Sawyer DiplON BANT, Nutritionist for herbal specialist, Schwabe.

Detoxification; it must be one of the most overused words around the country at this time of year.

Feeling sluggish, having dark circles under the eyes, bad breath, constipation and poor skin are just some of the warning signs that your body needs a clean up. However, the word 'detox' carries many different connotations, and suggests several different strategies. And, as we know, in nutritional therapy, one size certainly doesn't fit all.

However, we also know that the liver is the key organ in the detoxification process and therefore needs to be the first priority in any detoxification plan. In naturopathic medicine, it is the organ of anger, which is why people can often feel depressed or sad when their liver needs a clean-up, as well as angry.

First and foremost, the diet has to be addressed. Refined carbohydrates, processed foods, saturated fats, caffeine and alcohol can all place burdens on the liver, making the detoxification process more difficult. Increasing antioxidant-rich, colourful fruits and vegetables such as broccoli, sweet potatoes, kale, carrots, apples and berries is especially beneficial. Indeed, cruciferous vegetables such as cabbage, Brussels sprouts and broccoli contain glucosinolates. These yield sulforaphane when cooked or eaten raw, which is a potent inducer of phase II liver enzymes¹.

The amino acids methionine and cysteine influence the concentration of glutathione in the cells, which is the body's master antioxidant enzyme, while taurine is an important component of bile acids, which helps to up-rate the speed of elimination. Therefore, sufficient protein should also be consumed for effective detoxification.

So, what else is available in the CAM practitioner's armoury? There are three herbs of choice.

Firstly, we all know milk thistle, but do we really understand why it is so important in the liver's detoxification processes?

Milk thistle contains silymarin and silibinin, which are the active structural components with hepatoprotective properties. Silibinin is the primary and most active component of the complex of flavonoids. Whilst we often may think of milk thistle as playing an active role in biotransformation, its key mode of action is actually as a free radical scavenger. Silymarin works as an antioxidant, not only because it acts as a scavenger of free radicals that induce lipid peroxidation, but also by up-rating the enzyme systems, specifically glutathione, but also superoxide dismutase.

Tumeric (Curcuma longa) is another liver-helping herb that should be considered in a detoxification programme. In vivo, it has been shown to increase phase II enzymes. This is a really important.



original toxin and if phase II processes are impaired, they can become damaging to the liver and other cells. The phase II pathway reduces a toxin's reactivity and prepares it for excretion. This is done via one of six different conjugation reactions, each of which involves sticking a water-soluble chemical group onto the toxin to create a compound that the body can safely and speedily excrete."

So, what is the difference between the two phases?

"Phase I enzymes neutralise some chemicals completely, whereas other toxins are transformed into intermediary forms before they are processed by phase II enzymes. It's imperative that the phase II detoxification pathways function efficiently, as the intermediate toxins are potentially very damaging to health," Bradshaw said.

In short, Lane added that it is crucial elimination pathways are working.

She said: "If you increased phase I clearance without increasing phase II clearance, this can lead to a build-up of intermediates that may be more toxic than the original substance that the liver was breaking down."

PHASE I

When looking at specific nutrients to aid phase I, there are certain considerations.

"Cruciferous vegetables (including cabbage, broccoli and Brussels sprouts) are a source of idole-3-carbinole, a compound with potent detoxifying effects on both the gut and liver.⁽¹⁾ Foods rich in vitamins B and C as well as citrus fruits (with the exception of grapefruit), and adequate dietary protein also activate phase I detoxification," Bradshaw explained.

"Antioxidant nutrients, thiols (found in garlic, onions and cruciferous vegetables), pycnogenol and silymarin from milk thistle all offer protection from the damaging effects of the intermediary metabolites. Magnesium and physical activity support mitochondrial function within the liver, which in turn supports phase II detoxification by inhibiting the build-up of intermediary toxins."

Specific nutrients that are necessary for phase I, Rose recommended, include:

- B vitamins: These are vital cofactors for the action of the cytochrome P450 enzyme system and other phase I enzyme families. A good supply of B vitamins helps to protect the liver from the damaging effects of alcohol ^{5,6,7,8} while vitamins B3 and B5 also help the liver to process cholesterol effectively⁹.
- Antioxidants: A good supply of antioxidants is vital to neutralise the free radicals formed in phase I detoxification ¹⁷. This includes the antioxidant vitamins A,

C and E as well as the minerals like zinc, copper, selenium and manganese which act as co-factors for important antioxidant enzymes in the liver. Additional antioxidant nutrients of use include CoQ10, alpha lipoic acid reduced glutathione and flavonoids.

PHASE II

Moving onto Phase II detoxification, Bradshaw described this as a much more multifaceted process.

"Once more, cruciferous vegetables and citrus fruits are supportive. Specific amino acids are also inducers of the various systems within the phase II processes," she explained. "The lipotropic nutrients, choline and methionine, are involved in methylation, while cysteine, methionine and taurine play a role in sulfation. Essentially, this means that your clients should be encouraged to eat a varied diet that contains adequate protein sources. Cooked fish and meat are good options, and are also rich in glutathione, a key antioxidant that is central to detoxification. Other ways to increase glutathione are through vitamin C supplementation (studies show minimal increases from supplementing in excess of 2,000mg),(2) N-acetylcysteine (NAC) and whey protein use.(3)

"Clients should be advised to consume plenty of asparagus, avocado, walnuts, cruciferous vegetables and citrus fruits in order to stimulate glutathione conjugation. These foods, along with whole grains, will also provide fibre to ensure proper elimination, which is also an important factor in detoxification."

Rose suggested some B vitamins are required for phase II. For example, B5 is important for the acetylation pathway while B6 and B12 are needed as co-factor for glutathione manufacture¹⁰.

She also recommended:

- N-acetyl-cysteine: Used medically to treat paracetamol overdose and other causes of liver failure, this sulphur-based amino acid replenishes glutathione stores¹¹. This supports the phase II glutathioine conjugation pathway and ensures adequate glutathione to help neutralise free radicals before they can damage the liver.
 - Glutamine: This is also a precursor to

PRACTITIONER CHECKLIST

Kelly Rose DipION FdSc VN, offers step-by-step guidelines on safely detoxing

- Get clients to drink two litres of fluids daily to aid toxin elimination this can include filtered water, raw organic vegetable juices and herbal teas.
- Get clients to include some raw fruits of vegetables with each meal.
- Focus on lean, good quality protein in the form of organic poultry, fish, organic eggs, beans and lentils to provide the amino acids needed for proper liver function.
- Boost essential fat levels by encouraging a regular intake of oily fish, nuts and seeds and adding a daily tablespoon of cold pressed hemp or flax oil to meals.
- Help clients reduce their consumption of dairy products, as these are high in saturated fat and create a lot of work for the liver and gallbladder.
- Ask clients to avoid fried foods and to use coconut oil for cooking at home as this is not damaged by cooking.
- Reduce consumption of refined white sugar, sweets, fizzy drinks, cakes and biscuits and educate clients about natural alternatives such as xylitol.
- Educate clients about label reading and avoiding potential toxins, such as artificial sweeteners, colourings, flavourings and preservatives.



glutathioine. It too can support the liver's antioxidant defences and glutathioine conjugation pathways, as well as supporting the amino acid conjugation pathway. Glutamine is also important for the metabolism of protein in the liver, helping to protect liver cells from the ammonia produced during the urea cycle¹².

