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**THE SCIENCE AGAINST SUGAR,
ALONE, IS INSUFFICIENT IN
TACKLING THE OBESITY AND TYPE
2 DIABETES CRISES**

**CASE STUDY: SMALL INTESTINAL
BACTERIAL OVERGROWTH
(SIBO) TREATMENT - HOPE FOR
IRRITABLE BOWEL SYNDROME
SUFFERER**

**CASE STUDY: MENOPAUSE AND
MOOD DISTURBANCE**

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ABOUT ACNEM

The Australasian College of Nutritional and Environmental Medicine (ACNEM) Inc, is a not-for-profit medical college established in 1982, offering postgraduate training and education for doctors and other graduate healthcare professionals in Nutritional and Environmental Medicine.

WHAT IS NEM?

Nutritional and Environmental Medicine (NEM) is concerned with the interaction of nutritional and environmental factors with human biochemistry and physiology, and the resulting physiological and psychological symptoms and pathology. NEM is evidence-based, drawing on the latest biomedical and genetic science and research to develop new treatment approaches to illness and disease, for primary prevention and to promote optimal health and well-being.

Nutritional deficiencies, imbalances, or the presence of environmental toxins in the body can result in cellular dysfunction, illness or disease. Treatment is aimed at correcting underlying causes as well as providing symptomatic relief. This may involve removal of certain foods from the diet or toxins from the patient's environment, or prescription of supplements such as vitamins, minerals, trace elements and essential fatty acids where diet and lifestyle alone cannot rectify physiological imbalances.

ACNEM MEMBERSHIP

Professional Membership of the College is open to doctors and dentists. Associate Membership is available to graduate and practising affiliated healthcare professionals. Membership benefits include free online lectures selected from ACNEM Online Learning, the ACNEM Journal, a regular email newsletter, and discounts on education and training. Members of the public are also invited to become ACNEM Community members to support the work of the College.

ACNEM TRAINING

ACNEM training programs are designed for practitioners wanting to learn effective ways of treating their patients. Content is strongly referenced and presented by some of Australia and New Zealand's leading clinicians. The emphasis is always on 'putting it into practice', with guidelines and practical tools to aid implementation. Training is held throughout the year at locations around Australia and New Zealand, and also by online learning.

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ACNEM training optionally leads to Certification in NEM Parts 1 & 2 and Fellowship in NEM. The ACNEM Primary Modules in NEM are the starting point for ACNEM Education and can be completed face-to-face, online or a combination of both.

CPD/CME POINTS

ACNEM is an accredited RACGP QI&CPD training provider for the 2017-2019 Triennium with 40 Category 1 points allocated to most training programs. ACRRM, RNZCGP and CPD/CME points from other professional organisations may also be available.

EDITORIAL

Dr Christabelle Yeoh and Dr Ron Ehrlich



MESSAGE FROM DR RON EHRLICH - INCOMING ACNEM PRESIDENT

Dear Colleagues,

I'm writing to introduce myself and say how privileged I am to be assuming the role of President of ACNEM. I would like to thank Dr Christabelle Yeoh who has served in this role for the last two and a half years and led our College through some challenging times, and into our new Strategic Plan.

When faced with a health crisis, I'm sure we all agree, many of us may have personally benefitted from the incredible knowledge, skill and expertise within our health system. It's a system that literally saves thousands of lives each day.

The problem is that our healthcare system has also become a chronic disease management system. The World Health Organisation has clearly said that the vast majority of chronic degenerative diseases, affecting young and old alike, are the result of nutritional, environmental and lifestyle issues. It is these very issues which not only have the ability to heal, but also improve an individual's physical, mental and emotional resilience.

So here is my question to you as a practicing health practitioner: is dealing with the symptoms, and just managing people's chronic disease the primary goal of your practice? Can we overcome these preventable chronic diseases, and actually achieve health and wellness?

There has never been a more important time to address those causes of preventable chronic degenerative diseases.

Over the last 35 years, ACNEM has trained thousands of health practitioners in an evidence-based approach to the nutritional and environmental factors that are driving preventable chronic degenerative diseases in our modern world.

I invite you to join and support ACNEM and I hope to see many of you at our upcoming Conference in May.

A handwritten signature in dark ink, appearing to read 'Ron Ehrlich'.

Dr Ron Ehrlich

MESSAGE FROM DR CHRISTABELLE YEOH

Dear Members and Fellow Colleagues,

Things are moving fast and changing at ACNEM which we are proud to share with you here. I was nominated President and Chairman of the Board in September 2016. Since this time, we tended to the much needed change in our college governance, processes and refreshing our education platforms and offerings. The whole ACNEM team and the Board have been continuously working to bring us to where we are today.

We have a long and well recognised history of NEM education, bringing nutrition and environmental medicine training to thousands of doctors and other allied health practitioners for over 35 years. However the medical education space has changed massively thanks to technology and we knew that we needed to revamp our offerings quickly. I am really pleased to share our successes with you - our development of new specialised training topics, webinars and podcasts.

ACNEM strives to keep up with the latest advances in nutritional and integrative medicine topics at a time where chronic and complex diseases are rising. At the same time, we constantly update and refresh our foundational training modules and deliver important workshops such as the recent Medicinal Cannabis Education.

We encourage everyone to keep learning and keep practicing medicine and healthcare the best way we can, for the satisfaction of our practice, our dedication to our patients and of course, changing the lives of our community. Be the beacon of health and wellness in your community and join ours to strengthen the cause!

I am remaining on the ACNEM board to continue supporting our great team and Board - this message of root cause medicine needs to spread.

See you at one of our next education events!

A handwritten signature in dark ink, appearing to read 'C. Yeoh'.

Dr Christabelle Yeoh

LETTERS



Primary Modules - A Reflection

Sam Hall

Physiotherapist, Vic

The content and information delivered by the Primary Modules has been nothing short of wonderful. Even though I need to practice my biochemistry, the lectures and articles reinforced what I already suspected – everything is interlinked when it comes to health. From the food that we take in, to the air that we breathe, our homes, our habitats, our lifestyles, our degrading planet – all play a role in how healthy we are, and how quickly our bodies will break down over time.

As someone who suffers coeliac, and who restricted food intake heavily for years, it brings some comfort to know that my 'gut instinct' to be wary of some foods, was correct. Ok – so I went a bit far (separate issue), but it always struck me when watching mother nature that native animals knew what to eat and what to avoid.

And any part of the system can be affected. What was once considered to be an exclusive issue for one body system (e.g. gluten and the gut), may now cause an issue for the brain, for the reproductive system, or for musculoskeletal system. Of course, it was always that way – but the evidence illustrates more and more just how one molecule can find its way anywhere to do its damage. Likewise, create an inflammatory petrie dish in your body, and it's anyone's guess which (if not all) of the chronic diseases you will eventually get.

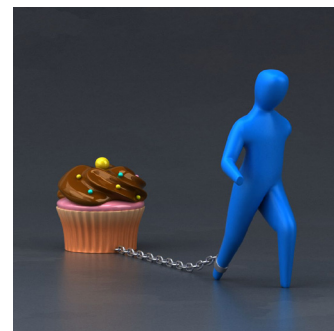
Our ability to adapt and inhabit every corner of this earth has been a blessing in our species success, however it may have also lulled us into a false sense of security that we're OK to eat everything... even the absolute junk that comes out of a man-made packet. As we now know, this is not so.

Our success has been a double-edged sword. The majority of people have chronic disease to look forward to, and whilst we live longer – living with chronic ill-health is not always a pleasant life to live. Hopefully through the education provided to us by ACNEM (and through similar study pathways, and personal enquiry), the message of integrative health can truly permeate our health care system. I for one am excited about what I have learnt and can think of so many ways to apply an integrative approach in health promotion and physiotherapy.

And the best bit? The majority of an integrative approach is free. It doesn't rely on expensive scripts or fancy equipment. Just a curious, detective mind, and a common sense approach to life. Good food, good sleep, good relationships, healthy environment... the simple stuff really. It's what a lot of us tend to value deep down, and just as we probably all suspect - it's the best prescription for a nourished, fulfilled and healthy life.

We welcome you to share your point of view, comments, or discussion on any of the content published in the ACNEM Journal. Please email your letter to: The Editor at mail@acnem.org

THE SCIENCE AGAINST SUGAR, ALONE, IS INSUFFICIENT IN TACKLING THE OBESITY AND TYPE 2 DIABETES CRISES — WE MUST ALSO OVERCOME OPPOSITION FROM VESTED INTERESTS*



Author:

Aseem Malhotra, Grant Schofield, Robert H. Lustig

INTRODUCTION

In January 2018, the Australian Medical Association called for a tax on sugary drinks to be introduced as a priority. The Association's president, Michael Gannon, likened the task ahead to taking on Big Tobacco. Here, we highlight the totality of evidence supporting a sugar tax. We also point out similarities of the tactics used by both Big Food and Big Tobacco to curb effective regulatory measures to curb obesity and diet-related metabolic disease. In fact, Big Tobacco adopted some of its methods from Big Sugar decades ago.

We should not wait decades to solve our current problems with sugar. It took 44 years from 1950, with the publication of the first study that linked smoking with lung cancer,¹ for the attorney general of Mississippi to sue Big Tobacco to recoup medical costs related to the disease.²

Big Tobacco sowed doubt that cigarettes were harmful, confused the public, persistently denied their effects, bought the loyalty of scientists and gave ammunition to political allies.³ As late as 1994, chief executives of every major tobacco firm swore under oath before US Congress that they did not believe that nicotine was addictive or that smoking caused lung cancer.⁴

Now, the science demonstrating sugar's role in diet-related disease is incontrovertible, but science alone cannot curb the obesity and type 2 diabetes epidemics. Opposition from vested interests that profit from diminishing society's health must be overcome.

THE CASE AGAINST SUGAR

The optimum – and, at the very least, required – amount of dietary sugar we need is zero. Dietary sucrose comprises two molecules: glucose and fructose. Although glucose is often called the 'energy of life' and all eukaryotic cells can burn it for energy, we do not need to consume it because

the liver can convert amino acids and the glycerol backbone of fatty acids to glucose (gluconeogenesis). This is why we can maintain normal glucose homeostasis while fasting for weeks at a time.

Fructose, however, is unnecessary for any biochemical reaction in eukaryotic cells; there is no biological requirement and it has no nutritional value other than energy. And when consumed in excess, fructose meets the following four criteria of public health experts for regulation.⁵

UBIQUITY

Sugar has been added to most forms of processed food for taste, bulk and preservation. Around 74% of foods in grocery stores or supermarkets contain added sugar.⁶ Children and adults in the United States consume a mean of 19 and 18 teaspoons daily, respectively,⁷ with similar estimates in the United Kingdom and Australasia.⁸ Despite warnings linking sugar to chronic diseases, consumption has increased on all continents in the last decade.⁹ The World Health Organization originally proposed a maximum of 6 teaspoons of added sugar per day, but food lobbies pressured them to adopt an upper limit of 12 teaspoons, which the US Department of Agriculture affirmed. To curb dental caries, researchers at the London School of Hygiene and Tropical Medicine suggest no more than 3% of calories or 3 teaspoons per day.

TOXICITY

Recent prospective studies, controlled for calories, adiposity and time, show that added sugar is a cause of type 2 diabetes.^{10,11,12} Similarly, a recent meta-analysis showed that sugar consumption, after excluding obesity, correlated with type 2 diabetes prevalence.¹³

An econometric analysis of the UN Food and Agriculture Organization statistics database, which lists by food availability per person by country (2000–2010), showed that only added sugar availability predicted changes in type 2 diabetes rates. For every excess 150 calories per day, diabetes prevalence increased by 0.1%, but if those 150 calories came from a can of soda, diabetes prevalence increased 11-fold (by 1.1%).¹⁴

A recent study examined the effects of isocaloric substitution of sugar with starch in 43 children with metabolic syndrome over a 10-day period. When the per cent calories as dietary sugar were reduced from 28% to 10%, keeping calories and weight constant, every aspect of metabolic health improved: diastolic BP reduced by 5 mmHg, triglycerides reduced by 46%, low-density lipoprotein (LDL) cholesterol by 0.3 mmol/L and insulin sensitivity improved, coincident with a liver fat reduction of 22%, with no changes in calories or weight.^{15,16}

Sugar has long been known to adversely affect teeth. In the United Kingdom, the most common cause of chronic pain and hospital admissions in young children (aged 5–9 years) is tooth decay driven by sugar.¹⁷

ABUSE

Fructose directly increases consumption independent of energy need.¹⁸ Along with caffeine, it seems to be the food additive that makes 'fast food' addictive.¹⁹ Fructose and glucose have different sites of action and generate two different effects. Glucose produces satiety or fullness, while fructose does not.²⁰ Glucose lights up the cortical executive control areas, but fructose suppresses the signal coming from those control areas.²¹

High-fat milkshakes increase brain activity in sensory areas concerning 'mouthfeel', whereas high-sugar milkshakes increase limbic system activity.²² In other words, fat increases the salience of sugar, but it is the sugar that drives the reward. Although sugar does not exhibit classic withdrawal, it demonstrates what the DSM-5 qualifies as 'dependence'.²³

NEGATIVE IMPACT ON SOCIETY

Sugared beverages alone are estimated to kill 184 000 people per year globally.²⁴ A population reduction of added sugar consumption of just 20% could reduce obesity, type 2 diabetes, heart disease, death rates and medical expenditures within 3 years in the United States.²⁵

Morgan Stanley modelled global economic growth rates to the year 2035 in low-sugar and high-sugar simulations.²⁶ Population-wide sugar reduction would prevent premature death, save economies billions and improve quality of life for millions across the globe.

