ACNEM JOURNAL

Vol 29 No 3 – November 2010

THE JOURNAL OF THE AUSTRALASIAN COLLEGE OF NUTRITIONAL AND ENVIRONMENTAL MEDICINE

AUSTRALIA POST PRINT POST PUBLICATION
No. PP327230/0008 ISSN 1328-8040

COLLEGE PROFILE

The Australasian College of Nutritional and Environmental Medicine (ACNEM) Inc, is a not-for-profit medical college established in 1982, offering postgraduate training for doctors and allied health professionals in Nutritional and Environmental Medicine (NEM). Full Membership of the College is open to registered medical doctors and dentists. Associate Membership is available to other suitably qualified and affiliated healthcare professionals. Members of the public are also invited to become Friends of ACNEM.

Members and Friends of ACNEM receive a regular email newsletter, access to resources on the ACNEM website, and the quarterly ACNEM Journal, containing research, articles, news and comment relevant to this area of medicine. The College provides a peer network, advocacy and support for NEM practitioners while developing recognition of NEM as a speciality of General Practice and an important healthcare modality in its own right. The College website also provides a popular referral service used by members of the public looking for practitioners with training in NEM.

WHAT IS NEM?

Nutritional Medicine is concerned with biochemical pathways and the consequences of inadequate or inappropriate nutritional intake. Optimum nutrition is central to health and fundamental in the prevention and treatment of most conditions. Likewise, Environmental Medicine is concerned with the biochemistry underlying the physiological and psychological symptoms that result from allergy or sensitivity to inhaled and ingested chemical substances in our environment. Excesses, deficiencies and imbalances of nutrients, the presence of toxic chemicals or electromagnetic radiation may all result in cellular dysfunction, illness and disease, whereas the homeostasis promoted in NEM allows self-healing by the body.

Treatment with Nutritional and Environmental Medicine (also known as Orthomolecular Medicine) may involve the removal of certain foods or chemicals from the patient's environment, the use of rotation diets and prescription of supplements, such as vitamins, minerals, trace elements and essential fatty acids, where diet alone cannot rectify physiological imbalances.

Dr Matt Shelton lecturing in the Primary Course

ACNEM TRAINING

ACNEM training is regarded as unique in the world, and is undertaken by practitioners from many countries. The training programs are designed by the ACNEM Faculty (comprising GPs and medical specialists) as post-graduate medical education for practitioners wishing to learn more effective ways of treating their patients. Content is strongly referenced and presented by some of Australia and New Zealand's leading medical, scientific and clinical experts.

The four-day Primary (Foundation) Course covers the key nutritional, environmental and biochemical factors in well-being, and therefore the NEM approach to treating many of the conditions, illnesses and diseases seen in primary care. The course enables practitioners to begin practising nutritional and environmental medicine confidently and safely, with practical tools to aid integration into daily practice.

The Primary Course is complemented by a range of two-day Special Training Programs (STPs) investigating particular subject areas in more detail, such as Gastrointestinal, Allergy & Autoimmune, Thyroid & Adrenal, Cancer and Mental Health, to name a few. Prior completion of the Primary Course is preferred but not essential.

Training courses are held throughout the year at various locations in Australia and New Zealand. Some courses are also offered online in a "distance learning" format which makes ACNEM training accessible to those in rural and remote locations and around the world, and avoids the need to take time out of clinical practice to attend in person.

ACNEM is a fully accredited RACGP QA&CPD training provider for the 2008-2010 Triennium, with 40 Category 1 points allocated to most training courses. ACRRM and RNZCGP points may also be available.

CERTIFICATE, DIPLOMA & FELLOWSHIP

ACNEM training optionally leads to nested Certificate, Diploma and Fellowship qualifications in NEM, providing greater recognition of training and specialty. The Certificate and Diploma qualifications are open to healthcare practitioners who meet Associate membership requirements, while the Fellowship is open to Full members (doctors and dentists). The ACNEM Primary Course is the starting point for each of these qualifications.

After nearly 30 years of pioneering Nutritional and Environmental Medicine into General Practice, ACNEM is looking forward to a future where nutritional medicine is just 'good medicine'.

For more information about ACNEM, please visit www.acnem.org, email mail@acnem.org or phone +61 (0)3 9597 0363.

Journal of the Australasian College of Nutritional and Environmental Medicine Inc (ACNEM)
PO Box 298, Sandringham, VIC, 3191, Australia
Phone: (03) 9597 0363 Fax: (03) 9597 0383
Email: mail@acnem.org Web: www.acnem.org

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From the President

Karel Hromek, BMed, BSc, FACNEM, FACRRM

At ACNEM's recent Annual General Meeting (AGM) a new Board was elected. I am very honoured to have been elected President of ACNEM, with Dr Jennie McKern elected Vice-President. New board members, Prof Avni Sali, A.Prof Eugen Molodysky, Dr Anjuna Arunachalam and Dr Sandeep Gupta have joined the continuing board members, Dr Tony Bartone [Treasurer], Dr Debbie Fewtrell, Dr Braham Rabinov, Dr Matthew Shelton, Dr Emmanuel Varipatis and Dr Denis Rebic to make up an extremely experienced Board. I am sure these dynamic people will work together to help realise some of ACNEM's strategic plans and visions for the future.

I would like to show appreciation to Dr Gary Deed who retired from his presidency at the AGM. Gary took on the presidency at a time of change for ACNEM. We were very fortunate to have his steady hand at the helm as he, along with the Board and our fantastic CEO, Stephen Penman, steered ACNEM into the present where we find ourselves expanding with a stronger and better College, and the potential to realise even greater outcomes in nutritional and environmental medical education.

This is due in part to the online learning facility which is now operational and available to practitioners who wish to participate in ACNEM's 4-day Primary Course in NEM by distance education. This has required a lot of work and we really need to acknowledge the dedication of Stephen, supported by Max Wang and Keith Hungerford who have filmed and edited the ACNEM Primary Course and many Special Training Programs (STPs). The first STPs to be made available entirely online are 'The Gut' and 'Epigenetics & Nutrigenomics' with more to follow soon.

ACNEM is a teaching college. I would like to acknowledge the role played by our staff, Michelle Bradford (Training & Events Manager), Jimena Acevedo (Executive Assistant), Kathyrn Silver (Administration) and Education Co-ordinator Ann-Mary Hromek, in helping ACNEM to successfully orchestrate this year's many educational programs which are always of the highest standard and run with a happy familiarity, a collegiality that is integral to ACNEM.

Lastly I want to acknowledge the amazing work that our lecturers do for our College. There is a dedicated bunch of ACNEM Fellows who turn up, training after training, who are mainly responsible for the success of the ACNEM Primary Course and are supported by guest lecturers who are mostly invited to speak on topics of special interest in the Special Training Programs. All of our wonderful lecturers support ACNEM on a purely voluntary basis and have been responsible for the delivery of ACNEM's renowned educational courses over nearly 30 years.

I am excited with these developments and dedicated to being part of this team helping take the ACNEM family forward and propagating the message of the healing potential of Nutritional and Environmental Medicine.

The Effectiveness of Targeted Nutrient Therapy in Treatment of Mental Illness

A PILOT STUDY

Richard Stuckey, MB.BS., DRCOG; William Walsh, PhD; Brett Lambert

ABSTRACT

In a pilot study aimed at investigating the effectiveness of targeted nutrient therapy, the clinical progress of 567 patients with a range of mental illnesses receiving established medical treatment in conjunction with a targeted nutrient program were assessed by clinical outcome after 12 months.

492 of the 567 patients interviewed commenced treatment and of these 382 complied for one year.

The verified diagnoses included Autism Spectrum, ADHD, Asperger's Syndrome, Anxiety, Bipolar Disorder, Depression, Schizophrenia and Obsessive Compulsive Disorder (OCD).