- Methionine: The most important human lipotrophic agent (a substance that prevents accumulation of fat in the liver). It is an important co-factor for the phase II methylation pathway and can also be converted to cysteine and used to make glutathione¹³. Human studies indicate methionine can lower acetaldehyde levels after alcohol ingestion. Because acetaldehyde is toxic, methionine may be effective in reducing the damaging effects of alcohol¹⁴.
- Choline: Like methionine, choline also assists in the phase II methylation pathway in the liver and is protective against fatty liver disease and cirrhosis¹⁵.
- Taurine: As a sulphur-containing amino acid, taurine supports the phase II sulphation and amino acid conjugation pathways. It's needed for proper metabolism of a whole variety of environmental toxins and drugs and is often low in people with chemical sensitivities. Taurine is helpful for fatty liver, high blood cholesterol and gall bladder problems as it aids bile production and excretion 16.

DIETARY CHOICE

"The ideal strategy is to get the client to create better lifestyle choices so therefore eradicating and reducing the things that are creating overload within the system," Lane explained. "Encourage clients to eat appropriate levels of fresh fruits and vegetables, especially cruciferous vegetables, broccoli, kale, cauliflowers. Aim for variety in the colour of the vegetables and fruit.

"Include bitter foods within the diet like dandelion greens, bitter melon, mustard greens. Using things like Swedish bitters will help with digestion and also with liver function. Add in things like turmeric, garlic and onions into cooking. Making sure that people are drinking the appropriate levels of water. An easy gauge is multiplying body weight in kilograms by 0.033 and that



will give you the litres that you should drink per day. A simple tip that anybody can do is having a fresh hot lemon drink first thing in the morning before food."

TAKE THE TIME

We see plenty of faddy mainstream detox plans suggest everything from as little as seven days to cleanse the system, so what is the ideal time for a person's body to detox effectively?

"This is very dependent on the person, their current level of wellbeing and health, what their overall energy reserves are and the type of cleanse that they are using," Lane explained. "For example, if it is a gentle, more supportive cleanse, where eating more appropriate levels of fresh fruit and vegetables is the goal, a longer time frame can be supported. It's important to add in plenty of cruciferous vegetables, like broccoli, cabbage, Brussels sprouts, kale etc. Adding in fresh foods like asparagus, watermelon, broccoli is important as these are good sources of glutathione, which is an important substance involved in the liver detoxification.

"You can improve somebody's overall diet, and that in itself will help support and cleanse the body detox systems, however, if somebody is going for a specific cleanse approach for detoxification then that will be more challenging on the body and the overall level of time will be shorter than somebody eating for general supportive detoxification processes.

"So, the actual overall period of time could vary for a detox from anything such as

ongoing supportive good lifestyle choices, that can go on indefinitely, to where you could just do a one-day juice and bone broth cleanse day that will help give the body a rest and a bit of a clean out, to a specific practitioner- led cleanse that could vary from days to weeks and is monitored by the practitioner."

A detox plan can exhibit changes relatively quickly, so it's important to educate customers about what to expect, and what is and isn't normal.

Lane commented: "For safety, ultimately it is making sure that you have got the appropriate nutrients coming in, whether it is from a supplemental source or a dietary source that will support the phase II (conjugation) before up regulating phase I (cytochrome p450 enzyme), so that you don't create more reactive oxygen intermediates that can be more damaging than the initial toxins that the liver was breaking down."

LIVER SUPPORT

Detox programmes naturally focus on the liver.

Bradshaw recommended: "In addition to those already mentioned, sulphurrich foods are beneficial (onions, eggs, garlic, legumes). Fibre-rich foods should be incorporated (oat bran, pears, apples, legumes) and water intake should be adequate.

"Herbs and spices, such as turmeric⁽⁴⁾ licorice and cinnamon⁽⁵⁾ and are also especially supportive of liver health."





SUPER POWER YOUR HEALTH

Superfoods have grown in popularity in recent years, but why should we be consuming them? And do they really offer such superior health benefits? *Nutrition I-Mag* investigates.

nderstanding what a superfood actually means is difficult because it has in recent years become a word used more by marketers in promoting products than by nutritional experts.

But what is certain is when a product truly is a superfood, it can offer a high level

of important nutrients.

Katie Pande MNIMH, Senior Herbal Advisor at Pukka Herbs, explained: "The term 'superfood' can be used to describe foods that are nutrient-rich, with a higher-than-average phytochemical profile. They are perfect examples of nature's incredible vitality! Superfoods have earned their special status because

of the concentrated amounts of healthenhancing phytonutrients, vitamins and minerals that they contain. They typically offer antioxidant and immune protection, ultimately resulting in us remaining in a better state of whole body health."

FROM THE AMAZON

Many superfoods that have stood the

test of time are those that hail from the Amazon Rainforest.

"To find true superfoods in every sense of the word, look no further than the Amazon rainforest, where plants have to do everything they can to survive in extremely harsh conditions," commented Judy Rocher, Education Manager at Rio Trading, which specialises in such products. "They develop numerous phytochemicals to protect themselves from attack from moulds, fungi, bacteria, and other microbes that abound in the lush, moist environment of the rainforest."

One such superfood is Suma (*Pfaffia paniculata*).

Rocher explained: "In South America, Suma is known as 'para toda' (which means 'for all things') and has been used for generations for a wide variety of health purposes, including as a sexual tonic. Suma is also called Brazilian Ginseng, although it does not belong to the Ginseng family, but is a member of the Amaranthaceae family."

But why can be it considered a true superfood?

"Analysis of Suma root reveals that it is highly nutritious and contains 19 amino acids, trace minerals, including silica, manganese, iron and copper, and a large number of electrolytes, iron, magnesium, zinc and vitamins A, B1, B2, E, K and pantothenic acid," Rocher explained. "It is a source of germanium, which Dr Otto Warburg believed helps to deliver oxygen to cells. The root also contains plant sterols including beta-sitosterol and stimasterol, and many phytochemicals including a high level of saponins (11 per cent), pfaffic acids, glycosides, and nortriterpenes. All of these incredible plant chemicals that are so deficient in our diets today, have potent antioxidant properties, twice that of α-tocopherols, according to clinical trials."

It has also been referred to as 'the Russian secret' as athletes there have used it for many years thanks to its ability to increase muscle-building and improve stamina without the adverse effects from taking steroids.