THE CASE AGAINST THE PROCESSED FOOD INDUSTRY

As with tobacco, policy changes that target availability, affordability or acceptability (e.g. the Mexico sugar tax) are overwhelmingly effective in curbing sugar consumption.²⁷ But the sugar industry, their partners and political allies utilise numerous instruments to deflect culpability and derail policy change. Some involve influencing science, and some involve influencing public opinion.²⁸

INFLUENCING SCIENCE

LINKING SUGAR TO OBESITY RATHER THAN TO DIABETES

The food industry often tries to divert the public health conversation toward obesity.²⁹ Sugar ranks below potato chips and French fries as a cause of weight gain³⁰; the data correlating sugar consumption to obesity are weak, accounting for only about 10% of the observed effect.³¹ This is the basis of the food industry's message; if sugar is only one of many causes of obesity, it can iterate its mantra, 'a calorie is a calorie'. To them, it is about energy balance, gluttony and sloth, diet and exercise, and if you are overweight it is your fault. Yet, when weight and calories are factored out, the correlation between sugar consumption and type 2 diabetes is much stronger.^{13,14} Furthermore, there are countries where diabetes rates are high, yet obesity rates are low, such as India, Pakistan and China – while their sugar consumption has increased by 15% in the past 6 years alone.³² To date, the food industry refuses to engage in a discussion on the role of added sugar in chronic metabolic diseases, exclusive of obesity.

PAYING SCIENTISTS

The sugar industry has a long history of co-opting scientists. A team at the University of California, San Francisco, have discovered the paper trail of influence by the Sugar Research Foundation to exonerate sugar and divert attention to saturated fat as a cause of cardiovascular disease (CVD) in 1967,³³ and to divert attention away from sugar as a cause of dental caries in 1971.³⁴

Since then, those in the sugar, high-fructose corn syrup, beverage and processed food industries have paid for scientists' complicity in marketing sugar as healthy.³⁵ More recently, an analysis of Web of Science citations from 2008 to 2016, which searched for Coca-Cola conflicts of interest regarding funding, identified 779 articles. Subsequent comparison with Coca-Cola's own transparency website (<https://www.coca-colacompany.com/transparency/our-commitment-transparency>) identified 128 articles and 471 authors who were not disclosed by Coca-Cola, and 19 academic investigators who had direct email contact with the company.³⁶

OBFUSCATING SCIENTIFIC RESEARCH

One would expect the totality of evidence on the detrimental effects of sugar to be reflected in systematic reviews or meta-analyses, but many publications yield inconsistent results.^{37,38,39}

Many of these studies are funded by the food industry, which dilutes the data to obfuscate any significant effects and minimise evidence and impact (Garbage In, Garbage Out).⁴⁰ Also, studies funded by industry are 7.61 times more likely to show a conclusion favourable to that industry.⁴¹

The industry's influence in distorting public health messages extends to institutions and organisations that have a responsibility to scientific integrity, such as the University of Sydney, which used 'flawed' data to claim there is an 'Australian Paradox' (<http://www.australianparadox.com/>) (sugar intake has decreased while obesity rates have risen⁴² to exonerate sugar as a cause of obesity^{43,44}). The veracity of those data sets and conclusions is challenged by other independent nutritionists.

CO-OPTING PUBLIC HEALTH EXPERTS

For years, soft drink companies' public relations machinery has pushed the lack of physical activity as a cause of obesity, when there is evidence to reveal that although sedentary lifestyle contributes to chronic disease, physical activity's impact is minimal at best and you cannot outrun a bad diet.⁴⁵

Beverage companies have sponsored numerous public health efforts, provided they did not address soft drinks.⁴⁶ Brenda Fitzgerald, the recently disgraced director of the US Centers for Disease Control, had partnered with Coca-Cola as Georgia's public health commissioner,⁴⁷ who also bankrolled the Global Energy Balance Network, a consortium of three academics, to push lack of exercise as the cause of obesity.⁴⁸ Even Michelle Obama caved to food industry pressure; during the US president's second term, she shifted her focus away from the importance of a healthy diet towards promoting physical activity.⁴⁹

The US Academy of Nutrition and Dietetics, British Dietetic Association (BDA) and the Dieticians' Association of Australia all receive annual contributions from the food industry.⁵⁰ It is extraordinary that the BDA has also promoted Nestle Health Science on its homepage. Nestle has not only been a prominent marketer of sugary products for children, but has also been the target of a boycott by respected international organisation Baby Milk Action for contributing 'to the unnecessary death and suffering of infants around the world by aggressively marketing baby foods in breach of international marketing standards'.⁵¹ These organisations are wittingly or unwittingly behaving more like front groups for the processed food industry – this must be exposed.

INFLUENCING PUBLIC OPINION PERSONAL RESPONSIBILITY

Perhaps the most potent messaging of the food industry is that the public should exercise personal responsibility: 'it's your fault you're fat'.

Science journalist Gary Taubes says to use this argument is criminal, and we concur. It also flies in the face of the broad social-ecological approach of public health practice, which understands that there are multiple, hierarchical and interacting policy, environmental, social and demographic factors affecting behaviours which are well evidenced and understood.

The personal responsibility strategy was first deployed by tobacco companies in 1962 as a reason to keep on smoking.³ This ideology requires the following four prerequisites.

Knowledge: Information labelling is not easily understandable by the regular consumer buying food products in the supermarket. Many will trust and buy a product on the way it is promoted, rather than on its nutritional value. And until recently, the US Institute of Medicine, and in the United Kingdom and the rest of Europe for the past 15 years, guideline daily amounts on labels have suggested that daily consumption of up to 22 teaspoons of sugar is healthful.⁵²

Access: Over 70% of foods in the supermarket contain added sugar – it has become almost unavoidable. Processed sugary food and drinks have permeated workplaces, gyms and schools. We are heartened that the UK National Health Service has announced a ban on sugary drinks sold in hospitals, to start in July 2018.

Affordability: One should afford their choice, and society has to afford it too. Healthy food was twice as expensive as processed food in 2002, and its cost increased by £0.17 per pound per year over the next 10 years, compared with processed food, which increased £0.07 per pound per year.⁵³

Non-anarchy: The medical costs of chronic metabolic disease related to sugar consumption will cause a doubling of Medicare costs in the next decade,⁵⁴ bankrupting health care systems around the world,^{55,56} and the UK National Health Service is under an ever-tighter squeeze, resulting in lengthier waiting times.⁵⁷ The argument that your actions cannot harm anyone else ignores the diet-related harm experienced by children who are especially vulnerable to poor diet at critical development stages.

WEAKENING GOVERNMENT OVERSIGHT

In 1972, Sugar Information, Inc. ran a public disinformation campaign to deflect criticism from its product. The US Federal Trade Commission (FTC) engaged in a damaging court battle, which shuttered their efforts.⁵⁸ Yet in the late 1970s, efforts to ban junk food marketing on television led to a corporate power struggle pressuring Congress to 'decaw' the FTC, which

occurred in 1984.⁵⁹ This also saw the rise of the American Legislative Exchange Council (ALEC), a 'bill mill' that writes legislation beneficial to the food industry and pays off Congressmen to introduce these bills to benefit industry. Most recently, the Trump administration plans to limit the information on junk food labels, which could act as pre-emption for soda taxation in the United States and possibly repeal of the soda tax in Mexico.⁶⁰

TRADE ORGANISATIONS

Numerous front groups promote food industry interests and lobby politicians in the open; for example, in the United States, the Grocery Manufacturers Association, American Beverage Association and National Restaurant Association. In the United Kingdom, the Food and Drink Federation performs similar functions. In Australia and New Zealand, the Sugar Research Advisory Service (<https://www.srasanz.org/>) (SRAS) is claimed to be a scientific information Service for health professionals, academics and the media, which aims to provide an evidence-based view of the role of sugars in nutrition and health, but it is fronted by academics and health professions receiving money directly from the industry.

ASTROTURF GROUPS

Astroturf groups are citizens' non-profit groups that mask their sponsors to appear as though they are grassroots organisations. For instance, in the United States, the Center for Organizational Research and Education's (CORE; formerly the Center for Consumer Freedom) name is deliberately designed to divert attention away from industry connection. It claims to be 'dedicated to protect consumer choices and promoting common sense'. It is funded by fast food, meat, alcohol and tobacco industries.⁶¹ The group was originally founded in the mid-1990s, using tobacco and restaurant industry money to oppose smoking restrictions in restaurants. Its founder, Richard Berman, also founded the American Beverage Institute, which fights restrictions on alcohol use and raising the minimum wage. In a secretly recorded interview reported by The New York Times, Berman encouraged industry players to attack those that oppose industry interests and they could either 'win ugly or lose pretty'.⁶²

Similarly, in the United Kingdom, the Institute of Economic Affairs (IEA), an organisation that describes itself to be 'the UK's original free-market think-tank', claims to be independent of any political party, group or organisation. But in 2016, Transparify – which provides ratings of financial transparency of major think tanks – gave a 'highly opaque' zero score.⁶³

The IEA has received undisclosed voluntary donations from a number of organisations including Big American Tobacco, Coca-Cola Great Britain and Ireland, and sugar manufacturer Tate and Lyle.⁶⁴ As Transparify states⁶³:

The more lobbyists try to hijack the 'think tank' label in

an attempt to mask their paid-for spin as research-driven advocacy, the more important it becomes for the think tank sector as a whole to fight back. The best weapon in that fight is transparency.

In July 2014, the IEA produced a report arguing that lack of physical activity was driving the obesity epidemic rather than excess calories, which it claimed had actually reduced in the past three decades.⁶⁵ When questioned on Channel 4 News on whether the organisation takes money from the food industry, spokesman Christopher Snowden replied that the question was 'highly irrelevant'. Snowden, who does not have a medical or science background, has authored many opinion pieces opposing a sugar tax for Spectator Health. On BBC Newsnight in December 2017, Snowden suggested that organisations calling for reduced sugar, alcohol and tobacco are responsible for increasing misery in society, and also suggesting that we could not be healthier.

METHODS TO BATTLE VESTED INTERESTS

Twenty-five of the 30-year average increase in life expectancy in the past century can be directly attributed to public health measures that were underpinned by regulation, including safe drinking water, safer working environments, seat belts in cars, smoke-free buildings and immunisations.⁶⁶

The regulatory approaches that addressed the acceptability, affordability and availability of tobacco have been the most important factors driving decline in CVD mortality since 1969. A public education campaign, combined with smoke-free building regulations and banning of tobacco advertising, was an important measure for reducing smoking prevalence and, in turn, reducing CVD. However, the taxing of cigarettes was responsible for the biggest impact by far. Unfortunately, the increasing prevalence of obesity and type 2 diabetes driven by poor diet, and, in particular, sugar consumption, is costing billions to national economies every year, resulting in loss of economic productivity.²⁶

Industry has a right to use information to market its products, but it does not have a right to use disinformation to propagandise them. The public deserves to know the financial relationships between organisations and those who represent their interests. We must ask editors of respectable print and broadcast media whether it is appropriate to give a platform to an individual who uses unprofessional, defamatory and abusive language when describing respected public health advocates. Simon Chapman is a professor of public health at the University of Sydney who has been one of the most influential figures in campaigning for tobacco control in Australia. The IEA's Snowden has described Chapman as a 'scrotum-faced headbanger' who freely promotes 'junk science' and Stan Glantz of University of California San Francisco as a 'raving lunatic', 'gobshite' and 'clueless clown'.⁶⁷ As Duke University professor Kelly Brownell describes, Big Food uses dirty tricks to deflect blame for their own role in exacerbating the obesity epidemic, including attacking those calling for greater

regulation as peddling junk science, and calling them ‘food fascists’ and leaders of the ‘nanny state.’⁶⁸

RECOMMENDATIONS

We offer the following public health interventions to reduce sugar consumption, all of which are evidence-based and all of which were successful in curbing tobacco use. This suite of recommendations reflects an evidence-based, broad, socio-ecological approach to creating environments which help move society in the direction of food environments where sugar is no longer ubiquitous:

1. Education for the public should emphasise that there is no biological need or nutritional value of added sugar. Industry should be forced to label added and free sugars on food products in teaspoons rather than grams, which will make it easier to understand.
2. There should be a complete ban of companies associated with sugary products from sponsoring sporting events. We encourage celebrities in the entertainment industry and sporting role models (as Indian cricketer Virat Kohli and American basketballer Stephan Curry have already done) to publicly dissociate themselves from sugary product endorsement.
3. We call for a ban on loss leading in supermarkets and running end-of-aisle loss leading on sugary and junk foods and drinks.
4. Sugary drinks taxes should extend to sugary foods as well.
5. We call for a complete ban of all sugary drink advertising (including fruit juice) on TV and internet demand services.
6. We recommend the discontinuing of all governmental food subsidies, especially commodity crops such as sugar, which contribute to health detriments. These subsidies distort the market and increase the costs of non-subsidised crops, making them unaffordable for many. No industry should be provided a subsidy for hurting people.
7. Policy should prevent all dietetic organisations from accepting money or endorsing companies that market processed foods. If they do, they cannot be allowed to claim that their dietary advice is independent.
8. We recommend splitting healthy eating and physical activity as separate and independent public health goals. We strongly recommend avoiding sedentary lifestyles through promotion of physical activity to prevent chronic disease for all ages and sizes, because ‘you can’t outrun a bad diet.’⁴⁹ However, physical (in)activity is often conflated as an alternative solution to obesity on a simple energy in-and-out equation. The evidence for this approach is weak. This approach necessarily ignores the metabolic complexity and unnecessarily pitches two independently healthy behaviours against each other on just one poor health outcome (obesity). The issue of relieving the burden of nutrition-related disease needs to improve diet, not physical activity.