Of the total treatment group, 110 (23.6%) failed to complete one year treatment, 221 (44.9%) noted major improvement, 91 (18.5%) noted partial improvement, and 70 (14.2%) noted nil improvement in 3 nominated quality of life outcomes. These outcomes were compared to a comparison group (26) not receiving the equivalent nutrient treatment of which 5 (19%) noted major improvement, 5 (19%) noted partial improvement, and 16 (62%) noted nil improvement. Hospital admission was substantially lower in the treatment group.

INTRODUCTION

The emergence of the pharmacological age of more effective drugs to treat mental illness may result in the under-valuation of the effectiveness of nutritional treatment.

The nutritional treatment of mental illness is not a new area and pioneers in this field such as Abram Hoffer and Carl Pfeiffer[1,2,3] quoted success in treating mental illnesses using high doses of selected nutritional supplements. In particular, the work of Pfeiffer centred on three key areas.

The **first** was the observation that most people with mental illness were low or deficient in zinc or had a copper-zinc imbalance. This finding has been duplicated by many researchers[4-8] including the corresponding author, and is a key focus of this paper.

The **second** observation was that many sufferers of mental illness had malfunction of their methylation pathway. Pfeiffer coined the terms 'histadelia' or high histamine and 'histapenia' or low histamine and observed a very different set of personality traits in these two groups before the development of their illness. Some years later, William Walsh (one of the authors) realised that high histamine was likely to be indicative of undermethylation and histapenia of overmethylation. Aberrations of methylation status in mental illness have also been observed by many other researchers[9-17].

The **third** key observation was that urinary pyrrole excretion was higher in people with mental illness than those without and that this also correlated with a certain pattern of character traits.

The current study was therefore aimed at examining the use of targeted nutrient therapy in conjunction with conventional treatment to produce a better long term outcome in patients with a range of mental illnesses.

MATERIALS AND METHODS

Design, setting and patients

A clinical outcome assessment was performed on 567 consecutive patients followed up for one year after initial consultation. The data covered patients interviewed between March 2004 and June 2007. Established diagnoses included Autism, ADHD, Asperger's, Anxiety, Bipolar Disorder, Depression, Schizophrenia and OCD. All patients had an established verifiable diagnosis and most were receiving conventional pharmacological therapy. Patients were instructed not to change any treatment (pharmacological or physical) unless on the instruction of their usual treating practitioner. Treating practitioners were also informed of the additional targeted nutrient program.

All patients (and/or carers) were initially interviewed for up to 1 hour. This process centred on making a clinical diagnosis of an underlying biochemical imbalance with respect to the methylation process, oxidative stress, and copper/zinc ratio (see Table 1). In order to have an outcome assessment pertinent to

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the variety of disorders, each patient (and/or carer) was required to nominate the three clinical issues in which improvement was most desirable. At 3, 6 and 12 month interviews they were asked if they had made major improvement, partial improvement or nil improvement in all three aspects nominated as most important at the initial contact. This was used as the outcome assessment.

Considerable emphasis was given to the clinical diagnosis, as the biochemical markers are sometimes imprecise and the therapeutic decision may be made on the clinical diagnosis.

In cases where there was a discrepancy between the clinical and biochemical diagnoses, initial treatment decisions were made according to the biochemical diagnosis.

Clinical Symptom	Under-methylation	Over-methylation	Pyrroluria	Elevated Serum Cu/Zn
High academic achievement	+			
Competitive	+			
Addictiveness	+			
Eating disorder	+			
Obsessive Compulsive	+			
Perfectionism	+			
Inner tension	+			
Ritualism	+			
Ruminate	+			
Psychosis	Catatonic	Active		
Hirsute	N	Y		
Pain threshold	Low	High		
Responds to SSRI drugs	Yes	No		
Responds to Benzodiazepines	No	Yes		
Tinnitis		+		
Poor organisation		+		
Food/chemical sensitivity		+		
Poor sleep		+		+
Paranoia		+		
Anxiety/panic attacks		+		
Grandiosity/religiosity		+		
Racing thoughts		+		
Auditory hallucinations		+		
Poor dream recall		+	+	
Nervous		+	+	
Aversion to breakfast			+	
Crave spicy foods			+	
Self esteem	High		Low	
Keeps same friends		Yes	No	
Sensitive light, noise, smells			+	
Moodiness			+	
Tan easily			No	
Fears			+	
Poor short term memory			+	
Worrier			+	
Visual hallucinations			+	
Aggressive, assaultive			+	+
Poor concentration				+
PMS				+
Sensitive to tight clothes, tags				+

Table 1. Table of typically associated clinical symptoms

Pathology

Zinc

Serum zinc was used for zinc analyses. Potential sources of error using this technique are known, thus achieving consistency for these tests was paramount. This was achieved through use of standardised collection protocol and assigned venepuncturists. Incorrect collection technique tends to give artificially elevated results.

Whole Blood Histamine

Histamine is formed by the decarboxylation of histidine and is metabolised by the enzymes histamine-N-methyl transferase and diamine oxidase. Histamine is therefore methylated for its metabolism, which enables its use as an inverse indicator of the methylation status of an individual. For example, relatively high histamine suggests under-methylation and low histamine over-methylation.

For the purpose of this study, whole blood histamine was used as an indirect marker of methylation with a narrow range of histamine [0.4-0.6mm/l] representing normal methylation.

More reliable biochemical indicators of methylation are available for research purposes. Methylation status can be better measured by either serum methionine or the ratio of s-adenosyl methionine [SAMe] to s-adenosyl homocysteine. These assays were not available commercially during the treatment phase of this trial.

Urinary Pyrrole/Mauve Factor

Pyrroles are ubiquitous waste products. Increased excretion of these products is a common feature of many behavioural disorders (also referred to as Pyrroluria[19,20,21]). The product measured is hydroxyhemopyrroline-2-one (HPL). Increased excretion of HPL can result either from a genetic disorder affecting haemoglobin synthesis or from the oxidative degradation of heme. Whilst HPL itself has low toxicity it binds irreversibly to pyridoxine (B6) and zinc rendering both inactive. Biochemical pathways requiring these nutrients as cofactors are thus hindered.

Second morning void specimens were collected into vials containing preservative and then snap frozen (-30ºC). Samples remained frozen and protected from direct light until analysis. Through co-operation from a national pathology service, it was possible to standardize the collection and transport of samples for HPL analysis both nationally and internationally. Results were corrected for hydration status and the working range for urine HPL levels were as follows:

[HPL] under 10 micgr/dl: Normal

[HPL] between 10-20 micgr/dl: Borderline (considered high if clinical correlation)

[HPL] over 20 micgr/dl: High

Clinically accurate measurement of urinary HPL concentration was therefore a useful bio-marker for oxidative stress.

Cu/Zn Imbalance

In some patients there was no evidence of methylation abnormality or of high pyrrole excretion. The serum copper to zinc ratio in some cases was nearly 2/1 whereas the accepted normal is near 1/1.

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Targeted Supplementation

Compounds were individualized for each patient according to the nature of the imbalance, the degree of deficiencies and the age and size of the patient. Doses were well in excess of recommended daily allowances.

Decisions were generally made according to the biochemical profile but in cases where this was indistinct, decisions were made on the clinical diagnosis. Note from the schematic representation of the methylation pathway (see Figure 1) there may appear to be some logic in using methionine, or SAMe, in under-methylators and B3, folate and B12 in over-methylators. It is noted that 'over-methylation' may not necessarily be a literal overactivity of methylation but alternatively a block in the adjacent folic acid pathway. The two enzymes implicated are Methylenetetrahydrofolate reductase and Cathchol-O-Methyltransferase

Patients exhibiting symptoms and pathology correlating with under-methylation were administered Vitamins C and B6, Pyridine-5-Phosphate (P5P), Methionine, Calcium, Zinc and Magnesium. Those exhibiting symptoms and pathology correlating with over-methylation were prescribed Vitamins B3 (Niacinamide), B6, B12, C and E, P5P, Folic acid and Zinc. Patients exhibiting elevated urinary pyrroles (and symptoms of Pyroluria) were prescribed Vitamins C, B6, P5P, and Zinc, while patients exhibiting Copper/Zinc imbalance were prescribed Zinc alone or in combination with Vitamin C.