Rocher went on: "Based on animal studies, suma was shown to exert



anabolic-like effects, which may be useful to delay sarcopenia commonly associated with the ageing process. Due to its adaptogenic properties, Suma may be useful to relieve menopausal symptoms and other hormonal imbalances. A 2003 study by Oshima et al. showed increases in progesterone, testosterone and estradiol-17beta levels in 'mice that drank *Pfaffia paniculata* root-enriched water' for 30 days. In 2001, a US patent was filed which indicated that Suma increased sexual performance and function in humans."

So, what else could you recommend Suma for?

"Among its many health benefits, improvements to cardiovascular health were also noted. The saponins in Suma root are thought to be responsible for the improvements in lipid profiles, as these are able to bind with bile acids and cholesterol.

"Most superfoods have been shown to have cancer protective properties, and Suma is no exception. Saponins and pfaffosides in Suma have been reported to have these effects. In particular, a butanolic extract from Suma root was shown in studies to induce cytotoxic effects in human breast tumours. Further clinical trials have revealed chemopreventive effects in mice with precancerous liver lesions. In these trials, cancer progression was inhibited. Watanabe et al, evaluated the effects of

Suma on leukemia in mice, and reported that proliferation was markedly inhibited after oral doses of powdered root taken three times daily for eight weeks.

"Suma has been reported to be extremely non-toxic even at high levels, however, it should be avoid by people with hormone-sensitive conditions and is not recommended while pregnant or breastfeeding."

CHLORELLA

Other superfoods that have grown to prominence are those that are algae based, one of which is chlorella.

Sun Chlorella's Holistic Nutrition
Advisor, Nikki Baker, explained: "Chlorella is a microscopic freshwater single-cell green algae dating back approximately 700 million years. It has tough outer cell walls and the ability to reproduce itself at an astonishing rate, from four cells on day one to one billion cells on day 15 in cultivation. This special component is called the Chlorella Growth Factor (CGF) and in supplementation, encourages the growth as well as repair of cells and tissues in the body. This process is slowed down by ageing but chlorella is believed to help re-stimulate growth.

"Chlorella contains the highest amount of chlorophyll than any other plant in the world, with 40 times the chlorophyll content of the best wheatgrass juice known. Its bio-available nutrients make it a perfect whole food multivitamin, with



540 per cent of your RDA of vitamin D per dose and a B12 content equivalent to a 32 ounce steak. The CGF increases healthy cell production and so is amazing for hair, skin and nails but also increases the healing of any tissue in the body including the colon lining.

"In addition, chlorella enhances the detoxification of the liver and the subsequent removal of alcohol from the body^[1]. Professor Fukui of Sapporo Medicinal University reported that even with a fairly large consumption of alcohol, hangovers can be prevented by up to 96 per cent with chlorella."

Pande is also a big advocate, commenting: "Chlorella is one of the earliest photosynthesising microscopic freshwater plants evolving over two billion years ago. It is one of the most nutritionally dense foods in the world, packed with antioxidants, amino acids, proteins, essential fatty acids, vitamins, minerals and nucleic acids. Chlorella has an incredible ability to absorb solar energy, which has given it the highest known concentration of chlorophyll of any plant at three per cent.

"Chlorophyll has numerous benefits, but those at the top of the list are its antioxidant and oxygenating properties. Chlorella contains a unique compound known as Chlorella Growth Factor, which nourishes and supports the functioning of the immune system, more specifically boosting the production of interferon. Chlorella also contains the full spectrum of B vitamins and is 58 per cent protein, making it invaluable for cellular growth, repair and renewal."

WHAT ELSE

There are many different superfoods that you can recommend, so what do the experts say are worth keeping in mind?

"Spirulina is a blue-green algae rich in a pigment known as phycocyanin, which is a powerful antioxidant that scavenges free radicals," Pande explained. "Like chlorella, it is nutritionally dense, replenishing amino acid and protein levels, nourishing the blood and building immunity. Spirulina is 60 per cent protein, containing all the amino acids and, gram for gram, has 300 per cent more proteins than animal meat, in addition to being 80 per cent more digestible for humans.

"In addition, spirulina both supports the production of red blood cells and is a good source of iron, containing 58 per cent more iron than spinach. Spirulina is the second highest source of gamma linoleic acid (GLA) after breast milk, supporting nerve regeneration and repair throughout the body."

Another superfood that has stood the test of time is wheatgrass.

Pande explained: "Wheatgrass has the ability to cleanse and rebuild. It is bursting with enzymatic co-factors such as superoxide dismutase, which support and encourage efficient metabolism and cellular functioning throughout the body. Wheatgrass is specifically helpful for blood-building and tissue building whilst also supporting a healthy inflammation response."

There is a variety of ways superfoods can be included in the diet, and, in fact, it is one of the easiest nutrient regimes to incorporate into what clients eat.

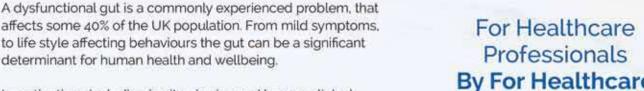
"The easiest way to combine such superfoods into your daily routine is to incorporate them into green and fruit-based smoothies or cool soups," Pande suggested. "Make sure that you look for 'cracked-cell' chlorella and spirulina; these have had their tough outer cell walls 'cracked' to release the vast array of nutrients inside and are much more nutritionally valuable to us."







Colon Cleanze with Nutrigut®



Investigations including in vitro, in vivo and human clinical studies has found that the ingredient Nutrigut" present in Colon Cleanze™ has uniquely prokinetic and antispasmodic benefits, that induce rapid perceptible benefits.

Colon Cleanze™ is the first 'gut health' and all natural formula to contain Nutrigut". It also includes citrus pectic and supportive botanicals to assist in the management of a healthy, spasm free digestive tract and assist with normal elimination.

Just 2 capsules a day have demonstrated matching benefits to the clinical studies, resulting in less abdominal tension, ease of elimination and increased comfort and stability of the gastrointestinal tract

The added advantage of enhanced toxin removal with the inclusion of citrus pectin and chlorphyll makes this product an excellent supportive component of antimicrobial and antiviral programmes. Bromelain, cayenne, ginger, fennel and oregano add additional microbial balancing effects and ongoing support of healthy eubiosis.

Colon Cleanze™ helps put you back in charge of your gastrointestinal tract, instead of the other way around.

By For Healthcare **Professionals**







As part of *Nutrition I-Mag*'s mentoring scheme, **Joanna Keogh**, a third year student at BCNH, explores the wider issues around the ever-increasing toxic burden placed on our skin – and consequently our health – in our modern world.

e are all exposed to toxins on a daily basis, through the food we eat, the water we drink and the air we breathe. However, a significant amount of our toxic burden also comes via the transdermal route, allowing numerous chemicals to pass through our skin and into our bloodstream, which could potentially be causing adverse health effects.

And given we've never been exposing ourselves to as many toxins, it is a real cause for concern; in 2013, UK household expenditure on personal care products was £6bn¹. Women, on average, apply around nine products every day, such as shampoo, body wash, deodorant, perfume, nail varnish and make-up. With each product containing on average 14 ingredients, this further increases the toxic burden on the body².