Retrospective econometric analysis¹⁴ and prospective Markov modelling²⁵ both predict that the prevalence of type 2 diabetes will start to reduce 3 years after implementing these measures. This calamity has been 40 years in the making – 3 years is not too long to wait.

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COMPETING INTERESTS

The authors declare that they have no financial or personal relationships which may have inappropriately influenced them in writing this article.

AUTHORS’ CONTRIBUTIONS

A.M. conceived the idea for the article and wrote the initial draft with further additions and edits from R.H.L. and G.S.

References

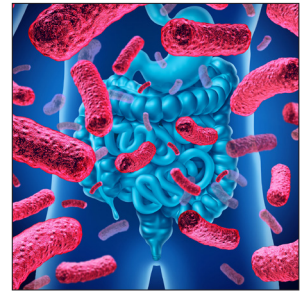
1. Doll R, Bradford Hill A. Smoking and carcinoma of the lung. *Br Med J*. 1950;2(4682):739–748. <https://doi.org/10.1136/bmj.2.4682.739>
2. Ieyoub RP, Eisenberg T. State attorney general actions, the tobacco litigation, and the doctrine of Parens Patriae. *Tul L Rev*. 2000;74(5&6):1859–1860.
3. Proctor RN. *Golden holocaust: Origins of the cigarette catastrophe and the case for abolition*. Berkeley, CA: University of California Press; 2011.
4. Tobacco Free Florida. 1994 – Tobacco company CEO’s testify before Congress [homepage on the Internet]. 1994 [cited 2018 Apr]. Available from: https://www.youtube.com/watch?v=e_ZDQKq2F08
5. Lustig RH, Schmidt LA, Brindis CD. The toxic truth about sugar. *Nature*. 2012;487(7383):27–29. <https://doi.org/10.1038/482027a>
6. Ng SW, Slining MM, Popkin BM. Use of caloric and noncaloric sweeteners in US consumer packaged foods, 2005–2009. *J Acad Nutr Diet*. 2012;112(11):1828–1834. <https://doi.org/10.1016/j.jand.2012.07.009>
7. Powell ES, Smith-Taillie LP, Popkin BM. Added sugars intake across the distribution of US children and adult consumers: 1977–2012. *J Acad Nutr Diet*. 2016;116(10):1543–1550. <https://doi.org/10.1016/j.jand.2016.06.003>

8. Ministry of Health, New Zealand. Annual update of key results 2014/15: New Zealand Health Survey [homepage on the Internet]. 2015 [cited 2018 Apr]. Available from: <https://www.health.govt.nz/publication/annual-update-key-results-2014-15-new-zealand-health-survey>
9. Popkin BM, Hawkes C. Sweetening of the global diet, particularly beverages: Patterns, trends, and policy responses. *Lancet Diab Endocrinol*. 2016;4(2):174–186. [https://doi.org/10.1016/S2213-8587\(15\)00419-2](https://doi.org/10.1016/S2213-8587(15)00419-2)
10. Consortium I. Consumption of sweet beverages and type 2 diabetes incidence in European adults: Results from EPIC-InterAct. *Diabetologia*. 2013;56(7):1520–1530. <https://doi.org/10.1007/s00125-013-2899-8>
11. Imamura F, O'Connor L, Ye Z, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: Systematic review, meta-analysis, and estimation of population attributable fraction. *BMJ*. 2015;351:h3576. <https://doi.org/10.1136/bmj.h3576>
12. Rodriguez LA, Madsen KA, Cotterman C, Lustig RH. Added sugar intake and metabolic syndrome in US adolescents: Cross-sectional analysis of NHANES 2005–2012. *Public Health Nutr*. 2016;19(13):2424–2434. <https://doi.org/10.1017/S1368980016000057>
13. Deshpande G, Mapanga RE, Essop MF. Frequent sugar-sweetened beverage consumption and the onset of cardiometabolic diseases: Cause for concern? *J Endocr Soc*. 2017;1(11):1372–1385. <https://doi.org/10.1210/js.2017-00262>
14. Basu S, Yoffe P, Hills N, Lustig RH. The relationship of sugar to population-level diabetes prevalence: An econometric analysis of repeated cross-sectional data. *PLoS One*. 2013;8(2):e57873. <https://doi.org/10.1371/journal.pone.0057873>
15. Lustig RH, Mulligan K, Noworolski SM, et al. Isocaloric fructose restriction and metabolic improvement in children with obesity and metabolic syndrome. *Obesity*. 2016;24(2):453–460. <https://doi.org/10.1002/oby.21371>
16. Schwarz JM, Noworolski SM, Erkin-Cakmak A, et al. Impact of dietary fructose restriction on liver fat, de novo lipogenesis, and insulin kinetics in children with obesity. *Gastroenterology*. 2017;153(3):743–752. <https://doi.org/10.1053/j.gastro.2017.05.043>
17. Sheiham AS, James WPT. A reappraisal of the quantitative relationship between sugar intake and dental caries: The need for new criteria for developing goals for sugar intake. *BMC Public Health*. 2014;14:863. <https://doi.org/10.1186/1471-2458-14-863>
18. Lindqvist A, Baelemans A, Erlanson-Albertsson C. Effects of sucrose, glucose and fructose on peripheral and central appetite signals. *Regul Pept*. 2008;150(1–3):26–32. <https://doi.org/10.1016/j.regpep.2008.06.008>
19. Garber AK, Lustig RH. Is fast food addictive? *Curr Drug Abuse Rev*. 2011;4(3):146–162. <https://doi.org/10.2174/1874473711104030146>
20. Wölnerhanssen BK, Meyer-Gerspach AC, Schmidt A, et al. Dissociable behavioral, physiological and neural effects of acute glucose and fructose ingestion: A pilot study. *PLoS One*. 2015;10(6):e0130280. <https://doi.org/10.1371/journal.pone.0130280>
21. Purnell JQ, Klopfenstein BA, Stevens AA, et al. Brain functional magnetic resonance imaging response to glucose and fructose infusions in humans. *Diab Obes Metab*. 2011;13(3):229–234. <https://doi.org/10.1111/j.1463-1326.2010.01340.x>
22. Stice E, Burger KS, Yokum S. Relative ability of fat and sugar tastes to activate reward, gustatory, and somatosensory regions. *Am J Clin Nutr*. 2013;98(6):1377–1384. <https://doi.org/10.3945/ajcn.113.069443>
23. Lustig RH. Food addiction? Or food and addiction? A scientific and legal analysis. *PLoS Biol*. In press 2018.
24. Singh GM, Micha R, Khatibzadeh S, et al. Estimated global, regional, and national disease burdens related to sugar-sweetened beverage consumption in 2010. *Circulation*. 2015;132(8):639–666. <https://doi.org/10.1161/CIRCULATIONAHA.114.010636>
25. Vreman RA, Goodell AJ, Rodriguez LA, et al. Health and economic benefits of reducing sugar intake in the United States, including effects via non-alcoholic fatty liver disease: A microsimulation model. *BMJ Open*. 2017;7(8):e103543. <https://doi.org/10.1136/bmjopen-2016-013543>
26. Morgan Stanley Research. Sustainable economics: The bittersweet aftertaste of sugar [homepage on the internet]. 2015 [cited 2018 Apr]. Available from: <http://static.latribune.fr/463077/etude-morgan-stanley-impact-diabete-sur-l-economie-mondiale.pdf>
27. Colchero MA, Rivera-Dommarco J, Popkin BM, Ng SW. In Mexico, evidence of sustained consumer response two years after implementing a sugar-sweetened beverage tax. *Health Aff*. 2017;36(3):564–571. <https://doi.org/10.1377/hlthaff.2016.1231>
28. Taubes G. *The case against sugar*. New York: Knopf; 2016.
29. Van Buul VJ, Tappy L, Brouns FJ. Misconceptions about fructose-containing sugars and their role in the obesity epidemic. *Nutr Res Rev*. 2014;27(1):119–130. <https://doi.org/10.1017/S0954422414000067>
30. Mozaffarian D, Hao T, Rimm EB, Willett WC, Hu FB. Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med*. 2011;364(25):2392–2404. <https://doi.org/10.1056/NEJMoa1014296>
31. Te Morenga L, Mallard S, Mann J. Dietary sugars and body weight: Systematic review and meta-analyses of randomised controlled trials and cohort studies. *BMJ*. 2013;346:e7492. <https://doi.org/10.1136/bmj.e7492>
32. Gulati S, Misra A. Sugar intake, obesity, and diabetes in India. *Nutrients*. 2014;6(12):5955–5974. <https://doi.org/10.3390/nu6125955>

33. Kearns CE, Schmidt LA, Glantz SA. Sugar industry and coronary heart disease research: A historical analysis of internal industry documents. *JAMA Intern Med.* 2016;176(11):1680–1685. <https://doi.org/10.1001/jamainternmed.2016.5394>
34. Kearns CR, Glantz SA, Schmidt LA. Sugar industry influence on the scientific agenda of the National Institute of Dental Research's 1971 National Caries Program: A historical analysis of internal documents. *PLoS Med.* 2015;12(3):e1001798. <https://doi.org/10.1371/journal.pmed.1001798>
35. Stuckler D, Ruskin G, McKee M. Complexity and conflicts of interest statements: A case-study of emails exchanged between Coca-Cola and the principal investigators of the International Study of Childhood Obesity, Lifestyle and the Environment (ISCOLE). *J Public Health Policy.* 2018;39(1):49–56. <https://doi.org/10.1057/s41271-017-0095-7>
36. Serôdio PM, McKee M, Stuckler D. Coca-Cola – A model of transparency in research partnerships? A network analysis of Coca-Cola's research funding (2008–2016). *Public Health Nutr.* 2018;21:1–4. <https://doi.org/10.1017/S136898001700307X>
37. Cozma AI, Sievenpiper JL, de Souza RJ, et al. Effect of fructose on glycemic control in diabetes: A systematic review and meta-analysis of controlled feeding trials. *Diab Care.* 2012;35(7):1611–1620. <https://doi.org/10.2337/dc12-0073>
38. Wang D, Sievenpiper JL, de Souza R, et al. Effect of fructose on postprandial triglycerides: A systematic review and meta-analysis of controlled feeding trials. *Atherosclerosis.* 2014;232(1):125–133. <https://doi.org/10.1016/j.atherosclerosis.2013.10.019>
39. Chiu S, Sievenpiper JL, de Souza RJ, et al. Effect of fructose on markers of non-alcoholic fatty liver disease (NAFLD): A systematic review and meta-analysis of controlled studies. *Eur J Clin Nutr.* 2014;68(4):416–423. <https://doi.org/10.1038/ejcn.2014.8>
40. Satija A, Yu E, Willett WC, Hu FB. Understanding nutritional epidemiology and its role in policy. *Adv Nutr.* 2015;6(1):5–18. <https://doi.org/10.3945/an.114.007492>
41. Lesser LI, Ebbeling CB, Goozner M. Relationship between funding source and conclusion among nutrition-related scientific articles. *PLoS Med.* 2007;4(1):e5. <https://doi.org/10.1371/journal.pmed.0040005>
42. Barclay AW, Brand-Miller J. The Australian paradox: A substantial decline in sugars intake over the same timeframe that overweight and obesity have increased. *Nutrients.* 2011;3(8):491–504. <https://doi.org/10.3390/nu3080734>
43. Martin P. Australian paradox author admits sugar data might be flawed [homepage on the Internet]. *Sydney Morning Herald.* 2014 [cited 2018 Apr]. Available from: <https://www.smh.com.au/healthcare/australian-paradox-author-admits-sugar-data-might-be-flawed-20140209-329h1.html>
44. Robertson R. Australian Paradox. n.p.; 2018.
45. Malhotra A, Noakes T, Phinney S. It is time to bust the myth of physical inactivity and obesity: You cannot outrun a bad diet. *Br J Sports Med.* 2015;49(15):967–968. <https://doi.org/10.1136/bjsports-2015-094911>
46. Aaron DG, Siegel MB. Supporting public health to deflect Coke and Pepsi sponsorship of national health organizations by two major soda companies. *Am J Prev Med.* 2017;52:20–30. <https://doi.org/10.1016/j.amepre.2016.08.010>
47. Waters R. Trump's pick to head CDC partnered with Coke, boosting agency's longstanding ties to soda giant [homepage on the Internet]. *Forbes.* 2017 [cited 2018 Apr]. Available from: <https://www.forbes.com/sites/robwaters/2017/07/10/trumps-pick-to-head-cdc-partnered-with-coke-boosting-agencys-longstanding-ties-to-soda-giant/#3bb6da2657b5>
48. O'Connor A. Coca-Cola funds scientists who shift blame for obesity away from bad diets. [homepage on the Internet]. *The New York Times.* 2015 [cited 2018 Apr]. Available from: <https://well.blogs.nytimes.com/2015/08/09/coca-cola-funds-scientists-who-shift-blame-for-obesity-away-from-bad-diets/>
49. Waters R. The Coca-Cola Network: Soda giant mines connections with officials and scientists to wield influence [homepage on the Internet]. *Forbes.* 2017 [cited 2018 Apr]. Available from: <https://www.forbes.com/sites/robwaters/2017/07/11/the-coca-cola-network-soda-giant-mines-connections-with-officials-and-scientists-to-wield-influence/#219936f2185c>
50. Simon M. And now a word from our sponsors: Are America's nutrition professionals in the pocket of Big Food? [homepage on the Internet]. *Eat Drink Politics.* 2013 [cited 2018 Apr]. Available from: http://www.eatdrinkpolitics.com/wp-content/uploads/AND_Corporate_Sponsorship_Report.pdf
51. Action BM. Nestle boycott [homepage on the Internet]. 2018 [cited 2018 Apr]. Available from: <http://www.babymilkaction.org/nestlefree>
52. Pomeranz JL. The bittersweet truth about sugar labeling regulations: They are achievable and overdue. *Am J Public Health.* 2012;102(7):e14–e20. <https://doi.org/10.2105/AJPH.2012.300732>
53. Jones NR, Conklin AI, Subrcke M, Monsivais P. The growing price gap between more and less healthy foods: Analysis of a novel longitudinal UK dataset. *PLoS One.* 2014;9(10):e109343. <https://doi.org/10.1371/journal.pone.0109343>
54. Cubanski J, Neuman T. The facts on medicare spending and financing [homepage on the Internet]. *Henry J Kaiser Family Foundation.* 2017 [cited 2018 Apr]. Available from: <https://www.kff.org/medicare/issue-brief/the-facts-on-medicare-spending-and-financing/>
55. Institute CSR Sugar: Consumption at a crossroads [homepage on the Internet]. 2013 [cited 2018 Apr]. Available at: http://wphna.org/wp-content/uploads/2014/01/13-09_Credit_Suisse_Sugar_crossroads.pdf
56. Collaboration. GBoMRFCD Cardiovascular disease, chronic kidney disease, and diabetes mortality burden of cardiometabolic risk factors from 1980 to 2010: A comparative risk assessment. *Lancet Diabetes Endocrinol.* 2014;2(8):634–647. [https://doi.org/10.1016/S2213-8587\(14\)70102-0](https://doi.org/10.1016/S2213-8587(14)70102-0)