RESULTS AND DISCUSSION

Zinc Pathology

The mean serum zinc in this target group was initially at the 3rd percentile of the pathology quoted ranges (see Figure 2), indicating that low to deficient zinc levels seem to be a major and likely significant nutritional imbalance in a range of mental illnesses.

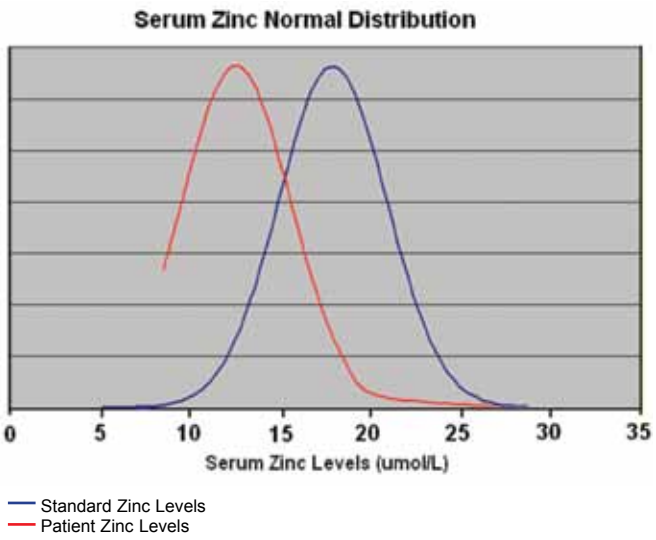

Figure 2. Serum zinc distribution of study patients compared with standard pathology ranges.

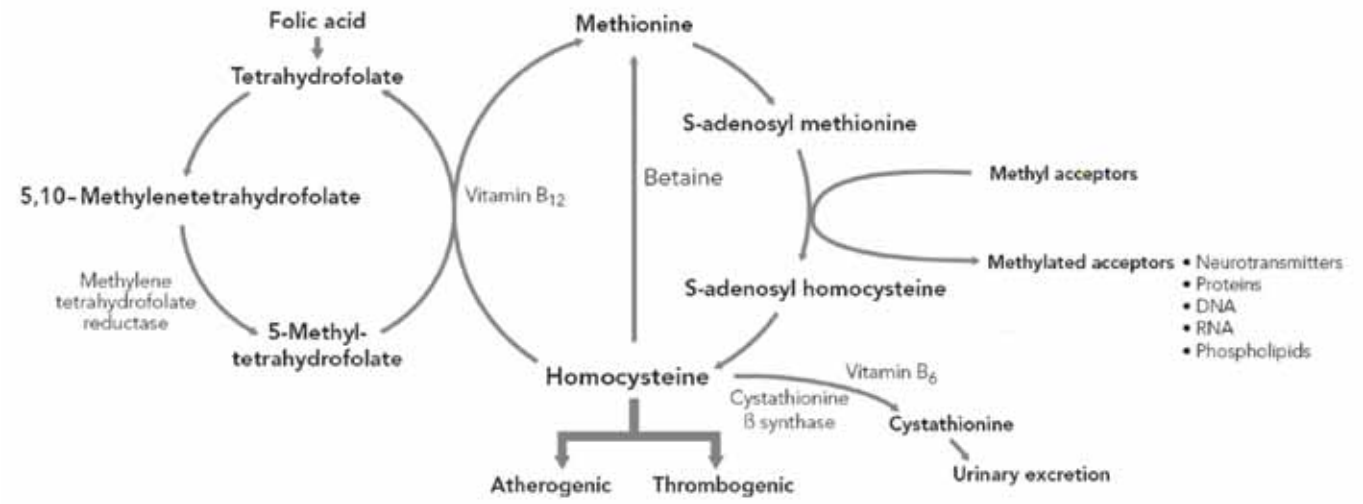

Figure 1. Schematic representation of the methylation pathway.

Outcome Measures

The interview process for the treatment program began with 567 patients of whom 492 commenced treatment with 382 complying for 12 months. 110 discontinued for a range of reasons (22.4% non-compliance). 75 of those interviewed did not commence the program and respondents to a questionnaire in this group were assigned to the comparison group. Of the 382 that completed one year of the program, 221 (57.9%) stated major improvement, 91 (23.8%) partial improvement and 70 (18.3%) nil improvement.

It is understood that there are methods to 'objectify' improvement by questionnaires designed specifically for some of the diagnostic groups, but there are none that would encompass all the diagnostic groups in this study. The outcomes according to diagnosis are represented in Table 2.

Clinical Notes:

- There was a marked reduction in hospital admissions during the 1st year of treatment as compared with the year prior to nutrient treatment.
- There was a reduction in doses of prescription medication in 22.3% of the patient group. Antidepressants and anxiolitics were occasionally withdrawn but antipsychotics were not.
- Most patients with the best results used a combination of both pharmacological and nutritional interventions.
- The relative percentages of improvement and non-improvement were remarkably similar in each of the three groups.

Diagnosis	Major Improvement	Partial Improvement	Nil Response	Total
Autism	49 (45.4%)	38 (35.2%)	21 (19.4%)	108
Aspergers	2 (28.6%)	2 (28.6%)	3 (42.8%)	7
ADHD	16 (57.1%)	3 (10.7%)	9 (32.1%)	28
Anxiety	43 (65.2%)	14 (21.2%)	9 (13.6%)	66
Bipolar Disorder	17 (68.0%)	5 (20.0%)	3 (12.0%)	25
Depression	53 (63.9%)	16 (19.3%)	14 (16.9%)	83
Schizophrenia	30 (61.2%)	11 (22.5%)	8 (16.3%)	49
Other*	11 (68.8%)	2 (12.5%)	3 (18.7%)	16
Totals	221 (57.9%)	91 (23.8%)	70 (18.3%)	382

**This group was comprised of Obsessive Compulsive Disorder and Oppositional Defiance Disorder.*

Table 2. Survey results after 1 year targeted nutritional treatment

Comparison Group

As this was a pilot study, the comparison group consisted of patients who underwent an initial interview, but subsequently did not commence the targeted nutrient program. These patients were contacted to ascertain whether they had found clinical improvement elsewhere, what the treatment was and whether they assessed the improvement as major or partial. Table 3 lists their responses. Although this group is small it does represent a comparison with the treatment group.

Major Improvement	Partial Improvement	Nil Improvement	Total
5 (19.2%)	5 (19.2%)	16 (61.6%)	26

Table 3. 1 Year follow-up on those interviewed but who did not start the program.

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The proportions of improvers and non-improvers differed markedly from the treated group. More surprisingly, and suggestive of substantial potential cost savings of nutrient therapy, the comparison group of 26 patients had a combined total of approximately 650 hospital days. This was more than double the total hospital days of the 382 patients who began the targeted nutrient supplement program.

Compliance

Of interest to the authors is the lack of comprehensive trials or clinical outcome studies of nutrient therapy in the literature. In this study 382 (77.6%) of the 492 who began the program complied for one year. This is considered a high compliance rate when compared to compliance in studies of pharmaceutical products. For example, in a recent study looking at antihypertensive compliance by Simons et al1[18], only 42% of those prescribed calcium channel blockers and 62% of those prescribed ACE inhibitors were compliant at 12 months.

CONCLUSIONS

Much of the published literature in this field documents the presence of nutritional deficiencies and imbalances in a higher percentage of those with mental illness than those without mental illness. There are however, no randomized, blinded, placebo-controlled studies and few, if any, outcome studies.

The purpose of this paper is to highlight targeted nutritional correction in mental illness, and to present outcome data collected for one year after initial interview, demonstrating a considerable subjective improvement in more than 60% of patients. This compared favourably with the conventionally treated comparison group.

One of the startling findings is the vast difference in inpatient hospital days between the treatment and control groups.