DERMAL ABSORPTION

Dermal absorption is a major route of entry for cosmetics and personal care products³. Chemicals from these products can be transported through the epidermis, via diffusion, either intercellularly, transcellularly, or directly though hair follicles and glands into the dermis, where they can enter the circulatory system via the venous and lymphatic capillaries⁴.

This entry route into the body bypasses the initial first-pass protective detoxification mechanism in the liver and allows toxins to enter, intact, directly into the bloodstream and tissues⁵. Although some toxins can be metabolised by esterases in the skin, the protective systems on this route are far less effective than being metabolised in the liver and, therefore, an increase in less conjugated toxins is observed when absorbed dermally compared to orally6. The extent to which chemicals are absorbed depends upon numerous factors, such as concentration of the substance, skin integrity, duration of exposure, molecular weight of the substance and location of application⁷. Absorption rates on our face and scalp are far higher than on other parts of our body8.

NATURAL DEFENCE SYSTEM

The epidermis forms an effective and complex barrier, which helps to prevent toxins from penetrating the skin layers. However, manufacturers of personal care products have developed ways in which to penetrate this protective barrier in order

for their products to be absorbed deeper into the skin. Chronic exposure to water, detergents and other irritants can also disrupt this barrier, allowing toxins to pass through⁹.

Another defence mechanism is the skin's xenobiotic-metabolising capacity as it contains active detoxification enzymes¹⁰, which protect against damage from exogenous toxins by breaking down and metabolising certain chemicals that penetrate this natural barrier¹¹.

However, these inherently protective enzymes may actually cause us harm when they encounter some toxic compounds found in our everyday beauty products. Some chemicals can inhibit certain enzymes, causing negative health effects. For example, parabens, found in numerous personal care products, have been shown to inhibit the oestrogenconjugating enzyme, sulfotransferase, which may lead to increased levels of circulating oestrogen, which can increase the risk of certain oestrogen-dominant cancers¹².

THE TOXIC LOAD

Increased toxic load from chemical exposure can increase the risk of



dermatitis¹³, eczema, allergies and asthma¹⁴ and also has the potential to trigger chronic diseases such as autoimmunity¹⁵, cancer¹⁶ and kidney disease¹⁷.

Many chemicals found in personal care products, such as parabens, phthalates and triclosan also have endocrine disrupting properties^{18,19,20} and can affect the body by interfering with the regulation of the production of natural hormones²¹.

Phthalates are widely used in personal care products and are associated with both teratogenic and endocrine-disrupting effects. Studies have shown that these chemicals may lead to early puberty²², early breast development in girls²³, increase DNA sperm damage²⁴ and breast cancer²⁵. Phthalates are found in many personal care products, including perfumes, hair products, body lotions, nail polish and deodorants. Products labelled as containing 'fragrance' or 'parfum' may also include phthalates as one of the hidden ingredients, which manufacturers are not legally required to disclose.

Parabens are used as preservatives to extend the shelf life of products and inhibit the growth of microbes. Early evidence suggests that paraben exposure may be linked to breast cancer, thyroid dysfunction, allergy, and obesity26 and they can also lead to increased circulating levels of oestrogens²⁷. One study showed that methylparaben applied to the skin can react with UVB light and may cause skin damage, involving carcinogenesis²⁸ which is worrying as methylparaben is a common ingredient in sunscreens. Higher phthalate and paraben levels are associated with frequent cosmetic and personal care product use in women²⁹.

Triclosan has been linked to various health effects, from the disruption of the endocrine system³⁰ to enhancement of liver fibrogenesis and tumorigenesis³¹ to the promotion of microbial resistance, and, in particular, resistance to antibiotics³².

Ethanol, a common co-ingredient in many products, enhances the absorption of toxic chemicals, such as parabens and has also been shown to inhibit their breakdown, causing an increased body burden of this potentially harmful chemical³³.

LINK TO AUTOIMMUNE DISEASE?

Autoimmune disease is on the rise, with 75 per cent of sufferers being women³⁴. Could this increased toxic burden from personal care product use be contributing to this increase?

Recent findings are suggesting that xenobiotic chemicals can modulate normal immune function and studies are now focusing on the role of endocrine disrupting chemicals in the development of autoimmune disease³⁵.

Synthetic chemicals of particular concern due to their wide use in everyday personal care products and their link to adverse health effects, have been identified as the 'dirty dozen' toxic ingredients:

- Parabens
- Phthalates
- Triclosan
- Sodium laurel sulphate
- PEG compounds such as propylene glycol
- DEA
- Formaldehyde-releasing preservatives
- Butylated hydroxytoluene (BHT)
- Siloxanes
- Coal tar dyes
- Petrolatum
- Fragrance or parfum

GENETIC INFLUENCE

Your genetics play a role in determining how well your body can eliminate toxins. For example, single nucleotide polymorphisms (SNPs) on the cytochrome P450 and detox-based enzymes can influence how well you are able to detoxify, and knowing if these are present or not can help you to create a personalised nutritional, lifestyle and supplementation program, that will help to enhance your body's ability to detoxify.

There are now many genetic tests available that can check for the presence of these key SNPs.

| CHEMICAL | FOUND IN | | | | | | |
|------------|--|--|--|--|--|--|--|
| Phthalates | Shampoo, conditioner, perfumes, lotions, nail polish, hair spray, products containing 'fragrance' | | | | | | |
| Parabens | Cosemetics, shampoos, conditioners, sun cream, deodrant, toothpaste | | | | | | |
| Triclosan | Products labeled as 'antibacterial', deodrants, cosmetics and toothpaste | | | | | | |

MENTORING SCHEME

REDUCE TOXIC LOAD

Avoiding exposure to harmful toxins in personal care products should be the first step in helping to reduce body burden. Optimising diet and supporting your detoxification enzymes through nutrition and supplementation will help the body to eliminate chemicals.

Glutathione is one of the body's major endogenous antioxidants and it is vitally important to ensure adequate levels in order to help the body to detoxify.

NUTRITIONAL PROTOCOLS

As well as adopting a healthy wholefoods diet, including plenty of vegetables, fruits, nuts and seeds, fibre and essential fatty acids, there are many therapeutic foods that have been shown to enhance detoxification by increasing endogenous antioxidants and reducing the harmful effects of toxic exposure. Some are included below:

- Cruciferous vegetables: Increases glutathione, reduces oestrogen and activates Nrf2 pathway.
- Curcumin (turmeric): Antiinflammatory, down regulates biochemical pathways such as TNF-a and COX2, slows/prevents progression of cancers and activates Nrf2 pathway.
- Quercetin rich foods (apples, onions, cherries, kale, broccoli): Antiinflammatory, reduces oxidative stress and increases glutathione.
- Pomegranate juice: Improves liver detox, reduces inflammation, reduces oxidative stress markers and increases glutathione

Reduce or avoid:

- Alcohol interferes with oestrogen detoxification.
- Non organic foods (especially meat and dairy and the 'dirty dozen' fruits and vegetables) – increases exposure to xenoestrogens from pesticides, antibiotics and hormones.
- Processed foods, trans fats and excess refined carbohydrates – increases levels of oxidative stress through activation of NFkB pathway.