57. Trigg N. NHS ranked 'number one' health system [homepage on the Internet]. BBC News. 2017 [cited 2018 Apr]. Available from: <http://www.bbc.com/news/health-40608253>
58. Federal Trade Commission. In the matter of Sugar Information, Inc., et al. FTC Decisions [homepage on the Internet]. 1972 [cited 2018 Apr]; pp. 711–724. Available from: https://www.ftc.gov/sites/default/files/documents/commission_decision_volumes/volume-81/ftc_volume_decision_81_july_-_december_1972pages_678-778.pdf#page=34
59. Commission FT. Advertising to kids and the FTC: A regulatory retrospective that advises the present [homepage on the Internet]. 2002 [cited 2018 Apr]. Available from: https://www.ftc.gov/sites/default/files/documents/public_statements/advertising-kids-and-ftc-regulatory-retrospective-advises-present/040802adstokids.pdf
60. Ahmed A, Richtel M, Jacobs A. In NAFTA talks, US tries to limit junk food warning labels [homepage on the Internet]. The New York Times. 2018 [cited 2018 Apr]. Available from: <https://www.nytimes.com/2018/03/20/world/americas/nafta-food-labels-obesity.html>
61. Barrington M. Guest Choice Network – Privileged and confidential [homepage on the Internet]. PR Watch. 1996 [cited 2018 Apr]. Available from: <https://web.archive.org/web/20070927191427/http://www.prwatch.org/documents/berman/pm300k.pdf>
62. Lipton E. Hard-nosed advice from veteran lobbyist: 'Win ugly or lose pretty'. Richard Berman energy industry talk secretly taped [homepage on the Internet]. The New York Times. 2014 [cited 2018 Apr]. Available from: <https://www.nytimes.com/2014/10/31/us/politics/pr-executives-western-energy-alliance-speech-taped.html>
63. Transparify. How transparent are think tanks about who funds them 2016? [homepage on the Internet]. 2016 [cited 2018 Apr]. Available from: <https://static1.squarespace.com/static/52e1f399e4b06a94c0cdaa41/t/5773022de6f2e1ecf70b26d1/1467154992324/Transparify+2016+Think+Tanks+Report.pdf>
64. University of California San Francisco Library. American friends of the IEA [homepage on the Internet]. Truth Tobacco Industry Documents. 2018 [cited 2018 Apr]. Available from: <https://www.industrydocumentslibrary.ucsf.edu/tobacco/docs/#id=ttjy0045>
65. Snowdon C. Decline in physical activity to blame for rise in obesity [homepage on the Internet]. Institute for Economic Affairs. 2016 [cited 2018 Apr]. Available from: <https://iea.org.uk/in-the-media/media-coverage/decline-in-physical-activity-to-blame-for-rise-in-obesity>
66. Diehr P, Derleth A, Cai L, Newman AB. The effect of different public health interventions on longevity, morbidity, and years of healthy life. BMC Public Health. 2007;7:52. <https://doi.org/10.1186/1471-2458-7-52>
67. Tobacco tactics [homepage on the Internet]. Christopher Snowdon. [cited 2018 Apr]. Available from: http://www.tobaccotactics.org/index.php/Christopher_Snowdon
68. Brownell KD, Kersh R, Ludwig DS, et al. Personal responsibility and obesity: A constructive approach to a controversial issue. Health Aff. 2010;29(3):379–387. <https://doi.org/10.1377/hlthaff.2009.0739>

SMALL INTESTINAL BACTERIAL OVERGROWTH (SIBO) TREATMENT: HOPE FOR IRRITABLE BOWEL SYNDROME SUFFERER



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ABSTRACT

Irritable bowel syndrome (IBS) often thought to be psychological in origin is now understood to have multifactorial origins because of the realisation that gut dysbiosis, including SIBO, causes IBS. SIBO is a condition characterised by microbial overload in the small intestine leading to fermentation of starches and carbohydrates producing gases, inflammation and microvilli damage in the small intestine. A significant proportion of IBS sufferers also have SIBO. Many providers may not be aware of SIBO. This case history highlights a clinical case of IBS and SIBO including history, clinical presentation, diagnostic workup and treatment. Management involved an integrative medicine, patient centred, SIBO treatment protocol targeting gut microbes with diet, antibiotics, probiotics, prokinetics, supplements and biofilm disruptors. Prevalence and pathophysiology will also be discussed.

Key Words

SIBO, IBS, FODMAPS, RIFAXIMIN, NEOMYCIN, PROBIOTICS, BREATH TESTS, PROKINETICS.

INTRODUCTION

IBS is a very common condition encountered in general and gastroenterological practice, yet it is poorly understood hence poorly treated. IBS and SIBO are both characterised by abdominal discomfort, bloating, constipation and/or diarrhoea. Up to 78% of patients with IBS also have SIBO.

⁽¹⁾ SIBO is a condition where bacteria normally found in the large intestine have overgrown in the small intestine. These bacteria then ferment starch molecules producing gas, inflammation and microvilli damage. This in turn leads to nutrient malabsorption, intestinal permeability, systemic symptoms and damage to the migrating motor complex. ⁽²⁾

This case review article will highlight the history, epidemiology, pathophysiology, clinical presentation, diagnosis and patient centred holistic treatment approach with supporting literature evidence for this under-recognized condition.

CASE PRESENTATION

RB is a 31 year-old woman who presents with a diagnosis of Irritable Bowel Syndrome (IBS) from which she has been suffering for over 15 years. She reported symptoms of wind, bloating (worse by the end of the day and over the lower abdomen), nausea, constipation predominantly and occasional diarrhoea. She had an endoscopy and colonoscopy the previous year where no abnormalities were detected except gastritis and she was negative for *Helicobacter Pylori*. She was prescribed pantoprazole for this.

Her past medical history included: PCOS, Insulin Resistance, Asthma, Fatty Liver, Vitamin D deficiency and lactose intolerance. Her past surgical history included: Tonsillectomy and adenoidectomy in 1994, D&C in 2011, 2 c-sections in 2012 and 2014, Laparoscopy in 2015, Ankle fracture with open reduction and internal fixation in 2018 requiring antibiotics. She is taking metformin 1000mg daily. Allergies include erythromycin, cephalexin monohydrate, grass, pollen, dust mites and birds. Family history includes PCOS (both sisters), IBS (one sister), and type 2 diabetes (brother). MUM is insulin resistant. She is an ex-smoker and drinks alcohol 2-3 glasses 1-2 times per week.

Nutritionally she skips breakfast and has a soy coffee. Morning tea consisted of black tea no sugar. Lunch typically consisted of a salad or miso soup. Afternoon tea a piece of fruit or cheese. Dinner included protein like salmon, chicken or meat and a salad. She did eat processed foods and drank 2 diet drinks per day. She cooks with rice bran or olive oil. She did not exercise and has low sun exposure.

She works as a medical receptionist. Mentally she suffers anxiety and over worry. She complains of fatigue and poor sleep getting 5-6 hours per night. She suffered frequent headaches. She also complained of myalgia, cramps and muscle twitching. Her symptoms also included dry skin, nail biting, hair thinning, and generalised pruritis. Her menstrual cycles occurred every 33 days with a heavy first day and she complained of symptoms of premenstrual stress and mastalgia.

On examination she had an ectomorphic body type. She

weighed 120.7 kgs with a BMI of 46.6.

She had rings under her eyes and nasolabial flakiness. She had crimson crescents on her pharynx. Her tongue looked large with crevices. She had dry and cracked heels. Abdomen was soft but tender over the liver and below the umbilicus.

SIGNIFICANT INVESTIGATION RESULTS INCLUDED:

- GGT 40, AST 42, ALT 59 (all elevated)
- Fasting glucose 5.1 Insulin 18 HbA1c 5.7 % (insulin resistant)
- Ferritin 36 (suboptimal)
- CRP 6.1 (elevated)
- Day 21 LH 2 FSH 4.5 Oestradiol 580 Progesterone 30 Testosterone 1.1 SHBG 52 (oestrogen dominant)
- TSH 1.3
- Vitamin D 53 (suboptimal)
- Homocysteine 6.9 B12 477 Folate 27.1
- Ceruloplasmin 0.33 Copper 22 Free copper 29%
- Histamine 1.2 (undermethylated biotype)
- Zinc 12.6 (suboptimal)
- SIBO lactulose test;
- Hydrogen 29 point rise over first 100 minutes (positive)
- Methane 13 point rise over first 100 minutes (positive)
- Combined 42 point rise over first 100 minutes (positive)
- All values continued to rise over the next 80 minutes thereafter.

She was educated about the SIBO phase 1 reduce and repair protocol.⁽²⁾ She was put on a restricted diet for 6 weeks to reduce fermentable starches and fibres (low FODMAP and specific carbohydrate diet.^(2,3) All grains, legumes, dairy, sugar, certain vegetables, canned, processed and fermented foods were avoided. She was also prescribed betaine Hcl + pepsin which she would titrate at evening meals until she felt epigastric burning plus a digestive enzyme with each meal.⁽⁵⁾ She was supplemented with vitamins ADEK and Zinc carnosine.^(4,5)

On her next visit her gut was much improved and she was opening her bowels regularly and had no wind or pain. Phase 2 of the SIBO biphasic protocol was started⁽¹⁾ i.e. Remove and Restore. The diet was relaxed with the allowance of some rice, quinoa, lentils, red and green beans and legumes. Rifaximin 550 mg tds for 10 days was prescribed plus Neomycin 500mg bd for 10 days to remove the remaining overgrown bacteria.^(5,6) Iberogast was prescribed as a prokinetic⁽⁷⁾ with N acetyl cysteine for biofilms.^(5,8)

Following the antimicrobials she was to take a non D lactate probiotic containing L. Rhamnosus GG, Bifidobacterium Lactis, Bifidobacterium breve and Bifidobacterium longum.⁽⁹⁾ She was also compounded a nutritional containing vitamins C, B6, D, E, A, methylcobalamin, chromium, molybdenum, Selenium, Zinc and magnesium with SAME for her undermethylation and copper dominance. She was advised to start some DIM and vitex agnew for her oestrogen dominance.

By her next consult her gut symptoms had completely resolved and she had lost 6.7 kg. She was advised to introduce food groups again one by one and gradually increase fibre. She was educated about more regular healthy eating for the long run and to include predominantly vegetables, 2 fruits per day, healthy fats, natural nuts and seeds, organic grass fed and free-range meats, chicken, eggs, and regular fish in her diet (salmon sized or smaller). She was to minimise refined carbohydrates and advised to exercise regularly and get more sun exposure. She was also educated about avoiding xenoestrogens.

Her gastrointestinal symptoms would be monitored closely as would her weight, fasting glucose and insulin levels, CRP, vitamin D, copper, zinc and liver function and mood.

DISCUSSION

SIBO is defined as having $\geq 1 \times 10^5$ bacteria [i.e. colony-forming units (cfu)] on proximal jejunal aspirate.⁽⁴⁾ Upper gut aspirate is the gold standard in diagnosing SIBO however it is limited by invasiveness, cost, contamination by oropharyngeal flora and inability to culture. Culture difficulties arise because bacterial overgrowth may be more distal in the gut and anaerobic bacteria will not grow if air is used in endoscopy instead of CO₂ or Nitrogen.⁽¹⁾

Breath tests are more user friendly, less invasive, readily available and cheaper. In this case a hydrogen breath test was used to make the diagnosis. When anaerobic colonic bacteria colonize the small intestine, as in SIBO, fermentation of carbohydrates (ingested lactulose in this case) in the small intestine produces a large and premature amount of hydrogen and/or methane gas. 20% of gas produced in this manner diffuses into the systemic circulation and is excreted via the lungs in expelled air.⁽⁴⁾

Breath samples are collected every 20 minutes for 3 hours after ingesting lactulose and a positive test is defined as a hydrogen rise of more than 20ppm or methane rise of over 10ppm or a combined score of > 15ppm in the first 90 minutes⁽¹⁰⁾. However, this test has its limitations and only has a sensitivity of 31% to 68% and specificity of 65% to 97.9%⁽¹⁾. Most problems relate to fast gut transit times however this patient suffered constipation making the diagnosis more likely.