The weaknesses inherent in this study are recognized. These include multiple clinical diagnoses, the subjective nature of the follow-up, lack of a placebo arm, and lack of randomisation. The results however suggest that further, better constructed studies of nutrient therapy in mental illness are needed.

The results of the above study point towards the following conclusions:

- Relative zinc depletion is probably endemic in our community.
- The majority of those with mental illness have some nutritional deficiencies or imbalance.
- Correction of these leads to a clinical improvement in a high proportion of cases than standard treatment.
- A huge reduction in the number of days spent in hospital was observed in patients following this program.
- Targeted nutritional treatment is a worthwhile addition to pharmacological treatment, as a combined pharmacological and nutritional approach gave the best results.
- Further studies are needed in this area.

ACKNOWLEDGEMENTS

The authors would like to thank:

Dr Tony Murtagh of Sullivan and Nicholaides (Corporate testing services) for his valuable and continuing contribution to the coordination of nation-wide pathology collections.

The directors and staff of Biobalance (www.biobalance.org.au) for their help in initiating this program and the organising of ongoing advice and training through the outreach programs.

Corresponding Author:
Dr Richard Stuckey, MB.BS., DRCOG
Border Medical Clinic, PO Box 484,
Coolangatta, Queensland, Australia 4225
Email: richardstuckey@bigpond.com

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Holistic Healthcare

A dental perspective

†Ron Ehrlich B.D.S (Syd Uni) FACNEM (Dent)

ABSTRACT

An overview of the many and varied links between oral health and general health are outlined.

Discussion includes dental crowding, diet and dysfunctional breathing; sleep disordered breathing and the use of mandibular advancement splints (MAS); chronic tension headaches; oral infections including gum disease, tooth decay and jaw bone infections; together with the effect of mercury amalgam fillings as a commonly used restorative material and its effect on health.

A holistic approach to healthcare recognises the many links between oral health and general health when assessing our patients' health conditions and outcomes.

INTRODUCTION

The links between oral health and general health are many and varied.

The oral cavity is the gateway to the digestive and respiratory tract; its form and function are integral to their optimal function.

The oral cavity has a dramatic impact on the neurological system. A third of the sensory and motor cortex is focused in the orofacial region, together with its impact on autonomic nervous system. Bacterial infections, structural imbalances in the form of malocclusion and toxicity of restorative materials all have the potential to impact on the normal functioning of this system.

The oral cavity is the site of two common infections, tooth decay and gum disease. As a result chronic inflammation is common, affecting many systems and predisposing patients to increased risk of cardiovascular disease, stroke, diabetes, respiratory conditions, chronic inflammatory conditions, low birth weight in childbirth, and some cancers.

Dentists implant more material in patients, in the form of restorations, than all other professions put together. The choice of those restorative materials and the possibility of toxicity pose many challenges.

There are three things we do everyday, that we give little thought to, but if we do them well the potential for good health is dramatically increased. Those three things are sleeping, breathing and eating. The oral cavity plays a key role in achieving those goals.

DENTAL CROWDING, DIET & DYSFUNCTIONAL BREATHING

Nature has provided us with 32 teeth and yet dental crowding is endemic among technologically advanced populations and uncommon in primitive groups[1].

The development of the oral cavity and dentition of the infant, shows that the lower third of the face is the last component of the craniofacial complex to develop[2]. Nutrition is closely aligned with children's development, beginning prenatally and extending through childhood years[3]. Extensive research in the role of the western diet was well documented in the work of Weston A Price. Price noted the effect of prenatal nutrition on the development of the child and the effect of subsequent poor nutrition causing physical degeneration of the dento-alveolar complex[4] in form and function. Price found that cultures that followed traditional, ancestral, nutrient dense diets had adequate space for all 32 teeth, excellent dental arch form, breathing and posture, with little or no evidence of tooth decay or gum disease

Balanced breathing involves 8-12 breaths a minute through the nose, utilising the diaphragm with an end-tidal (ET) CO_2 of approx 40mmHg. Over breathing and mouth breathing can lead to lower ET CO_2 levels with resultant effects on blood pH and smooth muscle tonicity, with far reaching implications throughout the body.

Bearing in mind that the roof of the mouth is also the floor of the nasal cavity, a broad upper jaw allows for adequate airway, space for the tongue, encouraging nasal breathing, and with resultant effects on posture. More recent research has focused on the effect of widening a narrowed crowded maxillary arch, with resultant improvements in nasal breathing and head posture[5], while also positively effecting problems of mouth breathing and sleep-disordered breathing[6].

The shape of the upper arch is determined by both prenatal and early childhood nutrition together with a resultant balance of tongue, lip and cheek posture together with breathing patterns, i.e. nasal vs mouth breathing.

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SLEEP DISORDERED BREATHING

A sleep disorder disrupts and disturbs the overall quality of life. It can affect a child, teen, adult, parent or senior citizen. More than 70 million people in the U.S. have a sleep disorder. Most of those who have such a disorder are completely unaware of it. Many of those who are aware of it never choose to seek the help that they need. There are a wide range of problems associated with this common problem, ranging from bed-wetting, snoring, Gastro-oesophageal reflux disease (GERD or GORD), predisposition to health problems, behavioural problems as well as tiredness and depression.

The effect of jaw position at night on airway and the use of mandibular advancement splints (MAS) have been shown to be effective with 86% compliance. This represents a significant improvement on the 'gold-standard' CPAP treatment with its poor compliance record.

Oral appliances have been shown to have a beneficial impact on a number of important clinical end-points including the polysomnographic indices of OSA, subjective and objective measures of sleepiness, blood pressure, aspects of neuropsychological functioning and quality of life[7].

HEADACHES

Tension type headaches are the most common type of headache experienced by as many as 30% to 78% of the population at some time during their lifetime.

Oral muscle activity has a profound effect on posterior cervical muscle activity[8]. Tension-type headache pain patterns are consistent with the work of Travell[9] and Cyriax[10].

Well-designed oral appliances reduce oral and posterior cervical muscle activity, improve airway, and are an effective, conservative, drug-free treatment with long-term benefits to headaches, cranio-facial pain[11] and sleep disordered breathing[12].

ORAL INFECTIONS

Gum disease and tooth decay are two of the most common infections, resulting in chronic inflammation and bacterial load to the body.

Gum disease

Severe periodontitis affects about 10-15% of the population and gingivitis and mild periodontitis affect a majority of people[13]. Periodontal disease is a chronic inflammatory disease affecting the gum tissue and other structures supporting the teeth. If left untreated, it can lead to tooth loss, and may also interfere with other systems of the body. Several research studies have associated gum disease with other systemic conditions[14] including cardiovascular disease, diabetes and rheumatoid arthritis.

Periodontal inflammation is associated with an elevated systemic inflammatory state and an increased risk of major cardiovascular events such as myocardial infarction and stroke, adverse pregnancy outcomes such as pre-eclampsia, low birth weight and preterm birth, and altered glycaemic control in people with diabetes[15]. A recent study found that diabetics with gum disease had more than twice the risk of premature death due to kidney or heart disease, compared to diabetics with good oral health[16].

Tooth Decay

When a tooth decays there are two challenges that need to be met:

1. Restorative materials. If the decay is detected the tooth needs to be restored. The choice of restorative (filling) material ideally should be compatible with health

2. Tooth and jawbone infections. If the decay is not treated then the pulp (i.e. nerve and blood supply) of the tooth and eventually the supporting bone will become infected.

1. Restorative Materials

Traditionally, mercury amalgam fillings have been used extensively to restore teeth. These restorations contain 50% mercury. Mercury continually escapes from the restorations. Mercury from amalgam does not cause a specific disease - it causes mercury poisoning, which is characterised by a wide range of symptoms. The earliest symptoms are usually sub-clinical and neurological, namely fatigue, headaches, forgetfulness, reduced short-term memory, poor concentration, confusion, rapid mood swings, unprovoked anger, depression and suicidal tendencies. Mercury from amalgam easily crosses the blood-brain barrier and can damage any part of the central nervous system[17,18].