KEY SUPPLEMENTS

N-Acetylcysteine (NAC), alpha-lipoic



acid (ALA) and selenium upregulate the detoxification process and increase levels of glutathione.

Magnesium and zinc act as cofactors for many of the detoxification enzymes

B vitamins and vitamins A, C and E support phase 1 detoxification

TAKE CONTROL

In the last 70 years, our exposure to synthetic chemicals has increased significantly³⁶, and with changes in our diets and lifestyle also having a profound effect on our health, it is time that we took precautionary strategies to eliminate unnecessary risks, not only to ourselves but also to our children and future generations, via exposure in utero, and via transgenerational epigenetic effects³⁷.

The absence of clear proof does not mean that any of these synthetic chemicals are safe, so minimising our exposure to these toxins and reducing our overall body burden is vitally important. The Environmental Working Group's website (www.ewg.org) contains information on the toxicity and health effects of over 60,000 products to help find safer alternatives. So, scrutinise product labels as you would do with food labels and avoid all products containing the 'dirty dozen' toxic ingredients.

Or make your own personal care products. There are many natural ingredients that can be used, for example

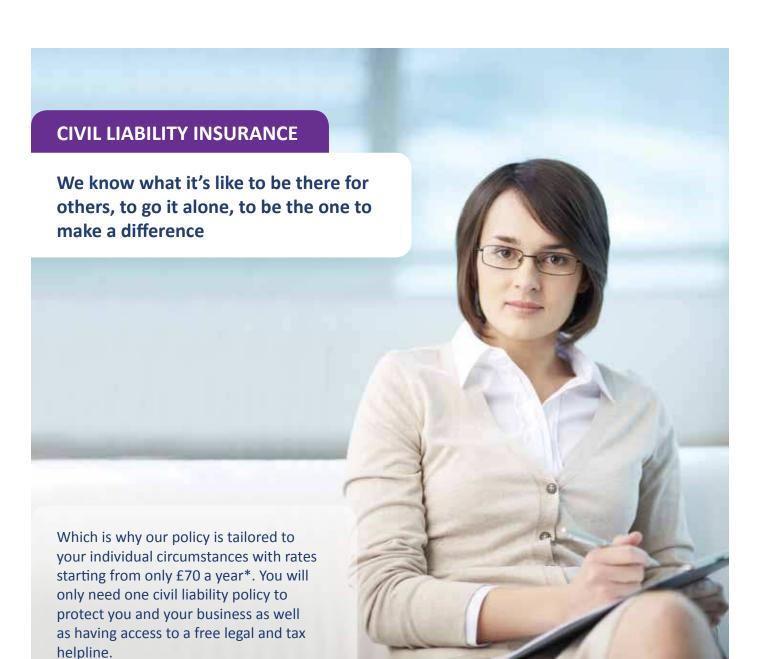
coconut oil is a great conditioner and moisturiser. If all this sounds a bit daunting then start slowly and gradually source more natural products, starting with the ones that your body is most exposed to on a daily basis, such as shampoos, conditioners, face and body creams. And be as careful what you put on your body as you put in it.

We all have a right to know whether products that we use contain chemicals that may increase our risk of disease, including cancer, but until manufacturers are forced to disclose all these harmful ingredients and risks, we must increase our own awareness of these potentially dangerous toxins in order for us to make better, more informed choices.

Exercise can also increase detoxification by accelerating lymphatic flow, inducing sweating and can activate the Nrf2 pathway leading to the creation of glutathione and superoxide dismutase (SOD), which reduces free radical activity and enhances the detoxification system.

Joanna Keogh is a third year student at BCNH studying for a degree in Nutritional Therapy, qualifying in 2016. Her special interests are in the microbiome and epigenetics.





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EXPERTADVICE

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

Q

I'm anticipating an increase in clients with digestive issues following the excess of Christmas. Can you recommend the best strategy to rebalance digestive systems, and which nutritional/botanical supplements can help?



ALICE BRADSHAW **ADVISES** The excesses of the festive season can be hard on the gastrointestinal system of even the healthiest of people. For those with underlying gut issues, such as IBS, the post-Christmas period can bring heightened levels of discomfort and renewed commitment to restoring their digestive health.

Eliminating

inflammation and rebalancing gut flora will help to alleviate bloating and restore regularity. A simple diet of soft, easily digested, mostly cooked foods is easy to adhere to and much less daunting than any restrictive 'detox' or cleanse that they may be tempted to embark on.

Using digestive supplements can also help to restore balance. Digestive enzymes may help to alleviate heartburn, bloating and other symptoms of poor digestion. Those containing alpha galactosidase

are particularly beneficial for aiding digestion of galactans, the gasforming polysaccharide found in legumes and cruciferous vegetables. Research has shown that probiotics can help to reduce gastrointestinal inflammation. Clients can be encouraged to consume fermented foods, such as sauerkraut, yogurt and kefir and/or take a probiotic supplement on a regular basis.

Historically, herbs and spices have been used to restore digestive balance and modern research attests to these benefits. Ginger is perhaps one of the best-known botanicals for supporting digestive health. Several controlled studies have demonstrated the effectiveness of ginger as an anti-emetic. It exerts a carminative effect, which helps to break up and expel intestinal gas and in turn may help with nausea and bloating associated with over eating. Ginger is also protective for the stomach lining and may increase the secretion of bile from the gallbladder, thereby supporting fat digestion. Cardamom and turmeric are from the same family as ginger and are also supportive for alleviating digestive distress. Fennel contains anethole, a compound, which has been found to reduce smooth muscle spasm and act as a carminative. All of these herbs and spices can be used in cooking or as teas, but are also found as botanical supplements.

Finally, the importance of stress management for dealing with digestive symptoms cannot be understated. The festive season itself is a source of stress and clients should be advised that managing stress and supporting healthy digestion are closely intertwined.

THE EXPERTS



BENJAMIN I.
BROWN, ND is a naturopath, science writer and speaker. He is the author of *The Digestive Health*

Solution, teaches nutritional medicine and speaks internationally, as well as contributing regularly to industry magazines and scientific journals.
Ben is Technical Director of Viridian Nutrition.



ALICE BRADSHAW D.N.Med, mBANT, gained her diploma in Nutritional Medicine at the Plaskett College of Nutritional Medicine, now called Plaskett International. She joined Solgar Vitamins

in 1995 and now works as Educational Manager in the Technical Service Department. Alice is involved in writing articles, training materials and lectures, and is a regular contributor on health matters in various publications within the nutrition industry.



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and is a qualified Thai and Swedish massage therapist and naturopathic nutritionist, specialising in nutraceuticals. He is Head of Education and Technical Support for Terranova Nutrition in the UK.