Gastric acid, the migrating motor complex, the intestinal mucosa, the gut-immune system, enzymes, commensal bacteria and the physical barrier of the ileocecal valve are all in place to prevent SIBO. Anything disrupting these mechanisms can increase the risk of SIBO.⁽¹¹⁾

In this case factors contributing to the development of SIBO included PPI use, antibiotic use, female gender and gut motility disorder (chronic constipation).^(1,4)

Long term PPI use has been linked to SIBO because of gastric achlorhydria which can lead to oral microbes penetrating the proximal gut.^(1,4) The migratory motor complex (MMC) is responsible for sweeping material through the GI tract. Abnormalities in the MMC predispose SIBO because bacteria may not be effectively swept from the proximal bowel into the colon. Regulation of the MMC is complex and involves various hormones and activation of the enteric and parasympathetic nervous systems. Methane acts like a neuromuscular transmitter to slow intestinal transit and its presence on a breath test is always associated with constipation.⁽¹²⁾

Secondary deficiency of lactase due to inflammation of the small bowel brush border is well known in patients with SIBO. This results in maldigestion of carbohydrates such as lactulose, sucrose and sorbitol (Lactose intolerance).⁽¹⁾

Evidence from recent studies does show that gut dysbiosis may contribute to development of SIBO. Recurrent antibiotic use and alteration in the gut microbiome could be a contributing factor here.^(1,4)

This patient complained of systemic systems like muscle pain, fatigue and anxiety. SIBO is known to produce inflammation secondary to bacterial adhesion, enterotoxin production and cellular injury.⁽¹⁾ SIBO can also lead to a damaged intestinal lining and malabsorption of; fat soluble vitamins ADEK, B12 and protein deficiencies as well as carbohydrate malabsorption.⁽⁴⁾

The management of SIBO in this case was based on the SIBO biphasic diet developed by Dr Nirala Jacoba and based on the work of Dr. Siebecker of the SIBO Centre for Digestive Health (Portland, OR) which is a combination of the Specific Carbohydrate Diet and Low FODMAP Diet.⁽²⁾

The first 6 weeks consists of reducing fermentable starches and fibres which starves the abnormal bacteria. This allows the gut lining to repair with digestive support. In this case digestive enzymes were used as well as hydrochloric acid to assist with deficient brush border enzymes and likely hypochlorhydria.⁽⁵⁾ Fat soluble vitamins were given⁽⁴⁾ as well as zinc carnosine to support immune function and stimulate small bowel repair.⁽¹³⁾

After 6 weeks Rifaximin and Neomycin were used to remove the overgrown bacteria. Rifaximin is a semi-synthetic, nonabsorbable antimicrobial agent that acts against Gram positive and Gram negative aerobic and anaerobic bacteria and shown in studies to be the superior antibiotic in SIBO.⁽¹⁾ Rifaximin has minimal side effects. Rifaximin, has an overall breath test normalization rate of 49.5% (95% CI: 44.0–55.1) in eight clinical trials.⁽¹¹⁾ Rifaximin works best in hydrogen predominant cases. However in one study of the subjects with methane positive breath test receiving the treatment of rifaximin and neomycin (n=27), 85% had a clinical response, compared with 63% of subjects in the neomycin only group (n=8) (P=0.15) and 56% of subjects in the rifaximin only

group (n=39) (P=0.01).⁽⁶⁾

The diet was still low fibre after 6 weeks however the diet became less restrictive to allow for some bacterial overgrowth so the antimicrobials could be more effective.

At this point prokinetics were introduced in the form of Iberogast to restore the MMC. Iberogast has been shown to be beneficial in IBS sufferers.⁽⁷⁾ As previously mentioned, the migrating motor complex is thought to be disrupted in the case of SIBO, and agents that activate the MMC are essential for preventing recurrence. She was advised to continue for 6 months.⁽⁵⁾

After the antimicrobials N acetyl cysteine (NAC) was given as an adjunctive biofilm treatment.⁽⁸⁾ Biofilms are a protective mucus which are secreted by the overgrown bacteria. Heavy die off can occur if NAC initiated at the same time as the antimicrobials.⁽⁵⁾

Probiotics are thought to enhance gut barrier function, decrease inflammation, stabilize gut flora and potentially modulate visceral hypersensitivity. In one study there was clinically significant improvements in IBS patients treated with probiotics vs placebo.⁽¹⁴⁾

A non-D-lactate producing probiotic was advised for this patient after the antimicrobials. SIBO is associated with bacterial toxin production including lactic acid and some probiotics further produce lactic acid.⁽⁹⁾

CONCLUSION

There are a multitude of studies recognising SIBO as a contributing factor in the majority of IBS cases. As demonstrated SIBO is difficult to treat and requires a dedicated patient. It is best treated using an integrative approach as conventional and complementary therapies provide significant relief for the sufferer. The bad news is it often recurs, so practitioners need to remain vigilant and repeat testing and/or the biphasic protocol if necessary. More clinicians need to be made aware of the condition and educated about treatment protocols. More sensitive and specific diagnostic methods are required however and further studies required for prevention.

References

1. Uday C. Ghoshal, Ratnakar Shukla, and Ujjala Ghoshal. *Small Intestinal Bacterial Overgrowth and Irritable Bowel Syndrome: A Bridge between Functional Organic Dichotomy*. Gut Liver. 2017 Mar; 11(2): 196–208.
2. Jacobi, N, 2017. *The SIBO Bi-Phasic Diet*, 1st Ed [PDF]. <https://sibotest.com/practitioners/handouts>.
3. Vincenzi M, Del Ciondolo I, Pasquini E, Gennai K, Paolini B. *Effects of a Low FODMAP Diet and Specific Carbohydrate Diet on Symptoms and Nutritional Adequacy of Patients with Irritable Bowel Syndrome: Preliminary Results of a Single-blinded Randomized Trial*. J Transl Int Med. 2017 Jun 30;5(2):120-126. doi: 10.1515/jtim-2017-0004. eCollection 2017 Jun.
4. Andrew C. Dukowicz, MD, Brian E. Lacy, PhD, MD, and Gary M. Levine, MD. *Small Intestinal Bacterial Overgrowth*, A Comprehensive Review. Gastroenterol Hepatol (N Y). 2007 Feb; 3(2): 112–122.
5. Jacobi, N, 2014. *The Natural Treatment Protocol for SIBO*, 1st Ed [PDF]. <https://sibotest.com/practitioners/handouts>.
6. Low K1, Hwang L, Hua J, Zhu A, Morales W, Pimentel M. *A combination of rifaximin and neomycin is most effective in treating irritable bowel syndrome patients with methane on lactulose breath test*. J Clin Gastroenterol. 2010 Sep;44(8):547-50.
7. Bertram Ottillinger, Martin Storr, Peter Malferttheiner, and Hans-Dieter Allescher. *STW5 (iberogast), a safe and effective standard in the treatment of functional gastrointestinal disorders*. Wien Med Wochenschr. 2013 Feb; 163(3-4): 65–72.
8. Dinicola S1, De Grazia S, Carlomagno G, Pintucci JP. *N-acetylcysteine as powerful molecule to destroy bacterial biofilms. A systematic review*. Eur Rev Med Pharmacol Sci. 2014 Oct;18(19):2942-8.
9. Satish S. C. Rao, MD, PhD, FRCP (LON), Abdul Rehman, MD, Siegfried Yu, MD, and Nicole Martinez de Andino, ARNP. *Brain foginess, gas and bloating: a link between SIBO, probiotics and metabolic acidosis*. Clin Transl Gastroenterol. 2018 Jun; 9(6): 162.
10. Ali Rezaie, MD, MSc, FRCP(C),1,* Michelle Buresi, MD,2 Anthony Lembo, MD,3 Henry Lin, MD,4 Richard McCallum, MD,5 Satish Rao, MD,6 Max Schmulson, MD,7 Miguel Valdovinos, MD,8 Salam Zakko, MD,9 and Mark Pimentel, MD, FRCP(C)1, on behalf of The North American Consensus group on hydrogen and methane-based breath testing. *Hydrogen and Methane-Based Breath Testing in Gastrointestinal Disorders: The North American Consensus*. Am J Gastroenterol. 2017 May; 112(5): 775–784.
11. Shah SC, Day LW, Somsouk M, Sewell JL. *Meta-analysis: antibiotic therapy for small intestinal bacterial overgrowth*. Aliment Pharmacol Ther. 2013; 38:925-34.
12. Triantafyllou K, Chang C, Pimentel M. *Methanogens, methane and gastrointestinal motility*. J Neurogastroenterol Motil. 2014;20:31-40.
13. 1] Mahmood A, Fitzgerald AJ, Marchbank T, et al. *Zinc carnosine, a health food supplement that stabilises small bowel integrity and stimulates gut repair processes*. Gut 2007;56(2):168-175.
14. P Moayyedi1, A C Ford1, et al . *Irritable bowel syndrome. The efficacy of probiotics in the treatment of irritable bowel syndrome: a systematic review* Gut 2010;59:325-332

MENOPAUSE AND MOOD DISTURBANCE; A CASE STUDY



Author:

Dr Fi Darracott-Cankovic

ABSTRACT

This case report describes the assessment and treatment of perimenopausal hot flushes, sleep disturbance and new onset anxiety and depression in a 43 year old woman. Prior to the onset of perimenopause she had never experienced mood or sleep disorders. The integrative medical approaches to investigation and management of her symptoms are discussed in this case.

Keywords: Menopause, Anxiety, Depression, Hot flushes

INTRODUCTION

Natural menopause is defined by the permanent cessation of menstrual periods and occurs at an average age of 51 years. Perimenopause begins on average four years before the final menstrual period and includes a number of changes that may affect a woman's quality of life. It is characterized by irregular menstrual cycles and marked hormonal fluctuations, often accompanied by hot flushes, sleep disturbances, fatigue and mood symptoms. A number of reports indicate there is significant increased risk of new-onset depression and anxiety in woman during perimenopause, with higher symptom severity.^{1,2,3,4} There are indications that vasomotor symptoms are positively related to depressive symptoms during menopausal transition.⁴ In addition, psychological distress is usually seen more in females with disturbed sleep.²

Studies have shown that lifestyle and diet adjustment interventions can significantly ameliorate menopausal symptoms.⁵

CASE PRESENTATION

Mrs KR came to see me regarding difficulties with menopausal symptoms and new onset mood disturbance. She was 43 years old, married with 2 young children and worked in a busy office. About 2 years ago she had started having hot flushes, mainly at night. These were becoming more frequent and severe, now also happening during the day. Her sleep patterns were disturbed by the hot flushes, often waking her 3 or more times per night, drenched in sweat. Her periods had become less and less frequent and her last period was over 6 months ago. When her flushes first started she reported feeling irritable and having quite marked

mood swings; in the past few months she had also developed crippling anxiety and depressed mood. This was partly related to some very stressful situation at work, but she felt her anxiety levels had now spiralled out of proportion to her stress levels. In addition she had physical symptoms including heartburn and reflux, loss of appetite, diarrhoea, palpitations and difficulty concentrating. She was seeing less of her friends and had lost interest in many of her hobbies. Her libido was decreased and her energy levels were very low. Prior to the onset of perimenopause she described herself as a calm, positive and happy person with no tendencies toward anxiety or depression.

She had a past history of appendicitis age 6, which caused severe peritonitis and abdominal adhesions. During adult life she developed IBS and had recurrent bouts of gastroenteritis and giardiasis when travelling overseas. Her first child was conceived spontaneously, age 31, followed by an ectopic pregnancy and loss of fallopian tube age 36 and IVF treatment for her second child due to tubal infertility at age 38.

Her lifestyle included working 4 days a week, eating a healthy plant-based diet, organic when possible, drinking 4-5 cups of tea a day, exercising once a week and sleeping for 6-7 hours a night (with frequent waking throughout the night). Her alcohol intake was minimal due to it triggering an immediate increase in hot flushes.