Mercury from amalgam fillings has been shown to cause a 50% reduction in kidney filtration after just two months in the mouth (animal studies)[19]. Kidney damage from mercury has been reported often in the literature[20,21,22,23,24].

Research from 1993 onwards has shown that mercury from amalgam fillings will cause an increase in the number of antibiotic resistant bacteria in the gut and mouth[25,26,27]. The numbers of antibiotic resistant bacteria fall rapidly after the amalgams are removed.

Mercury will always have a detrimental effect on the immune system. This creates an environment in the body for other diseases to develop[28,29,30,31,32,33,34].

The 1996 Richardson Report[35], commissioned by the Canadian Government examined the relative risks of composite resin components, concluding that safer alternatives to mercury amalgam are available.

2. Tooth and Jaw Bone Infections

Infection that spreads into the pulp of the tooth will also spread into the supporting bone.

Root canal treatment removes the gangrenous pulp and attempts to sterilise the tooth structure. The anatomy of a tooth, with millions of dentinal tubules, wide enough to harbour bacteria together with inaccessible accessory, makes this impossible.

However where root canal treatment is done as meticulously as possible, areas of granulation tissue and bone loss have been shown to reform what appears to be normal boney trabeculation.

It is essentially a question of balance between the remaining bacteria and toxins, and the individual's immune system. Where the immune system is compromised, bacteraemia from root canal poses a challenge to that immune system[36].

Once a tooth is removed, the area of infection should be thoroughly curetted. Failure to do so promotes the existence of osteonecrotic areas. Gram-negative bacteria usually colonise these areas. They are called areas of osteitis or NICO lesions (Neuralgia Inducing Cavitational Osteonecrosis). NICO lesions can act as foci of infection and also neural foci just as teeth with root canal treatment can[37,38]. Thorough curettage of the areas has been shown to be effective in treating these areas, which may be triggers for trigeminal neuralgia or have other systemic effects[39,40].

CONCLUSION

As the gateway to the respiratory and digestive system, as well as being highly innervated and vascular, oral health is pivotal to our general health.

As the site of the two most common infections, gum disease and tooth decay, together with the restorative challenges that require the implanting of foreign material into the human body, oral health takes on a more complex role than historically recognised.

A holistic approach to healthcare recognises the many links between oral health and general health when assessing our patients' health conditions and outcomes.

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†Ron Ehrlich, B.D.S (Syd Uni), FACNEM (Dent)

Ron Ehrlich has been in private practice in the Sydney CBD for 30 years and during that time has focused his practice on the many links between oral health and general health.

He has given his course, for health practitioners, "Holistic Healthcare- a dental perspective" in the UK and Australia. He has lectured extensively and appeared on radio and TV.

He has a particular interest in the role of nutrition and breathing on the formation of the dental arches, together with the role of bruxism on chronic tension headaches. He was awarded his Fellowship with ACNEM in 1996.

Tightening our belts on Metabolic Syndrome

Professor Ian Brighthope, MB.BS., D.Ag.Sci., FACNEM, FACHM

There's more to body fat than meets the eye, and not all fat functions in the same way. Important distinctions need to be made. Once considered an 'inert energy storage depot', adipose tissue is now recognised as a critical endocrine organ. Recognition of this fact now gives us a unique understanding of the mechanisms underlying Metabolic Syndrome or Syndrome X.

It also means that by modifying body fat distribution we can in most instances reduce insulin resistance, glucose intolerance, hyperlipidemia, and triglyceride levels. To significantly affect these conditions, there's no need to undergo the excruciating transformations as seen on television shows like Australia's 'Biggest Loser' either. Even modest reductions in fatty mass in central adipose tissue (the fat that tends to accumulate around our gut) can reverse this syndrome and reduce the risk of diabetes, heart disease and stroke.

Metabolic Syndrome or Syndrome X is a constellation of risk factors or a clustering of medical conditions that can lead to the development of diabetes, cancer, cardiovascular disease and their complications. This clustering of conditions or risk factors can be placed into a group sometimes referred to as 'the deadly quartet,' namely insulin resistance/impaired glucose tolerance, central visceral adipose tissue (abdominal obesity), dyslipidemia (LDL, HDL and triglycerides) and hypertension[1].

Of these four conditions the targeting of a reduction in central visceral adipose tissue remains the priority, as reducing waist circumference and abdominal fat affects all parameters[2].

It's not the fat but where it's at

Watching television programs such as the 'Biggest Loser', it is easy to assume that fat is just an unsightly accumulation of excess body mass. It is also easy to assume that just because you are overweight or obese that you are a candidate for metabolic syndrome and its deadly consequences, which may be something of a fallacy. In fact some obese individuals are quite healthy and demonstrate none of the conditions that characterise the metabolic syndrome.

This phenomenon is also seen in certain ethnic groups, such as Micronesian Nauruans and Melanesian and Indian-Fijians[3], although without doubt the most extreme example would have to be in Japanese Sumo wrestlers. These individuals, despite the fact that they are extremely obese, may be nonetheless extremely fit and healthy. They are athletes after all. But here's the rub: after they retire from the sport and discontinue their rigorous training (whilst continuing to live the high life), Sumo wrestlers then develop insulin resistance and metabolic syndrome.

How does this variance come about? The simple answer is that Sumo wrestlers have a large percentage of their body fat stores as Subcutaneous Adipose Tissue (SCAT).

As far as the Metabolic Syndrome is concerned, SCAT accumulation is not seen as the type of fat that increases risk. It is the accumulation of Visceral Adipose Tissue (VAT) that plays a critical role in the development of Metabolic Syndrome.

On the flip side of the Sumo equation, you have individuals whose weight appears normal yet have Metabolic Syndrome. This is usually because they have high levels of VAT. These people fall into a category of the Metabolically Normal Obese (MNO), and those who are 'fit and fat'. This supports the idea that conditions such as insulin sensitivity/resistance equate more with where the fat is located, rather than the total amount of body fat[3].

The Underbelly of Metabolic Syndrome

Fat that accumulates in the abdominal region is comprised of both subcutaneous adipose tissue (SCAT) and visceral adipose tissue (VAT). SCAT is stored beneath the skin and above abdominal muscle, whilst VAT is stored beneath abdominal muscle. In general, VAT accounts for up to 20 percent of total fat in men and 5–8 percent in women[4].

An important distinction here is that adipose tissue, once considered an inert storage depot, is now recognised as a critical endocrine organ that generates numerous polypeptide hormones and cytokines that are proinflammatory and potentially atherogenic, causing arterial plaque formation. These play a major role in affecting insulin action in skeletal muscle and they can lead to a low-grade state of inflammation and endothelial dysfunction[3].

Adipose tissue in the abdominal region displays a great deal of metabolic activity. It produces proinflammatory cytokines TNF alpha and interleukin 6, as well as Adipokines such as resistin and Adipolectin. It also produces prothrombotic mediators such as PAI-1.

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You could say that abdominal VAT deposits result in the orchestration of a kind of metabolic disharmony. Neuroendocrine (gut-brain) signaling systems involved in the control of appetite and satiety are disrupted; something that physiologists have referred to as 'the hypothalamic appetite circuit[5]'.

In the metabolic syndrome, this circuit – which involves the secretion and utilisation of regulatory chemicals such as insulin, ghrelin, cholescystokinin (CCK), and leptin – is adversely affected.

In central obesity with a high ratio of VAT, these chemical's messengers that regulate appetite, energy balance and fat storage are adversely disrupted[6].

"In this situation, an adipose tissue functional failure occurs resulting in changes in systemic energy delivery, impaired glucose consumption and activation of self-regulatory mechanisms that extend their influence to whole body homeostasis[7]."

The ongoing dynamic balance of stimulation and inhibition that these chemicals initiate is often tilted unfavourably in the direction continuing fat storage and inflammation. However other important adipokines such as adiponectin, do have beneficial effects such the inhibition of inflammation, although adiponectin levels are lowered when visceral abdominal obesity is present.