Fatigue seems to be an increasing complaint among clients. What is the best course of action to identify underlying causes and to make effective recommendations?

BEN SHOULER ADVISES Chronic fatigue is certainly becoming a major problem and, with so many potential causal factors, it can be quite challenging trying to work out the best course of action to take.

A thorough consultation followed by the relevant diagnostic tests is the best way to investigate the possible sources of fatigue. Blood chemistry and Complete Blood Count (CBC) tests can give important clues and an Adrenal Stress Index profile is a great way to assess cortisol curve abnormalities in order to determine how much of a role stress is playing in the fatigue.

Nutrient deficiencies are a common factor and discovering their root cause is important. Is absorption the problem? Is the diet lacking something? Or is a particular metabolic function being overworked to the point where specific nutrients become depleted (such as when excessive catecholamine production uses up too much vitamin C)?

Recommending nutrient dense whole foods probably goes without saying, however, something that is often overlooked is the number of macronutrients to be consumed. It is common for people to get carried away with the details of vitamin and mineral balance and do so at the expense of their overall calorie intake. On one extreme, you have people gaining the majority of their calories from processed foods, refined sugar and cheap oils. The other extreme is people who are converted to eating healthy, nutrient rich foods, but haven't sufficiently replaced the calories of the junk food they have removed from their diet. When the body isn't given enough fuel, your metabolism will slow down and your ability to produce energy will reduce.

Nutrient dense, higher calorie foods such as dark chocolate, coconut oil, fruit, eggs and sweet potatoes can be useful recommendations for boosting metabolism and increasing energy production. This has been reflected in recent studies showing cocoa as an effective treatment for chronic fatigue.

In my opinion, the biggest cause of fatigue is slow metabolism, which is often dismissed by doctors due to flaws in the way thyroid function is tested.

It is important to address your client's fatigue symptoms quickly and this is likely to improve their compliance with the rest of your recommendations. This is where supplements can be very effective at speeding up the process.

One of my favourite remedies is the mushroom Cordyceps sinensis, which is used in China to restore health and accelerate recovery from exhaustion. It helps increase the adenosine triphosphate (ATP) to inorganic phosphate ratio and enhances myocardial ATP generation capacity possibly by improving mitochondrial electron transport.

Rhodiola is often recommended for those suffering from low energy and has been shown to decrease the cortisol awakening response in sufferers of chronic fatigue syndrome. Supplementing nutrients that support the hypothalamic-pituitary-adrenal axis (HPA), such as vitamin C, magnesium, pantothenic acid and pyrixodine, can also be very beneficial for fatigue sufferers.

What you suffer skin

What nutritional strategies would you suggest for clients who are suffering with acne-prone, problem skin?



BEN BROWN ADVISES For decades, diet has been dismissed as not being important for acne, but that has recently changed thanks to some excellent clinical research. It is now undeniable that there are important dietary factors that can be addressed to improve acne; the most important is the glycaemic index and glycaemic load.

A seminal study in the *American Journal of Clinical Nutrition*, 2007 (Jul;86(1):107-15.) demonstrated that a low-glycaemic-load (low-GL) diet improves symptoms and hormonal parameters in acne vulgaris, and since then a number of similar studies have confirmed the same diet-acne relationship.

It appears that one of the primary mechanisms by which a low-GL diet works is down to its effect on insulin. High carbohydrate diets result in high levels of circulating insulin, which acts as a growth promoter in the epithelial cells of the skin and this accelerates cellular growth, blocks pores and increases bacterial infection, which are the main features of acne. Lower your insulin, and you improve your skin.

Interestingly, it is not only dietary carbohydrates (too many grains, juices, soft drinks, potatoes, refined sugars and baked goods) that increased insulin; dairy products have a remarkably potent effect on insulin as well, even though they are considered low glycaemic index foods. A key approach to reducing acne should be limiting exposure to milk, yoghurt, whey protein and other dairy products.

Another area of controversy has long been chocolate, and putting an end to the debate, a remarkable study published in *The Journal of Clinical and Aesthetic Dermatology*, 2014 (May;7(5):19-23) found that pure cocoa, without any sugar or fat, significantly exacerbated acne compared to placebo. So we now know that can be a dietary trigger for some people too.

Finally, one of the more astonishing discoveries recently is that the gut-skin axis may be important, with a clinical trial in the *Journal of Cutaneous Medicine and Surgery*, 2013 (Mar-Apr;17(2):114-22.) showing that probiotic therapy may help reduce acne for the first time. Although more research is needed, this discovery expands on an old adage in nutrition 'you are what you eat,' but you also 'are what you assimilate'.



Professor Amin Karmali explores the power behind the reishi mushroom.

ome mushrooms have been known to exhibit several health benefits for thousands of years in China and other Asian cultures.

The Reishi mushroom, also known as Ganoderma lucidum, is well characterised in Traditional Chinese Medicine (TCM) for the prevention and treatment of allergies.

TCM references to the use of Resihi go back to 250 AD; in the famous Divine Farmer's Materia Medica, herbs are divided into three classes, with the upper class of herbs consisted of ginseng, astragalus and the following three mushrooms; Reishi (Ganoderma lucidum), Poria cocos and Cordyceps sinensis.

The upper class of herbs are characterised as herbs that are non-toxic, strengthen the body and can be used preventively (mild effect, long-term use) rather than curatively (strong effect, short-term).

USE IN HISTAMINE MEDIATED ALLERGIC RESPONSE

In the West, Reishi has been used in the management of histamine-mediated allergic responses. In particular, Reishi has been shown to have specific anti-inflammatory properties and the reason has been linked to the isolation from the herb of a family of ganoderic acids, triperpene compounds with a basic lanostane structure, which exhibits anti-inflammatory properties⁽¹⁾.

The compound Ganoderic Acid C, isolated by careful fractionalization of a non-polar solvent extract of Reishi (Ganoderma lucidum), is found to account for most of the anti-inflammatory activity in vitro tests, such as histamine release from mast cells⁽¹⁾.

For this reason, Reishi (Ganoderma lucidum) supplementation may offer an alternative to the use of corticosteroids

to reduce histamine mediated allergic response, such as in hay fever. A case study has demonstrated that the biomass form of Reishi (Ganoderma lucidum) of 3g a day has been demonstrated to be useful in adults with chronic hay fever⁽¹⁾.

WHY BIOMASS VERSUS EXTRACT

In the West, Reishi is sold in an extracted form (extracted specifically for ß-glucan content) or in a biomass form (mycelium and primordial (young fruit body)). The biomass form contains several substances of clinical interest such as enzymes, secondary metabolites and ß-glucans.

The biomass form offers not only the ß-glucans content but also enzymes, which play a role in immune support that complement the anti-inflammatory function of Reishi⁽²⁾.