Examination was unremarkable with no significant findings:

- BP 100/60, HR 68bpm, BMI 24
- Her blood tests were as follows:
- FSH 39.9, LH 36.2, oestrogen 539 (consistent with perimenopause)
- TSH 0.41, T4 14, T3 4.7
- HbA1c 34
- Ferritin 51
- Full blood count, renal and liver function – normal range
- B12 208, folate 32 (B12 levels suboptimal, aim for >300)
- Vitamin D 84

- Homocysteine 9.8 (above ideal level, may indicate methylation issues)
- Comprehensive stool analysis – (undertaken in view of significant gastrointestinal history from childhood, previous IBS and parasite infections and current gastric symptoms)
- Results showed presence of *blastocystis hominis*, low stool pH indicating acidity and partially undigested food.
- Treatment plan included the following measures:
- At the time of presentation she had been under prolonged stress at work and led a very sedentary lifestyle. Therefore it was important that she made some significant changes to her lifestyle, implementing stress management strategies and regular exercise. We aimed to increase exercise to 5 times a week (aerobic exercise and yoga) and meditation or mindfulness practice every day if possible.
- Increased phyto-sterol rich foods such as beans, lentils, nuts, seeds (especially flaxseed), organic soy, brassica family vegetables. It was advised that she took time to eat in a relaxed and mindful manner, chewing carefully and allowing meal times to be another source of relaxation and enjoyment.
- Reduce tea and replace with herbal tea or water as caffeine intake is linked to increased menopausal hot flushes.
- Omega 3 oils 1g twice daily
- Vitamin E 500 IU mixed tocopherols
- Inflamood (containing BCM turmeric and saffron) twice daily
- Magnesium bisglycinate 400mg, vitamin c 500mg and B-vitamins including P5P (calmX powder) twice daily
- Pomegranate herbal tincture and *Sacharomyces Boulardii* probiotic for treatment of *blastocystis*,
- Slippery elm and aloe vera to help soothe her reflux and gastritis symptoms.

She was followed up a month after starting this treatment protocol and reported significant improvements in her mood and sense of wellbeing. Her hot flushes had decreased in frequency to once or twice a night. She was sleeping a bit better but still felt tired.

We met again 2 months later and the improvements had continued. She was no longer having any digestive problems. Her energy levels were restored and her mood was back to what she considered normal. She was able to tolerate the occasional hot flush at night and felt that she was coping well now with this transitional stage of life.

DISCUSSION

Hot flushes are the most common symptom of the climacteric and are reported as feelings of intense warmth along with sweating, flushing, and chills. Sweating is generally reported in the face, neck and chest. They usually last for 1 to 5 minutes, with

some lasting as long as an hour.⁶

The perspiration and vasodilatation associated with hot flushes appears to be controlled by the thermoregulatory nucleus. This area in the brain regulates core body temperature and works to keep it within a homeostatic range called the thermoregulatory zone.⁷ Hot flushes are triggered if body temperatures are elevated or sweating thresholds are lowered.⁸ Women who suffer from hot flushes appear to have a thermoregulatory zone that is narrower and thus small increases in core body temperature can trigger hot flushes.⁹

Norepinephrine and serotonin may be involved in the pathway controlling this zone.⁹ It is proposed that elevated brain norepinephrine narrows the thermoregulatory zone.⁸ Activation of specific serotonin receptors can cause hypo- or hyperthermia.¹⁰ Oestrogen withdrawal is associated with decreasing levels of serotonin and an increase in serotonin receptors in the hypothalamus.^{11,12} One proposed model for the pathogenesis of hot flushes is oestrogen withdrawal leads to a decrease in endorphin and catecholeamine levels. This in turn leads to increased norepinephrine and serotonin release, which lowers the set point in the thermoregulatory nucleus, thus increasing the likelihood of hot flushes.¹¹

Conventional medical treatment of hot flushes comprises of hormone replacement therapy (HRT) with synthetic oestrogen and progestagens.¹³ This type of treatment has evolved with the theory of replacing the falling oestrogen levels that occur during menopause. There is good evidence of effectiveness but these treatments also carry significant side effects and risks including increased risk of breast cancer.¹⁴ On stopping treatment women are likely to re-develop hot flushes; which can persist for many more years.

For a variety of reasons, including the risks of HRT, and an increasing awareness of nutritional and holistic options for treatment, it is thought that between 50-75% of postmenopausal women use complementary and alternative therapies for management of menopausal symptoms.^{15,16}

While trying to adopt an integrated approach to menopausal symptoms there are broader networks of hormones and factors to take into consideration than just oestrogen and progesterone levels. These factors include HPA dysfunction, inflammation, the microbiome, other endocrine glands such as the thyroid, diet and lifestyle factors including stress levels.

There are a variety of plant-based therapies used for hot flushes including isoflavones (dietary or supplements) vitamins and herbal therapies.

Two types of isoflavones, genistein and daidzein, are found in soybeans, chickpeas, and lentils and are thought to be the most potent oestrogens of the phytoestrogens (although they are much weaker than human oestrogens). Lignans (eg. enterolactone and enterodiol) are found in flaxseed, lentils, grains, fruits, and vegetables. In a review of 11 randomized clinical trials of soy or isoflavone supplementation, only three of eight trials with at least six weeks of follow-up demonstrated a beneficial effect.¹⁷

A 2013 systematic review of 43 clinical trials found no beneficial effect of phytoestrogens of any type on hot flashes, with the exception of genistein.¹⁸ Results of four genistein trials suggested

that doses >30 mg/day might reduce hot flash frequency compared with placebo.

Magnesium is a key nutrient which is frequently deficient in women suffering from hormonal issues. In symptomatic menopause levels of magnesium have been shown to be lower than in asymptomatic matched controls. It is needed as a co-factor in more than 300 enzyme systems and it is an anti-inflammatory agent, with deficiency of this mineral a driver for chronic low grade inflammation.¹⁹

In a trial Vitamin E was shown to be effective in the treatment of hot flushes at a dose of 400 IU/daily.²⁰

Mind-body practices including yoga, tai-chi and meditation have been shown to improve overall menopausal and vasomotor symptoms. Mindfulness based stress reduction strategies are found to improve sleep, mood and hot flushes. CBT and aerobic exercise has been shown to reduce hot flushes and insomnia in peri- and post-menopausal women.^{21,22}

In addition to the contribution of fluctuating hormonal levels I was interested in addressing other causes of anxiety and low mood in my patient, and relevant avenues for nutritional interventions.

This case study includes both menopausal symptoms and mood disturbance and there is a lot of overlap and interplay between the two conditions. With regards to depression there are new models for depression which go far beyond simple neurotransmitter disturbances. Several dysregulated pathways have been identified including HPA activity and neuroinflammation. Stress causes the activation of the HPA axis, a mechanism to overcome acute stress. The chronic stress this patient has encountered at work is maladaptive and can drive depression. The use of Inflamood (containing curcumin and saffron) to treat the mood disturbance is based on traditional herbal applications. Curcumin is a potent antioxidant and antimicrobial and prevents stress-induced elevation of cortisol in animal studies. Saffron is thought to reduce HPA activity due to reducing plasma corticosterone levels. They both have a broad inhibitory effect on the inflammatory cascade.^{23,24}

In view of the fact that symptomatic menopausal women have elevated noradrenaline pathways when compared to asymptomatic women, mitigating sympathetic drive may well help reduce hot flushes in addition to reducing mood disturbances.

Vitamin C supplementation has been shown to lead to reduced anxiety in several studies.²⁵ Mechanisms include buffering the physiological stress response, modulation of catecholaminergic activity and restoring the vagal tone of the heart.

Dysbiosis and role of the GIT microbiome with relation to chronic parasitic infection and inflammation may well be another driver of her anxiety and depression via the enteric nervous system. Curcumin can be used to treat dyspeptic complaints and digestive problems so should improve her gut health in addition to mood. Pomegranate has antiparasitic properties as well as being anti-inflammatory²⁶ and inhibits bacterial biofilms so should be beneficial in the treatment of blastocystis infection and dysbiosis.

CONCLUSIONS

The integrative treatment of menopausal symptoms is a rewarding area of practice as the conventional treatments are limited and concern many women with the side effects and risks. It is apparent that there are many factors at play beyond simple oestrogen and progesterone levels; thus providing much scope for dietary, lifestyle and nutritional measures to have a positive impact.

References:

1. Diana C. Depression and emotional aspects of the menopause. *BCM J*. 2001 Oct;43(8): 463-466
2. Bromberger JT et al. Psychologic distress and natural menopause: A multiethnic community study. *American Journal of Public Health*. 2001 Sep; 91(9):1435-1444.
3. J Vivian-Taylor et al. Menopause and Depression: Is there a link? *Maturitas*. 2014 Oct; 179 (2): 142-46
4. de Kruif M et al. Depression during the perimenopause: A meta-analysis. *Journal of Affective Disorders*. 2016 July; 206: 174-80
5. McKee J, Warber SL. Integrative therapies for menopause. *South Med J* 2005;98 (3):319-26
6. Kronenberg F. Hot flashes: epidemiology and physiology. *Ann. N Y Acad. Sci*. 1990;592:52–86.
7. Casper RF, Yen SS. Neuroendocrinology of menopausal flushes: an hypothesis of flush mechanism. *Clin Endocrinol (Oxf)* 1985;22(3):293–312.
8. Freedman RR. Physiology of hot flashes. *Am J Hum Biol*. 2001;13(4):453–464.
9. Freedman RR, Krell W. Reduced thermoregulatory null zone in postmenopausal women with hot flashes. *Am J Obstet Gynecol*. 1999;181(1):66–70.
10. Berendsen HH. The role of serotonin in hot flushes. *Maturitas*. 2000;36(3):155–164.
11. Shanafelt TD, Barton DL, Adjei AA, Loprinzi CL. Pathophysiology and treatment of hot flashes. *Mayo Clin Proc*. 2002;77(11):1207–1210.
12. Sturdee DW. The menopausal hot flush – anything new? *Maturitas*. 2008;60(1):42–49.
13. Nelson HD. Menopause. *Lancet* 2008;371 (9614):760-70.
14. Van Horn L et al. The Women's Health Initiative: implications for clinicians. *Cleve Clin J Med* 2008;75 (5):385-90.
15. Newton KM, Buist DS, Keenan NL, et al. Use of alternative therapies for menopause symptoms: results of a population-based survey. *Obstet Gynecol* 2002; 100:18.
16. Keenan NL, Mark S, Fugh-Berman A, et al. Severity of menopausal symptoms and use of both conventional and complementary/alternative therapies. *Menopause* 2003; 10:507.

17. Kronenberg F, Fugh-Berman A. Complementary and alternative medicine for menopausal symptoms: a review of randomized, controlled trials. *Ann Intern Med* 2002; 137:805.
18. Lethaby A, Marjoribanks J, Kronenberg F, et al. Phytoestrogens for menopausal vasomotor symptoms. *Cochrane Database Syst Rev* 2013; :CD001395.
19. Nielsen FH. Magnesium deficiency and increased inflammation: current perspectives. *Journal of Inflammation Research*. 2018;11:25-34
20. S. Ziaei et al. The effect of vitamin E on hot flashes in menopausal women. *Gynecol Obstet Invest* 2007; 64 (4):204-7.
21. Chairamonte D, et al. *Med Clin North Am*. 2017, Sep;101 (5) 955-975
22. Guthrie KA et al. *Sleep* 2018 Jan 1;41 (1)
23. Al-Karawi D, et al. The role of curcumin administration in patients with major depressive disorder. *Phytother Res*. 2016 Feb;30 (2): 175-83
24. Lopresti A, Drummond P. Saffron for depression: A systematic of clinical studies and examination of underlying mechanisms of action. *Hum Psychopharmacol*. 2014 Nov; 29(6): 517-27
25. Oliveira I et al. Effects of Oral Vitamin C Supplementation on Anxiety in Students: A Double-Blind, Randomized, Placebo-Controlled Trial. *Pakistan Journal of Biological Sciences*, 2015 18: 11-18.
26. Ismail T et al. Pomegranate peel and fruit extracts: A review of potential anti-inflammatory and anti-infective effects. *Journal of Ethnopharmacology*, 2012; 143: 397-405

ACNEM CONFERENCE HIGHLIGHTS

MELBOURNE 24-26 MAY 2019

ACNEM is excited to present the 9th Science of Nutrition in Medicine Conference, bringing you independent and up to date information on the most relevant topics of healthcare today.

Our conference presenters will cover current research on gut-immune and auto-immune mechanisms, metabolic biochemistry, hormones and a range of therapeutic diets including Ketogenic, Mediterranean, Low Carb, Paleo and FODMAPs. Our speakers will debate which dietary solutions can be used and customised to support different patient presentations to achieve metabolic changes for real effects on health.

For further information visit conference.acnem.org

Here we introduce you to three of our Speakers and their topics:

POLYCYSTIC OVARY SYNDROME, METABOLISM AND LIFESTYLE: PUTTING IT INTO PRACTICE

Dr Jim Parker

BMed, BSc, DRACOG, FRANZCOG

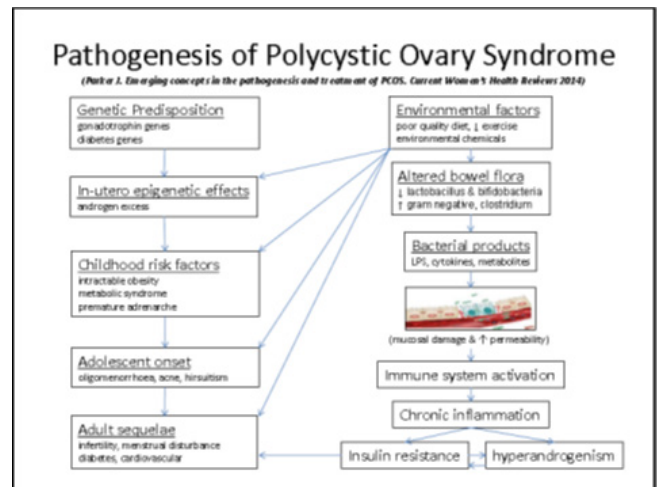
Dr Jim Parker's presentation 'Polycystic Ovary Syndrome, Metabolism and Lifestyle: Putting it into Practice' is designed to update health practitioners on the latest developments in the pathogenesis, diagnosis and management of Polycystic Ovary Syndrome (PCOS).