A Complex Equation

To reverse the cluster of conditions that characterise the metabolic syndrome requires considerably more than reducing the amount we eat and increasing our activity levels. These are but two factors in a complex equation that must also take into account the effects of aging, genetics and gender. As we age, the hormonal balance changes, and not adopting measures that take these changes into account can make losing weight and reversing the metabolic syndrome an uphill battle. Factors such as sleep debt and chronic stress levels should also be taken into account. All of these can influence the way the body stores and utilises energy. In order to mobilise abdominal fat and maintain a healthy ratio of visceral to subcutaneous fat it is extremely important that we mount a "simultaneous therapeutic attack on a broad front[8]."

Diet

Over the last decade at the very least, a vast amount of energy has gone into researching the effects of the food components of traditional diets in combating the killer diseases of modern civilisation such as cardiovascular disease and diabetes, and its precursor the Metabolic Syndrome. A strong emphasis of this research has been on the Mediterranean region, and components of the diets of this region such as grapes, berries, wine, olive oil, garlic, nuts and legumes etc, have all demonstrated spectacular healing benefits either alone or in combination. Many of these foods have been identified as containing compounds that exert anti-obesity, anti-diabetic, anti-inflammatory and cardio-protective affects. Some notable examples are the anthocyanidins from berries, resveratrol from grapes and the sulfides and other bioactive compounds of garlic. In fact the sulphur compounds found in garlic influence the HMG-CoA reductase enzyme, an action similar to statin drugs but without the harmful side effects.

Recent research has also shown that carotenoids from edible sea weeds, catechins from green tea, polyphenols and theobromine from chocolate, curcumin from turmeric and the components of cinnamon also display activity that would be of benefit in the Metabolic Syndrome. Many of these compounds are now available as dietary supplements, which in many instances display greater bioavailability and efficacy.

The Glycemic Index Again

Despite the controversy that this concept has caused, research is consistently showing that a very effective dietary measure for reducing fat mass is to reduce the glycemic load in the diet. To quote Jenny Brand Miller in 2005, "the past 2 years have seen a steady stream of reports indicating that restriction or modification of carbohydrate intakes can favorably affect weight loss and cardiovascular disease (CVD) risk factors[9]." More recent clinical trials have shown that both high-protein and low-GI dietary regimens increase visceral fat loss[10].

Probably the easiest way to decrease glycemic load is to maintain a relatively high ratio of protein to carbohydrate at each meal, with the emphasis on carbohydrate from vegetable sources. This ratio is all-important. Good protein sources such as lean meat and fish should be emphasised to increase satiety and decrease cravings for high glycemic foods such as bread. Not only does this increase insulin sensitivity and improve energy utilisation and storage, but it also influences the hypothalamic appetite circuit, effectively switching off the appetite centres in the brain[11].

Stress

The downstream affects of stress and worry are also associated with abdominal girth. Chronic stress increases the adrenal hormone cortisol which also increases VAT in abdominal tissue. Repeated episodes of stress that stimulate corticosteroid secretion from the adrenal

glands can eventually damage the hippocampus involved in the down regulation of cortisol production. It has been hypothesised that persisting elevated cortisol might play a role in VAT accumulation[12]. Intracellular regeneration of cortisol in visceral fat creates a local cycle that promotes central adiposity and contributes to insulin resistance.

In chronic stress elevated cortisol levels cause an increase in blood pressure, whilst at the same having a negative effect on arterial blood flow[3]. There are even studies that show that episodes of mental stress can have a negative affect on circulation, constricting blood vessels even in young healthy people[12]. Psychological stress can also reduce the clearance of triglycerides[13] and disturb hormones that help regulate appetite and energy storage such as leptin. Improvements in leptin sensitivity (and efficiency) can also improve the action of insulin whilst reducing triglycerides[8]. Meditation plays an equally important role in weight management as does exercise[14].

Sleep Debt

"Sleep loss due to voluntary curtailment of time in bed has become a hallmark of modern society[15]."

Research conducted into this area is beginning to show that sleep duration may be an important regulator of body weight and metabolism. Links have been found between circadian rhythms and key components of energy homeostasis, thermogenesis and hunger/satiety and the sleep-wake cycle. Sleep debt has a harmful impact on carbohydrate metabolism and endocrine function. Levels of hormones that regulate appetite and energy balance such as leptin and ghrelin are altered, as demonstrated in the population-based Wisconsin Sleep Cohort Study. Participants in this study who slept for five hours had 15 percent lower leptin levels and 15 percent higher ghrelin levels than those who slept for eight hours[16]. The brain interprets a drop in leptin as a sign of starvation, so it responds not only by boosting hunger, but also by burning fewer calories. That means you put on more weight even if you don't eat any more food.

In another study it was shown that when twelve healthy young men restricted to just four hours of sleep for two consecutive nights, their leptin levels were 18 percent lower and their ghrelin levels were 28 percent higher than after two nights of sleeping for ten hours. One of the principle authors of this study, Professor Eve Van Cauter, PhD, was quoted as saying that this level of sleep deprivation brought the participants close to a prediabetic state[17].

Concluding Remarks

A comprehensive inclusive management strategy to combat Metabolic Syndrome is inevitable in a health system which has to all intents and purposes ignored the counsel of the wise and produced a generation of children who will, if they don't die before their parents, become a colossal disease burden unto themselves.

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Case study: a curious case of Goji Berry excess

Danielle de Natris, BScND, GradDipNut (Deakin), MATMS

TRENDS IN MODERN DAY HEALTH

A common trend in the past years has been the popularisation of specific natural products, both in foods or supplements. We saw Echinacea in the limelight five or six years ago, then it was Aloe Vera, and the year after that we all needed our Spirulina according to popular opinion. Vitamin D seems to be the flavour of the year in 2009-2010, and with good reason as it has far more applications than originally thought.

Two years ago a berry caught everyone's attention: The Goji berry from the Himalayas. Due to marketing, this berry became very popular with the general public. Every self-respecting health food shop, even supermarkets, sold this product, usually as a drink. Its main attraction was the anti-oxidant effect. It is this berry that brings us to the curious case of Angela, a 58 year old female.

ANGELA'S CASE

Angela has been a patient for several years, and initially presented with a wish to improve her general eating habits. This bubbly lady had lost a close family member, and as a result of her grief, she started "comfort eating." Her realisation of this, and her weight gain inspired her to "start again," so the aim was to regulate her food intake and encourage weight management.

A concurrent complaint included Osteoarthritis in both hands, slightly in toes, but not severe enough to require painkillers. Of late, Angela had been experiencing cramp in her extremities, especially nocturnal. Bloating occurred after meals, especially bread, and at times she could be constipated. If she had some Goji juice it seemed to assist with alleviating as well as preventing it.

She reported that she "never felt really hungry," but that she craved carbohydrates. Her water intake was 1 litre daily, no coffee at all, several cups of black tea with milk only, and little alcohol. Dinner was shared at night, and consisted of normal home cooked foods, inclusive of meat (3/7), poultry (3/7), and fish once weekly. Vegetables accompanied the evening meals in abundance, but always in a cooked form; Angela does not like salads.

ANGELA'S DIETARY INTAKE

On review of her diet, she demonstrated a very irregular eating pattern, with breakfast taken daily, but skipping lunch. Most days her first food would be toast with tomato, but "on a bad day, I'll have jam, peanut butter, and pickles", as she phrased it. Her diet seemed to fluctuate with her perception of self, differentiating between good days and bad ones in both how she felt about herself, and her food choices. Further observations indicated magnesium and zinc deficiency signs. Her blood tests showed elevated total cholesterol at 7.8 (3.5-5.5), with low HDL, low triglycerides, and high LDL. No further abnormalities were noted at the time.