It has been known for over a century that some enzymes can be used in the

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| | | IN ABSENCE OF PROTEOLYTIC ENZYMES | | IN THE PRESENCE OF PEPSIN | | IN THE PRESENCE OF TRYPSIN | |
|---|---|-----------------------------------|---------------|---------------------------|---------------|----------------------------|---------------|
| | | Reish Biomass | Reshi Extract | Reish Biomass | Reshi Extract | Reish Biomass | Reshi Extract |
| 1 | Peroxidase activity | 20.9 m U | 0.0 m U | 18.3 m U | 0.0 m U | 18.7 m U | 0.0 m U |
| 2 | Glucoamylase/ Beta- glucanasase activity | 5.3 U | 0.0 U | 4.8 U | 0.0 U | 4.9 U | 0.0 U |
| 3 | Protease activity | 9.1 m U | 1.1 m U | 8.4 m U | 1.0 m U | 8.5 m U | 0.8 m U |
| 4 | Glucose 2-oxdase activity | 14.3 m U | 10.1 m U | 12.1 m U | 7.2 m U | 13.2 m U | 8.5 m U |
| 5 | Superoxide dismutase (SOD) activity | 98.4 m U | 99.8 m U | 82.3 m U | 71.7 m U | 87.5 m U | 75.9 m U |
| 6 | Cytochrome | 1.4 nmoles | 1.5 nmoles | 1.3 nmoles | 1.1 nmoles | 1.2 nmoles | 1.0 nmoles |

prevention and even treatment of several clinical conditions. These enzymes are divided into the following activities:

- Enzymes that prevent oxidative stress: Superoxide dismutase.
- Enzymes that prevent cellular growth: Protease, Glucoamylase
- Enzymes that promote detoxification: Peroxidase, Cytochrome P-450

Table I demonstrates the difference in enzyme content between a biomass form of and extracted form of Reishi (Ganoderma lucidum). Two samples (1g) of Reishi biomass powder and an extract of Reishi were compared to detect and to quantify enzyme activity in the presence of gastric (proteolytic) enzymes (pepsin and trypsin) in vitro. The biomass contains mycelia and primordial, whereas the extract is a concentrated extract (20x) of Reishi fruiting bodies⁽²⁾.

With exposure to digestive enzymes, the extracted form of Reishi (Ganoderma lucidum) exhibits low levels of enzyme activity compared with the biomass form of Reishi (Ganoderma lucidum).

CONCLUSIONS

The differences in enzyme content between both samples may be due to differences in biological material in these samples since one contains mycelia and primordia (biomass form) whereas the other consists of concentrated (20x) extract of fruiting bodies.

The biomass form is more resistant

to proteolytic enzymes (i.e simulation of digestive tract) than the extracted form of Reishi. The concentrated extract of the fruiting bodies is more exposed and available to the action of proteolytic enzymes (i.e simulation of digestive tract) since there are no chemical barriers to prevent such exposure⁽²⁾.

Therefore, the Reishi (Ganoderma lucidum) biomass form not only has the advantage of enzyme activity, but the underlying anti-inflammmatory properties that are essential to reduction of histamine mediated immune response.

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The Use of Ganoderma lucidum (Reishi) in the Managemet of Histamine-Mediated Allergic Responses-Mycology News Edition 8, February (2004), (1-2).

Comparative Differences in ß-1,3-1,6 Glucan content between Ganoderma lucidum (Reishi) mushrooms (Biomass vs Extract) in the Presence of Proteolytic Enzymes by Karmali, A. *Clinical Journal of Mycology* Vol IV, Nov 2013, 2-6

Note: Biomass form of Ganoderma lucidum (Reishi) was supplied by Mycology Research Laboratories Ltd. (www.mycologyreserarch.com).





Professor Amin Karmali with Ph. D. and D. Sc works at Chemical Engineering and Biotechnology Research Center and Department of Chemical Engineering of Instituto Superior de Engenharia de Lisboa. He is

also a valued member of the International Scientific Advisory Board for MRL (Mycology Research Labs), advising MRL on all mushroom nutrition clinical development and research.





I-mag giveaways

Nutrition I-Mag showcases a selection of reader offers available to readers this issue.

EPIGENAR CURCUMIN-OREGANO-QUERCETIN COMPLEX

Each capsule contains 450mg turmeric extract containing 95 per cent curcumin, 25mg quercetin extract and 25mg of oregano extract, containing 30 per cent carvacrol. The phenolic constituents, carvacrol and thymol, are thought to be responsible for the benefits associated with oregano. Bioperine has been added to enhance bioavailability. It is available in bottles containing 60 vegetable capsules,

with the standard dose one capsule twice a day with food.

ČI-win: We have five bottles of Epigenar Curcumin-Oregano-Quercetin complex (normally £38.99) to give away.



Bio-Kult is a scientifically developed, advanced multi-strain probiotic formula containing 14 live bacterial cultures, which are proven to survive the high acidity of the stomach. Bio-Kult does not need to be refrigerated and is suitable to be taken alongside antibiotics, by babies, toddlers, children, when pregnant, when travelling, by vegetarians and as part of a healthy diet.

OI-win: We have five boxes of Bio-Kult 120 capsules to give away.





REISHI-MRL

Reishi-MRL is composed of both mycelium and primordia (young fruit body) of the mushroom, Ganoderma Lucidum. The mushroom is cultivated into a biomass that is grown on a sterilised (autoclaved) substrate in California. As a biomass, Reishi-MRL not only has beta-glucan activity, but also has enzyme activity. For example, enzymes that prevent oxidative stress (superoxide dismutase), enzymes that prevent cellular growth (protease glucoamylase), and enzymes that promote detoxification (Cytochrome P-450 Peroxidase). Finally, Reishi-MRL also has secondary metabolite activity.

Ö I-win: We have five pots of Reishi -MRL 90 tabs to give away.



FoodPrint is a laboratory test that utilises an innovative ELISA-based microarray technology to measure food-specific IgG antibodies in whole blood. Using just a finger-prick sample of blood, the FoodPrint test can identify

FOODPRINT 120+



CHATCHE)

antibodies raised to over 200 foods. CNS offers a range of test panels to accommodate different budgetary and dietary needs; 40+, 60+, 120+, 200+, herbs/spices, vegetarian and vegan foods.

Ol-win: We have one test to give away.

HIGHER NATURE GREEN TEA

Green Tea is renowned for its marvelous health benefits and is a healthy substitute to traditional tea and coffee. Higher Nature Green Tea contains high levels of catechins (15 per cent), known to naturally provide antioxidants, as well as 25 per cent polyphenols. Thus tea has nine catechins in all, and especially EGCG (epigallocatechin



gallate), the most important green tea antioxidant. This instantly dissolving tea tastes delicious and is lactose free.

Ol win: We have 50 pots of Higher Nature Green Tea (RRP £9.95 for a 50g pot) to give away.