In his presentation, Dr Parker will present a case study that demonstrates the principals involved in the investigation and early diagnosis of PCOS in adolescents. He will also discuss "lifestyle-based" management approaches to many of the common symptoms seen in clinical practice.

PCOS is a common condition that affects approximately 350-500 million women worldwide. It is characterised by reproductive and metabolic problems that contribute to many of the leading causes of the chronic disease epidemic including obesity, diabetes, gestational diabetes, metabolic syndrome and cardiovascular disease. Symptoms of PCOS usually develop in adolescence and the diagnosis is often overlooked for many years. New international guidelines have recently been released to try to address this problem.

The pathogenesis of PCOS involves genetic and environmental factors. It is characterised by a polygenic inheritance pattern with contributions from the maternal and paternal genome. Emerging evidence suggests that nutritional and environmental exposures in-utero, and during childhood and adolescence, act as epigenetic

modulators that result in the phenotypic expression patterns seen in clinical practice (figure 1). All authoritative guidelines recommend addressing "lifestyle" factors as of primary importance in the prevention and management of the symptoms of PCOS and for prevention of the commonly associated metabolic complications.



The management of PCOS is often fragmented by consultation with a wide variety of medical professionals due to the diversity of symptoms experienced by patients. These include gynaecological, endocrine, dermatological, gastroenterological, cosmetic and psychological. Integrative Practitioners are ideally placed to provide holistic care by managing these problems using a "systems-based" approach to the whole patient.

Dr Jim Parker is an experienced Obstetrician and Gynaecologist with an interest in Nutritional and Environmental Medicine. His specialist clinical practice involved the management of High-Risk Pregnancies and he is a recognised expert in Gynaecological Endoscopic Surgery. He has published research articles on a wide range of topics in Obstetrics and Gynaecology including Emerging Trends in the Pathogenesis of PCOS, the Role of Environmental Chemicals in PCOS and the Chronic Disease Epidemic.

Dr Parker is a Nutritional and Environmental Medicine Health Researcher involved in the new discipline of Translational Medicine. He has been involved in medical education for over 35 years is passionate about bringing new advances in the science of Integrative Medicine to practitioners in clinical practice.

Dr Jim Parker will be presenting his talk on Saturday 25th May 11.30am – 12.00pm

WHY WHEN YOU EAT COULD BE AS IMPORTANT AS WHAT YOU EAT.

Nathan Rose

BHSc (Nat)

Here in Australia, we're still waging diet wars – arguing about whether the Keto or Paleo diet is best for our patients. While diet wars are still raging, an even hotter topic right now is chrono-nutrition, because when you eat could be just as important as what you eat – both for your overall health and for weight loss!

The latest research is pointing this way and Nathan Rose is abreast of it all. He'll be presenting a talk on this all of findings around this topic at the ACNEM Conference, Saturday 25th May.

Chrono-nutrition and your circadian rhythms

One of the major findings from the latest research into chrono-nutrition is the fact the timing of our meals sends biological signals to the biological clocks which exist in every organ in our body, impacting ageing, metabolic function, hunger and satiety hormones and weight.

Rose will explain how important our circadian rhythms are. He keeps in touch with the world's leading researchers in this area and everything points to the fact our circadian rhythms are very important to our overall health. As he says: "There's strong evidence that people who do shift work have higher incidents of cancer and other illnesses. We've known about the importance of this area for some time."

Weight loss may become easier

Rose says he knows many practitioners are searching for ways their patients can lose weight – and keep it off. While he admits that fundamentally, we are easily overeating, the research is also pointing to the fact that chrono-nutrition can contribute greatly to weight loss and weight control.

"Our bodies have evolved over many thousands of years, living in a 24-hour light and dark period. Chrono-nutrition is the science of eating to our circadian rhythms. So light becomes the conductor of our life because it is such a major factor. Hence there's a big movement now not to look at phones or iPads at night because this inhibits our production of melatonin and interferes with our circadian rhythms," says Rose.

"It's far better to have your meals synchronised with your circadian rhythms. Some studies with mice have been carried out where one group was fed a certain amount of food with a certain caloric intake over 24 hours and another group was fed exactly the same amount of food with the same caloric intake but only in a restricted window of that 24 hours – only over an 8 hour period during the night as mice are nocturnal. This would be the equivalent of a human eating from 9am to 5pm.

"They found the mice who were fed over the full 24 hour period became obese but the mice who were fed over an 8 hour period did not. Various research has found the 8 hour restricted feeding period is ideal. For some reason, with human beings, your cells

are more likely to be able to process those calories by only eating for 8 hours when it's still light."

"They have done some early experiments with people who only ate for a restricted 8-hour window of time from say 9am to 5pm and they found they slept better, woke up in a better mood and had more energy.

As Rose says, this is a major finding for people trying to lose weight: "If you can lose weight and you feel comfortable with it, you're more likely to stick with it and your body will be healthier and happier," he adds. "All the research shows people just won't starve themselves on a long term basis. But if they can eat a wider range of foods – but restrict their eating period – then it could work for them."

"There are potentially huge benefits for losing weight if you eat this way. People are finding if they have the majority of calories earlier in their day, they seem to be able to eat the same amount of calories and still lose weight," he adds.

All the benefits of fasting

Chrono-nutrition brings with it many of the benefits of fasting: "If you wake up but don't have breakfast straight away – you can delay it one to two hours – you can be getting up to 16 hours of fasting each 24 hour period," says Rose. "The benefit of eating this way is similar to a mini-fast. It takes the stress off the system when you don't eat so much of the time. The research is finding people are gaining metabolic health benefits such as not developing pre-diabetes."

"By eating at the right time of the day the research has found people can create a new set point in the brain – the set point being the weight range which has been programmed for the body for optimum functioning. Often the body seems to fight to maintain a certain set point but there is preliminary evidence that chrono-nutrition will help change this set point. But there's not conclusive evidence yet," he adds.

Rose will present all the latest information on how to optimise your circadian rhythms and the timing of your patients' meals for optimal health. As well you'll:

- Discover the benefits of time restricted feeding
- Understand the best style of fasting for different patients
- Learn how other cycles of light/dark and activity/rest can contribute to health and disease

Nathan is the Clinical Education Manager at Metagenics and plays a central role in the development of seminars, technical data and educational programs. Nathan has a passion for following the latest scientific research and synthesising this into clinically meaningful information and tools for Practitioners. The combination of many years of clinical Naturopathic experience and a focus on evidence-based practice makes Nathan's presentations highly relevant and informative.

Nathan Rose will be presenting on Saturday 25th May 12.00pm – 12.30pm

HAVE WE TAKEN THE 'PUBLIC' OUT OF 'PUBLIC HEALTH'?

Professor Grant Schofield

When Professor Grant Schofield gives his presentation at the ACNEM Conference he'll be asking have we taken the 'public' out of 'public health' and how did we get to this situation where the medical profession in Australia and New Zealand have become outdated and un-involved in public health?

Professor Schofield's presentation is titled: *Is there a place for low-carb and fasting in public health nutrition?* When we talked with New Zealand-based Professor Schofield this week, he admitted he feels we seem to have taken the 'public' out of 'public health'.

"The Internet has given us all access to so much more information and this has allowed scientists and others to have a dissonant voice but the medical profession still think they're living in the same world that used to exist prior to the Internet," he commented.

"We've missed the boat," he added. "It's like there's this parallel universe which is the Internet and there's all of this information available – and then we have the other arm of 'public health' which is almost outdated."

Failure to adopt and support new ideas

As well, Professor Schofield said the medical profession has failed to adopt and support new ideas which have arisen from the latest research: "When you look at it, we seem to have gone backwards," he said. "Every week there'll be something in the media saying something one way and then the next week, there'll be something supporting the other way. I think this situation, where we can't seem to adopt and support new ideas, is something we need to look at."

"For example, we know the low-carb diet is very effective for diabetes and yet we'll see a message come out from the government which says a 'low-carb' diet can be 'dangerous' for your health. We've done the science so why can't we just turn this into policy? If we don't, it seems we're actively opposing efficacious treatments.

"The majority of doctors are GPs practising out there and they're not across all of the latest research but they would implement it if it was policy," he added.

Our message is not getting to the right people

Professor Schofield said the current public health system isn't reaching the level of people in the system that it needs to. He commented that in Australia, there's still many chronic health conditions which could be rectified: "We've still got a massive problem of obesity and diabetes and poor health. In Australia, with a population of 22 and a half million, just under a quarter of those people are lost to poor health."

"Out of that 22 and a half million, 4% were born unhealthy, 8% sustained injuries but the others have bad health because of smoking, drinking, lack of fitness and poor nutrition," he continued.

Professor Schofield said that while modern medicine has become

the first bastion for new research, the awareness of all this research is not getting to the public and the people in the health system: "The world has changed so much. With so much information available now on the Internet, everyone has access to medical information. Even 30 years ago, this wasn't the case – you had to be part of the medical profession to get access to all of the latest information. When I did my study in 1995 you had to go to the library to get the information I needed," he added.

"But the medical profession still think they're living in the same world," he said, explaining this means they haven't adopted the latest research and so they're not able to give their patients the benefit of this research and improve the treatment they're getting.

Celebrity authors and lone rangers are left to inform everyone

Professor Schofield said the current state of the public health system ultimately means a much more integrative approach to health is lost. But he added this doesn't mean the latest information about health is not being promoted but it's now left to others to bring this information forward such as celebrity authors like Dr Mosley.

Dr Mosley wrote the best-selling book called *The 5.2 Fast Diet* six years ago and it's been a best-seller ever since. His current book, *the fast 800* has been the No. 1 Bestseller in the Australian, New Zealand and UK market for some time. Both of these books guide people in how to use fasting and a low-carb diet to lose weight and achieve long-term good health.

The question Professor Schofield would like answered is: "Why are these major changes in public health often instigated by celebrity authors and not by the medical profession themselves? It's left to the 'lone rangers' of the world to get the message out there but the medical profession should be part of this more and that way they'd be an active part of our public health system."

Professor Grant Schofield is a Professor of Public Health and the Director of the Human Potential Centre at AUT at Auckland University of Technology. Professor Schofield researched and teaches in the areas of wellbeing and chronic disease prevention, especially reducing the risk and eventual mortality and morbidity from obesity, cardiovascular disease and diabetes.

Professor Schofield has co-authored several best-selling books in the What the Fat? Series. He's also part of a new startup called Prekure (Prevention is cure) which aims to help health professional upskill in the latest knowledge and application of lifestyle medicine.

Professor Schofield actively lives his areas of expertise and has competed in elite sport including professional triathlons and over 20 Ironman events including the Hawaii Ironman Triathlon World Championships in 1995 and 1997.

Professor Grant will be speaking on Sunday 26th May, 2.00pm – 2.25pm.

COLLEGE NEWS

ACNEM TRAINING - HOBART 2ND & 3RD MARCH.

ACNEM visited Tasmania for the very first time in March, with our first face-to-face event of the year.



It's always fantastic to meet our newcomers to ACNEM training, as well as to see so many returning familiar faces. Thank you to our incredibly knowledgeable presenters for making this event so successful.

Here's what our delegates had to say:

'Excellent event overall. I'm so glad I attended. It has changed the way I will manage my patients. Dr Jason Hawrelak is very inspiring.'



'I want to learn more!'

'Awesome group of clinicians.'

'ACNEM staff very helpful. Enjoyed speaking to the persons at the various stalls. Venue and the food very good.'

'Thank you, the staff were all very responsive, friendly and helpful. It was my first face to face training with ACNEM and overall a great experience.'

'This was a well-run event and an excellent introduction to the college.'

The Gastrointestinal Health module, featuring Jason Hawrelak, was a sell-out, but for all of those who missed out on attending in person, all the lectures will be available as a new online module in the coming weeks. Stay tuned for announcements.

GUEST OVERSEAS DELEGATE

We were delighted to welcome Kenyan medical student, Gabriel Katana, to the Primary Modules training in Hobart, and are grateful for him providing us with his feedback and insight:

Having come from Kenya to Australia after my Medical training so as to experience Medicine the Australian way, I knew I would learn a lot. That was the case before the Hobart conference, which I got the privilege of attending after an invitation which I couldn't let pass by - I would get to experience Tasmania and better yet learn more about Medicine.

I did not know what to expect particularly from the conference, but I can confidently say that after those two days I got to learn a lot and even refresh my young medical knowledge. Different speakers gave insights to different important topics. The general message according to my understanding being, 'We are what we eat and what we eat determines our overall Health'. But how can we get our patients to follow our dietary advice if we don't have the required knowledge on how This or That eating habit affects their general well-being? This conference helped me as an individual to understand the complex processes that happen within our bodies so as to give the desired results.

Of interest to me was more on GUT health and how medications affect the microbiome in the GUT and also how we can try and hinder that destruction and promote the useful flora. Coming from a country where we don't have antibiotic restrictions as it is here and that most drugs are OTC, I had to take special interest in this as having worked with some of the local Australian GPs and seen the effects of uncontrolled Antibiotic use to the population.

As a country we are not yet there in terms of tolerance and resistance to the use of antibiotics but I will presume we are not that far away from that being the case. The knowledge I gained will most definitely help me to be prepared on this and as a precaution once I am back in Kenya it will be my goal to pass the knowledge acquired to teach both colleges and my patients about the importance of GUT health and generally eating right. I will also put the rest of the knowledge gained from the conference to improve the health of my patients and my country in the small ways that I can.

It was an honour getting the chance to be part of the ACNEM Hobart Conference. Thanks to all that made it possible and the speakers who shared their knowledge with us.