CHANGES FOR ANGELA

Her initial treatment included a lot of dietary advice (changing from refined to complex carbohydrates, increased fibre, etc), and some supplements; CoQ10 for the cholesterol (1/day) , combined with a tablet of red rice yeast (2/nocturnal) , magnesium for muscle relaxation (1/morning, 1/night), nervous system support and as part of metabolic processes, and a multi B vitamin (1/day) to improve energy and motivation. A tablet including Chromium, Cinnamon, and Korean Ginseng (2/day with a meal) was used to reduce cravings, stabilize blood sugar levels, and balance energy. Some initial liver clearance was desired to assist the digestive system: choline, taurine, and glycine combined with some herbs in a tablet form were the product of choice twice daily.

Angela did very well on the suggested treatment and was wonderfully compliant. Her appetite seemed to regulate itself, as did her weight; she lost a few kilos, and became far more energetic and motive. Her cramps did not recur, her bloating improved on different breads, and she followed all suggestions meticulously. We reduced some of the supplements after about three months, and she maintained and improved steadily.

	06/07/09	08/04/06	Reference range (based on date of test)
ALP	175	106	30-120
GGT	371	56	5-45
ALT	327	69	5-40
AST	181	40	5-40
Ferritin	713	16	30-500
(Total) Cholesterol	6.1	7.8	3.5-5.5

Table 1.

AN UNFORESEEN DEVELOPMENT

Unexpectedly, she rang on a Friday afternoon. She had gone for her scheduled cholesterol tests, and upon receiving the result, her GP had rung her instantly, and she was booked in to see him on Monday first thing. Her liver function tests were through the roof, so to speak, and her ferritin levels too. See Table 1.

I rang her back and asked for details of her diet: I knew she was eating far healthier than ever before. She mentioned the Goji juice again, as part of her daily intake of fluids, and she said she had become a distributor for the brand, so she could afford to drink "endless amounts"of it.

GOJI BERRIES: MORE POTENT THAN EXPECTED

This made alarm bells ring. Over the weekend I spent some time investigating Goji berries further and discovered that good quality Goji berry juice can contain up to 9 mg of iron per 100ml. Considering Angela was drinking 1- 2 litres a day, this would amount to up to anywhere from 90-180 mg iron daily: it was easy to see the incredible amount of iron this non-menstruating female was accumulating. The high vitamin C content of Goji berries would increase the uptake of the iron even further. Plant-based iron is less bioavailable than heme iron (about half) but the amount absorbed daily would still by far surpass the RDI set by the NMHRC, which for Angela's age group is 8 mg per day.

TREATMENT AND RESULTS

Angela was very open to my findings and promised she would stop drinking her Goji juice for at least 3 months. Her GP sent her for a number of tests and ultrasounds but no findings were noted, so we focused on liver clearance and diet. Angela reduced her meat intake to once weekly, ate a predominant vegetarian diet for three months, and increased water intake.

She did a month of chelating with Cilantro (Coriander) and liver herbs and nutrients, and kept a very clean diet and lifestyle. Initially it was hard, and Angela reported increased constipation and fatigue, but once the liver started clearing itself of excessive iron, things vastly improved. Six months after this episode, her liver function tests are lower than they were in 2006, and her ferritin is down to 230. Her energy levels and digestive system are back to normal, and she has achieved a good amount of weight loss; the clean diet she followed has contributed, and some of the changes have become permanent fixtures in her life. When we mention Goji berries, she laughs, and says she looks forward to her one-glass-a-day, but has promised not to increase that ever again!

Profile - Victorian Students' Aid Program

The Victorian Students' Aid Program is a student initiative that delivers needed equipment and health resources to disadvantaged communities in Australia and the developing world. VSAP is run entirely by students, from a range of faculties at both the University of Melbourne and Monash University.

Our vision is that all doctors will have essential medical supplies to treat their patients. We hope that one day, all countries will have access to basic medical equipment and that excess medical supplies in developed countries will not go to waste.

We supply targeted aid, specifically requested by communities and therefore of most use to them. To achieve this, our partner hospitals provide us with 'wishlists' of specific equipment needed, which we then work to obtain and deliver. In this way, we aim to maximise the effectiveness of aid provided and avoid the delivery of equipment that is either not needed or not compatible with local technology, expertise or practice.

Recently we've provided medical supplies to hospitals and clinics in Malaysia, Solomon Islands, Senegal, and both Arusha and Zanzibar Island in Tanzania.

Amira Dkeidek, like many of our representatives on placement, discovered that even simple equipment can make a difference to hospitals in need. Amira was on clinical placement at Hopital de Fann of Dakar, Senegal earlier this year and was able to deliver supplies on behalf of our program. Amira writes;

"Basic resources are scarce at Fann, and the patients are gravely ill and often undernourished. I was able to participate in the care of patients with faltering immune systems secondary to HIV infections and rampant tuberculosis and bacterial meningitis. Tetanus, measles and malaria were an observable reality rather than unwitnessed diseases of other places.

Everyone at Infectious Diseases at Fann expressed immense gratitude for the medical supplies I carried over to them from VSAP – for that, our donation was worth every bit of the effort it took to plan and pack the goods. Most of my luggage was filled with syringes, cotton wool and gloves – not sophisticated medical equipment by any means, but much needed nevertheless."

In addition to VSAP being run entirely by volunteer students, it is medical students on placement who deliver the needed equipment. From donors, the supplies are directly passed on to where it is needed most.

In December 2009, Erin Carroll had the opportunity to experience placement in a variety of hospitals in Mexico, Cuba, and Guatemala. This included a stay at a small Red Cross hospital in the province of Oaxaca, Mexico, where Erin was able to deliver donated supplies. Erin writes;

"Prior to my departure I arranged with VSAP to take some medical supplies away with me. VSAP provided me with some boxes containing general basic medical provisions, such as bandages and dressings. Both doctors and students were absolutely delighted when I produced the packages donated by VSAP. The hospital was extremely bare and the 8kgs worth of supplies was a much needed donation."

More recently we've been collecting donations from our sponsors, including our generous long-term supporter, the Peter MacCallum Cancer Centre, in preparation for a number of medical students leaving for aid placement over the university holidays. These include students heading to Belize, Swaziland, Kenya and Laos.

If you would like to learn more about VSAP or partner with us in our endeavour, you can directly reach our sponsorship officers Josh Ginnane and Kate Macintire at vsap.sponsorship@gmail.com. Or visit our website at www.vsap.org.au.

Erin Carroll in Mexico

In the News

Shirley Schurmann, RN, BApplSci, Dip NurseEd, MEdStudies, Grad Cert Health Sci (Nutr & Enviro Med)

On ABC Radio's Health Report on 8 November 2010, Associate Professor John Walsh reported findings from a large international study, confirming that sub-clinical hypothyroidism, a suspected risk factor for coronary heart disease (CHD), is associated with an increased risk of CHD events and CHD mortality. Previous data regarding this association has been conflicting. Professor John Walsh is an endocrinologist at the Charles Gairdner Hospital Perth and University of Western Australia.

This study aimed to assess the risk of CHD and total mortality for adults with subclinical hypothyroidism. The meta analysis of 55,287 adults with 542,494 person years of follow up between 1972 and 2007 was supplied from 11 prospective cohorts in the United States, Europe, Australia, Brazil, and Japan including the Busselton study from WA. The risk of CHD events was examined in 25,977 participants from 7 cohorts with available data. Subclinical hypothyroidism was defined as a TSH level of 4.5 to 19.9 mIU/L with normal thyroxine concentrations.

The study found the risk of CHD events and CHD mortality increased with higher TSH concentrations and became significant once concentrations reached 10 mIU/L. People with the mildest form with levels of up to 7 mIU/L did not have increased risk of CHD. Those with intermediate levels between 7 and 10 mIU/L had an increased risk of CHD mortality although the risk of CHD wasn't as significant. If people had a TSH above 10 they did have an increased risk of CHD events and CHD mortality but total mortality was not increased.

Results were mixed and don't appear convincing but were similar after adjustment for traditional cardiovascular risk factors and did not significantly alter with age, sex or pre-existing cardiovascular condition.