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BANT presents Dr Myhill's ME conference webinar

BANT

Speaker: Dr Sarah Myhill **CPD hours:** BANT one hour

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The gut imperative

BIOCARE

Speakers: Alessandro Ferretti Dip ION **CPD hours:** BANT five hours

Price: Free

Tel: 0121 433 8774

Email: education@biocare.co.uk

December 30 – Edinburgh

January 28 – Manchester

January 29 - York

February 9 – London

February 11 - Birmingham

Basic pharmacology and drug nutrient reactions

INTEGRATIVE MEDICINE

HEALTH

Speakers: Deborah Grayson **CPD hours:** BANT seven hours

Price: £150 Tel: 01924 242 851

Email: courses@integrativehealth.co.uk Website: www.integrativehealth.co.uk February 11 - Middlesex

July 11 - Wakefield

Clinical Psychoneuroimmunology (cPNI) Year 1-

An 18-day clinical training programme

THE NATURA FOUNDATION

CPD hours: BANT 140 hours

Price: £2,390
Tel: 01279 816300
Email: info@cnelm.co.uk
Website: www.cnelm.co.uk

Venue: Centre for Nutrition Education & Lifestyle

Management (CNELM), Wokingham

Days 1-3: April 26-28

Days 4-6: June 8-10

Days 7-10: July 11-14

Days 11-12: September 7-8

Days 13-15: October 19-21

Days 16-18: December 4-6



DATES FOR THE DIARY

Brain Health

CAM Conference



Speakers: Dr Dale Bredesen
CPD hours: Five hours - subject to

Price: £84 (multiple booking discounts for booking more than one)

Tel: 01279 810080

Email: amy.robinson@targetpublishing com

website. www.camcomerence

Nutrigenomics, Personalised Medicine and the Ouantified Self

CAM Conference



Speakers: TBC

CPD hours: Five hours - subject to

Price: £84 (multiple booking discounts for booking more than one)

Email: amy.robinson@targetpublishing

Website: www.camconferences.com

April 11 - London

NEW FORDS



Nutrition

NEW WEBSITE
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WWW.NUTRITIONIMAG.COM



THE NEW DIET RULES

As we head into the New Year, take inspiration from these cleansing recipes by health and fitness expert, Tara Stiles.





PORTOBELLO BURGER HEAVEN

This portobello burger is hearty, sweet, and savoury. I have made these for a lot of people and have shared some of the information about how I get all the spice and flavour, but until now I haven't revealed everything because I like the burgers to be special and surprising. I'm psyched to share my secrets here with you, and I hope you enjoy them as much as I do.

SERVES 1

INGREDIENTS:

- 1tbsp olive oil
- Pinch of sea salt
- 1 Portobello mushroom
- 1½ tsp maple syrup
- 1/4 tomato, sliced
- 1/2 orange or red bell pepper, sliced
- Bun
- Pickles, kale, organic ketchup, and Dijon mustard, to garnish

METHOD:

- 1 Preheat the oven to 350 degrees Fahrenheit.
- 2 Drizzle the olive oil and salt on the Portobello. Dip the Portobello in the maple syrup. Place Portobello on a cookie sheet and bake it for 10 minutes.
- 3 Put the tomato slice and pepper on top of the Portobello and bake for another 15 minutes. Toast the bun in the oven for five minutes, if desired.
- 4 Remove everything from the oven and assemble the burger, garnishing with pickles, kale, ketchup, and Dijon mustard as desired.



Recipes taken from Make Your Own Rules Diet by Tara Stiles (Hay House, £18.99).

VEGGIE DETOX SOUP

I travel a lot, but when I know I am going to be home for at least a week, I love to cook up a big batch of this mouth watering soup, which I invented a few winters ago when I got inspired to make all kinds of soups. I experimented with a bunch of fresh ingredients. I made some keepers, and some onetime adventures that weren't the best but were edible enough not to waste. The great thing about cooking with fresh ingredients is you can't go too far wrong. This soup is not only delicious, I've found that if I'm looking to clean out my system or recover from some travel tummy troubles, eating this soup for two out of three meals a day gets me back to having lots of energy, feeling lighter in my body, and being clear and calm in my mind.

SERVES 8

INGREDIENTS:

- 1/2 red onion, chopped
- 3 cloves garlic, minced
- 1tbsp olive oil
- 3 cups water or veggie stock
- 4 handfuls chopped veggies*
- · 2tbsp hot sauce
- 1tsp red pepper flakes
- 1tsp black pepper
- 1tsp curry powder
- 1tsp chilli powder
- 1tsp sea salt
- 1 cup coconut milk

METHOD:

- 1 Sauté the onion and garlic in the olive oil in a large soup pot, until the onion is soft. Add the water or veggie stock. Stir in the veggies, hot sauce, and spices.
- 2 Bring the mixture to a boil, and then turn down to low and simmer for 30 minutes.
- 3 Stir in the coconut milk and simmer for 10 more minutes.
- 4 Enjoy blended or as is!

* You can really use any vegetables that you like. For me, I generally use a mixture of sweet potato, celery, cauliflower, tomato, and jalapeño.





ALMOND BUTTER FUDGE

SERVES 8

INGREDIENTS:

- 1/4 cup coconut oil
- 1 cup of almond butter*
- 1tbsp raw honey (optional)
- 1/2 tsp sea salt
- 1 handful dark chocolate chips
- 1 handful crushed dark chocolate bar

METHOD:

- 1 Soften the coconut oil by setting the container in a bowl of warm water for a few minutes.
- 2 Mix together the coconut oil, almond butter, honey, salt, and dark chocolate chips in a large bowl.
- 3 Pour the mixture into a glass dish lined with plastic wrap. Top with the crushed chocolate bar.
- 4 Freeze the fudge for at least an hour.
- **5** Cut up in squares and serve. Make sure to store the remaining fudge in the freezer.

^{*} You can use any kind of nut butter to make this. I've used all sorts.





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intense berries

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GREEN BARLEY GRASS
SPIRULINA
5 PROBIOTIC STRAINS
7 DIGESTIVE ENZYMES
PHYTONUTRIENT-RICH
100% VEGAN
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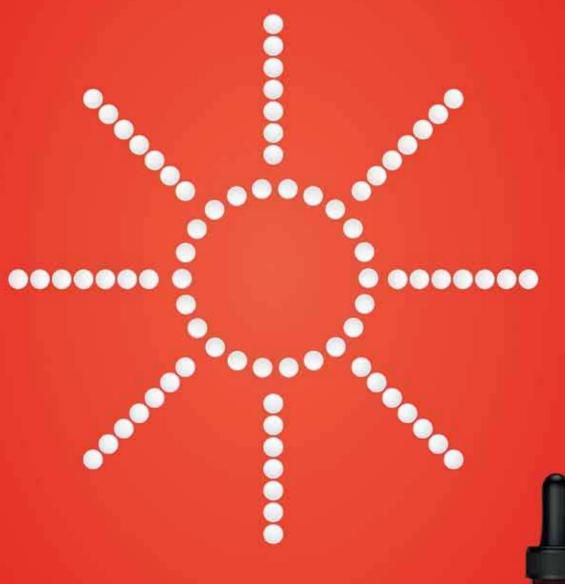
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