*Gabriel Katana
Medical student*

CERTIFICATION AND FELLOWSHIP - RECENT GRADUATES

We would like to congratulate and acknowledge the achievements of our recent graduates:



Dr Jennifer Bromberger, from NSW, was awarded Fellowship with ACNEM, January 2019. Jenny completed her Primary Modules training in 2014, and since then has completed a further fourteen learning modules with ACNEM, as well as participating in webinars and attending numerous ACNEM Conferences. Well done Jenny!



Dr Alope De from Melbourne was awarded Certification in NEM – Part 2, April 2019. Alope commenced his training with ACNEM in 2018.



Dr Inanch Mehmet was awarded Certification in NEM - Part 2, March 2019. Inanch has been training with ACNEM since 2017 and is based in NSW.



Dr Fi Darracott-Cankovic received Certification in NEM – Part 1, April 2019. Fi is a New Zealand doctor, based in Titirangi Auckland, and has been training with ACNEM since 2012.

NEW ONLINE LEARNING MODULE - COGNITIVE DECLINE



Is it possible to reverse cognitive decline? ACNEM are very excited to bring you this new module, now available online. Learn the necessary tools for assessing cognitive decline and how to interpret relevant pathology tests. Topics include the application of specific diets, including ketogenic, Mediterranean and intermittent fasting and offer practical tips and tools in the integration of these into practice. More Information visit:

<https://www.acnem.org/cognitive-decline>

FACE-TO-FACE TRAINING

ACNEM's next face-to-face training event will be in **Perth** on **27-28 July 2019**. Come join us at Esplanade Hotel Fremantle and register for training in one of the following courses:

- Mental Health - this module will address a number of the most common functional mental health conditions that present to clinic including depression, anxiety and addiction.
- Sports Medicine - join our experienced presenters for this one-day training on the interplay between exercise, health and performance. This is a brand new module and features presentations by Dr Nadine Perlen and Cliff Harvey.
- Primary Modules in Nutritional and Environmental Medicine - an introduction to the principles and practice of nutritional and environmental medicine, including presentations by Rachel Arthur.



MEMBER PROFILE

THE POSITIVE INFLUENCE OF ACNEM TRAINING ON MY ROLE AS A GP

**Author:**

Dr Caitlin O'Mahony

I graduated as a RACGP fellow almost one year ago. I am so grateful to have been part of an excellent training program from which I gained much knowledge and invaluable clinical experience. However, towards the end of my training, at times I felt that there were gaps in my knowledge around chronic conditions, and I was asking myself more and more often: "But WHY does this patient have a thyroid condition...reflux...PMT...IBS...fibromyalgia...and so on...and HOW can I further investigate this and offer a more holistic treatment approach, which surely would have more long-term benefits for this patient?"

After I gave birth to my second child, and then studied for the RACGP exams, my health deteriorated and conventional medicine did not have enough answers as to why I felt so fatigued and had worsening gut symptoms. A friend recommended I consult a naturopath; this was my introduction to the field of integrative/functional medicine: how it can help get to the root causes of symptoms and offer treatment through suggesting lifestyle changes, and, if necessary, prescribing vitamin and/or mineral supplements and herbs. I was hooked!

After finishing my GP training I was fortunate to meet Dr Michelle Woolhouse at an integrative medicine event and for the past nine months she has been mentoring me at her clinic in Rosebud, where I work two days per week. Michelle encouraged me to commence ACNEM training.

In October last year I completed the ACNEM Primary Modules over four days in Melbourne; I was blown away (and at times overwhelmed!) by all the 'cool stuff' that I learnt. It was fascinating to rediscover nutritional biochemistry (including the Krebs & methylation cycles, detoxification pathways, hormonal cascades, neurotransmitter synthesis) and understand its clinical relevance – I remember being totally bored by the subject in first year medical school! I now often show patients diagrams of the hormone cascade or methylation cycle to assist in their understanding of how one or the other can impact upon their health, and thus, influence treatment. It has been a joy to rediscover biochemistry as it allows a more creative approach to medicine, thus enhancing my 'GP toolbox'.

I was enlightened by Rachel Arthur's overview of micronutrients and their activities in the body. I am now on the lookout for vitamin and/or mineral deficiencies in my patients, which could

be a root cause of their presenting illness.

Throughout the four days, the benefits of 'anti-inflammatory' dietary changes, movement, sleep/circadian rhythm optimisation, stress management, and toxic burden reduction were highlighted. Due to our busy, often stressful lives, these pillars of health should be prioritised. Hence, I now focus on discussing lifestyle habits at length with my patients and then work with them to put in place a realistic plan to assist in the foundation for their future health and wellbeing. It has been so rewarding to see many patients improve when these foundations alone are optimised – what seems like such simple advice can often be the most powerful.

In March this year I attended the two-day ACNEM Gut Health Module in Hobart. Several presentations provided excellent information about IBS, SIBO, parasites, IBD, reflux, and *Helicobacter pylori*. However, the highlights were Dr Jason Hawrelak's presentations on up-to-date information about the microbiota, which included microbiota assessment, the activity of various bacteria, and how their levels can be manipulated through diet, prebiotics and probiotics. I have taken this valuable knowledge back to my colleagues at the Rosebud clinic and we have all been inspired to reassess how we can best diagnose and treat dysbiosis and SIBO. We might just start a competition to see who can win the 'weekly whole plant food count', knowing that greater plant food diversity = microbiota diversity = health and wellbeing optimisation!

I look forward to completing more ACNEM modules in the future. I am always inspired by the power of integrative medicine and how I can continue to incorporate this knowledge into my daily practice.

2019

ACNEM

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ACNEM's conference will feature a range of international and local speakers to address:

Chrono Nutrition - the interplay between the biological clock, hormonal function, time-restricted eating and intermittent fasting

Gut-immune Disruption - research update on the mycobiome and auto-immunity

Metabolic Insights - multi dimensional aspects of metabolism and implications for patient management

Personalised Nutrition - finding the solution for individualised management

Remaining true to our aims of nutrition education, ACNEM brings you independent, highly credible and up to date information on the most relevant topics of healthcare today.

Join us to gain valuable tools and insights to empower yourselves and your patients, and support them to make lifestyle and diet changes for better health outcomes.

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Dr Dale E Bredesen, (USA) Professor of Neurology

Dr Dale E Bredesen is internationally recognised as an expert in the mechanisms of neurodegenerative diseases such as Alzheimer's disease. Dr Bredesen's research has led to new insight that explains the erosion of memory seen in Alzheimer's, and has opened the door to a new therapeutic approach. He has found evidence that Alzheimer's disease stems from an imbalance in nerve cell signalling. Dr Bredesen will cover the mechanisms underlying the neurodegenerative process, and the translation of this knowledge into effective therapeutics for Alzheimer's disease and other neurodegenerative conditions.



Dr Jay Lombard, (USA) Internationally Acclaimed Neurologist

Dr Jay Lombard is an internationally acclaimed neurologist, author, and keynote speaker who creates solutions for brain health and intractable neurological disorders. Dr Lombard integrates biological, psychological, and existential components in his holistic treatment approach. He is the co-founder and creator of Genomind, a precision medicine company utilising genetic testing to improve neuropsychiatric conditions, including Alzheimer's, autism, and depression. Founder of TedMed, Jay Walker, describes Dr Lombard as "part Freud, part Sherlock Holmes." Dr Lombard's discoveries have been regarded by key opinion leaders as fundamentally shifting the paradigm of psychiatric medicine.



Ms Amanda Archibald, (USA) Registered Dietitian, Nutritionist and Public Health Advocate

Ms Amanda Archibald is a registered dietitian, nutritionist and public health advocate who has pioneered the combination of the science of nutrigenomics with the culinary arts. Amanda will draw particular attention to the mechanisms of food-gene relationships related to the core issues known to affect long-term health – inflammation, oxidative stress, blood sugar and fats, and gut health – while emphatically encouraging the discovery of taste and culinary treasure in the process. She will present an empowering new system for choosing, preparing and cooking ingredients for optimal long-term health based on a language recognised by DNA.



Dr Brandon Brock, (USA) Board Certified Chiropractic Neurologist, Family Nurse Practitioner and Nutritionist

Dr Brandon Brock has a passion for providing easy to comprehend skills that can be utilised in a clinical setting. He received the most outstanding functional neurology teacher of the year award from the ACA Council of Neurology for five years and twice from IAFNR (International Association of Functional Neurology and Rehabilitation). Dr Brock will present his unique and integrated understanding of functional neurology blending nutrition, pharmacology, immunology and endocrinology to provide a comprehensive and multi-perspective approach to clinical presentations.

VISIT:

bioceuticals.com.au/education/events



2019

ACNEM TRAINING

MENTAL HEALTH**PERTH
27-28 JULY****REGISTER ONLINE AT ACNEM.ORG**

This module will address a number of the most common functional mental health conditions that present to clinic.

Conditions to be covered include depression, anxiety and addiction. Our highly regarded presenters will bring their clinical experience and knowledge on the application of nutritional and environmental medicine in collaboration with conventional medical practice.

Current scientific evidence for the effectiveness of treatment modalities will be presented including nutraceutical prescription, dietary manipulation, lifestyle modification and environmental factors, alongside the range of available testing and investigation options.

2 days face-to-face + required activities

For more information and to register online visit acnem.org

SPECIALISED CONTENT WILL COVER:

The contributing NEM factors to common mental health conditions including depression and anxiety



The investigative methods for assessing mental health from a NEM perspective



The role of specific dietary and environmental approaches for the management of anxiety



Evidence-based lifestyle interventions that can assist in the management of addictions



Nutritional treatment and management of mild-to-moderate depression

SPEAKERS INCLUDE:**Rachel Arthur**

BHSc, BNat

Respected and widely published naturopath and registered nutritionist specialising in integrative nutrition

**Dr Sanjeev Sharma**

MBBS, MD(Psych), FRANZCP

Consultant Psychiatrist with an interest in General Adult Psychiatry

**Dr Nicole Nelson**

FRACGP, BPHARM, MBBS

Medical doctor with a background in pharmacy and general practice

**RACGP &
ACCRM
CPD POINTS
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2019 ACNEM TRAINING

SPORTS MEDICINE

PERTH 27 JULY

REGISTER ONLINE AT ACNEM.ORG

Do you see patients who want to maximise their sporting performance without compromising their health? ACNEM is excited to present a new module on Sports Medicine in Perth this July.

This course is aimed at medical and allied health practitioners who have an interest in sports medicine.

Join our experienced presenters for this one-day training on the interplay between exercise, health and performance. Hear from health experts who specialise in exercise and gain some evidence-based strategies to aid your patients in maintaining health while increasing performance. This is a growing area in medicine which will set you apart from your peers. Don't miss this fantastic opportunity to interact with ACNEM's expert presenters, discuss and compare notes on clinical experiences and network with like-minded practitioners.

1 day face-to-face + required activities

For more information and to register online visit acnem.org

SPECIALISED CONTENT WILL COVER:



The role of gut function and the relationship between intestinal barrier function and inflammation in the recreational and elite athlete



Baseline nutrition, diets and fuelling for sport



Specific sports nutrition assessment, investigation and case taking



Individual tailoring of diets and supplements



Recognition of over-training syndrome, the impact of stress and cortisol

SPEAKERS



Dr Nadine Perlen

MBBS, FRACGP, DRANZCOG
ACNEM Board member and practitioner with special interest in the impact of gut and the microbiome on all other areas of health



Cliff Harvey

Registered Clinical Nutritionist, PhD Candidate and Researcher in Nutrition (AUT University). Published author and researcher in the area of low-carbohydrate and ketogenic diets



Fiona Murray

Owner of Physical Nutrition, a company dedicated to educating the WA community about fitness and healthy eating



Jen Graham-Taylor

Experienced General Practitioner, Co-owner of South Coast Sports Medicine, a multidisciplinary clinic offering holistic care

**RACGP &
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Chronic disease is spiralling out of control. Mood and neurological disorders, immune dysfunction, arthritis, fatigue, hormonal issues and obesity have all increased in prevalence at an exponential rate over the past few decades. Unfortunately, the current medical management of many of these disorders is centred on symptomatic reduction, while the underlying drivers continue. However, recent scientific discoveries in the fields of inflammation, immunity, epigenetics and bioenergetics have elucidated the precise mechanisms of the root causes of modern diseases and identified novel means to correct them. It is time to translate this cutting edge science into clinical practice.

THE EVENT



In 2019, discover how newly identified inflammatory mediators are fuelling some of the most frequently presenting complaints. Learn which stealth drivers are at the root of chronic diseases. Find out about tomorrow's standards in healthcare technology and patient care that can be applied today. Become one of a new wave of Practitioners armed with the tools and knowledge to free your patients from the burden of chronic disease.

As part of Congress 2019, join the Metagenics team and Congress speakers on the Saturday night to 'Unwind After 6'.

Enjoy drinks and a light dinner while:

- Connecting with Practitioners showcasing their case studies and scientific posters;
- Book signing with Dr Jeffrey Bland, Nicole Bijlsma and Professor Satchin Panda; and
- Creating your own flavour of nutritional supplement!

RSVP when making your Congress 2019 reservation.

We look forward to seeing you there!

2019 PRESENTER LINE-UP



Dr Jeffrey
Bland



Dr Kara
Fitzgerald



Professor
Satchin Panda



Dr Jill
Carnahan



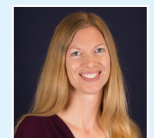
Professor
Amanda Salis



Nicole
Bijlsma



Dr Leila
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