This study's recommendation that effective treatment for high TSH levels with Thyroxine needs to be tested on a large cohort in a blinded placebo trial for a very long time, is unlikely to happen. A potential confounder in this study was the pattern similar to subclinical hypothyroidism found in people who are just sick. Thus analysis was restricted to people who didn't have CHD at commencement of the study.

Recommendations for practice

- With the best level of evidence, if TSH is above 10 mIU/L, and possibly above 7 mIU/L, the authors recommend patients should be considered for treatment with Thyroxine
- Patients with TSH levels up to 7mIU/L without symptoms of hypothyroidism need not be treated with Thyroxine
- Nutritional supplements tyrosine, zinc, Vitamin A and E function in the manufacture of thyroid hormone and can be considered for those with TSH <7mlU/L. Dietary or supplements of Iodine should not exceed 600mcg per day for any length of time
- Exercise is important in a treatment program for hypothyroidism in order to stimulate thyroid function
- Possible exceptions to thyroxine treatment <7mIU/L are women who are pregnant or contemplating pregnancy and in whom a mildy underactive thyroid may be considered bad for the baby's development
- Periodic measurement of TSH levels for people taking Thyroxine, taken every 6 to 12 months are neccessary to avoid over activity of the thyroid that may lead to atrial fibrillation.
- Possible screening for TSH as part of routine pregnancy screening.

Reference:

Rodondi N et al. Subclinical Hypothyroidism and the Risk of Coronary Heart Disease and Mortality. JAMA 2010;304:1365-1374

Your College

LAST AND BY NO MEANS LEAST!

Kerry Harris lecturing in the Primary Course

The last training for 2010 was enthusiastically received by all who attended. It was held at the Vibe Hotel North Sydney, where ACNEM presented the 4-day Primary course in NEM.

In addition, a 2-day Allergy, Autoimmune, Skin Prick Testing and Dermatological Conditions Special Training Program (STP) was presented to assist practitioners to handle the vast majority of allergy problems that present in General Practice. A second 2-day STP was also presented, which once again offered ACNEM's popular training in Thyroid and Adrenal conditions. The training focused on helping delegates to improve their understanding of the biochemical processes behind the symptoms and treating subclinical and clinical thyroid conditions with diet, nutrients and herbs as well as exploring the role hormones and prescription medications can play.

Robyn Cosford lecturing in the STP

A free evening lecture was held entitled, "Living Longer - modern patterns of disease, diet, epigenetics and ageing". Guest speaker, Dr Robyn Cosford, presented the lecture after drinks, finger food and networking in the company of like-minded healthcare professionals. The seminar was followed by the ACNEM Annual General Meeting and a new Board was elected.

To top off the four days a number of candidates became Fellows of the College, and were awarded their Fellowship Certificates, amidst much applause from the audience. We welcome our new Fellows:

Dr Devind Bhullar
Dr Kerry Harris
Dr James Read
Dr Lorna Scott
Dr Robert Vial (who passed his exams earlier this year and accepted his Certificate in Sydney)
Dr Damian Wojcik
Dr Michael Woodbridge

Congratulations also goes to Dr Jacques Coetzee who passed his part 1 exam and is now half way to becoming a Fellow.

Kerry Harris

Robert Vial

James Read

Michael Woodbridge

Devind Bhullar

Damian Wojcik

Lorna Scott

ACNEM ATTENDS THE 2010 GPCE IN MELBOURNE

ACNEM again shared an exhibit stand with AIMA at Melbourne's GPCE, which was manned by Michelle Bradford (ACNEM), Jimena Acevedo (ACNEM) and Janelle Lamont (AIMA). The stand proved very popular with attendees who were keen to enter a draw to win an ACNEM Primary Course in Nutritional and Environmental Medicine. Congratulations to the winner, Gail Mottram!

Janelle Lamont & Michelle Bradford

TIS THE SEASON ...

All of us here at ACNEM would like to take this opportunity to wish our members and supporters a very happy and restful holiday season. Thank you to everyone who has so willingly and passionately contributed their time and energies to the growth of NEM over this past year.

All our very best to you and yours ...

Stephen, Michelle, Jimena, Kathryn and Max

Upcoming ACNEM Courses

5th - 6th March, 2011 – Auckland

Injectable Nutrients & Heavy Metal Detoxification including Certification (2 days, 5th-6th March)

The injectable nutrients component of this training program includes the safe and effective use of Vitamin B complexes, Folic Acid, B12, Vitamin C, Magnesium, Calcium, Zinc, Iron, Glutathione and Alpha-Lipoic Acid. The heavy metal detoxification component includes indications, safety, protocols of treatment and chelating agents such as EDTA, DMSA, DMPS, GSH & IVC, with follow-up certification (testing) after the course.

[This special training program has a distance learning (online) component which requires you to view a number of lectures on your computer in the month prior to the face-to-face component. You will need a broadband connection to do this. Following the 2-day face-to-face training, you will continue to have access to the online resources (including additional lectures) for another two months, during which time you may also complete the online assessment and certification in heavy metal detoxification.]

25th - 28th August, 2011 – Brisbane/Gold Coast

Primary Course in Nutritional and Environmental Medicine (4 days, 25th-28th August)

The ACNEM Primary Course in Nutritional and Environmental Medicine is a practical, evidence-based, foundation program in NEM for GPs and other graduate health professionals.

A to Z of NEM - Putting it into practice (2 days, 25th-26th August)

The NEM approach to many conditions commonly seen in general practice. From allergies to arthritis, asthma, eczema, depression, diabetes, fatigue, gastro, heart disease, hypertension, infections, metabolic syndrome and obesity, etc. This 2-day training program is an excellent follow-up to the 4-day Primary course, providing practical clinical pearls for general practice.

Excesses & Addictions - Poor lifestyle choices (2 days, 27th-28th August)

Poor lifestyle choices and marginal health are seen every day in general practice. Lifestyle medicine is an emerging field in the face of increasing chronic disease and illness and a move towards preventative healthcare. This training program will hear from experts in the fields of addiction medicine and behaviour modification, and will investigate the use of NEM to develop optimum health, with focus on supporting behaviour change and recovery from poor lifestyle choices and everyday lifestyle-related excesses including smoking, alcohol over-use, over-eating, overweight and obesity.

FOR UP TO DATE INFORMATION PLEASE VISIT WWW.ACNEM.ORG

24th - 27th November, 2011 – Melbourne

Primary Course in Nutritional and Environmental Medicine (4 days, 24th-27th November)

The ACNEM Primary Course in Nutritional and Environmental Medicine is a practical, evidence-based, foundation program in NEM for GPs and other graduate health professionals.

Women's Health - Menarche to Menopause (2 days, 24th-25th November)

Women are from Venus...a comprehensive guide to women's health through life stages from a NEM perspective. This training program will address puberty, pre-menstrual syndrome, breast problems, cervical dysplasia, PCOS and other gynaecological problems, fertility and conception, pregnancy, breast feeding, post-natal depression, peri to post-menopause, other hormone imbalances, hormone replacement therapy, osteoporosis and other health problems of ageing

Sleep Disorders & Fatigue (2 days, 26th-27th November)

When fatigue is not relieved by enough sleep, good nutrition, or a low-stress environment, it may be caused by, or co-morbid with, a wide range of acute and chronic conditions including allergy, asthma, anaemia, chronic pain, depression, diabetes, CHF, prescription medications, adrenal or thyroid problems, to name a few. Sleep disturbances may include obstructive sleep apnoea, insomnia and other circadian rhythm sleep disorders. This program will hear from experts in sleep science and will investigate the use of NEM to address the physical and mental health aspects of fatigue and sleep disturbances commonly seen in general practice.

22nd - 25th March, 2012 – Auckland

Primary Course in Nutritional and Environmental Medicine (4 days, 22nd-25th March)

The ACNEM Primary Course in Nutritional and Environmental Medicine is a practical, evidence-based, foundation program in NEM for GPs and other graduate health professionals.

Tiny Tots to Teenagers - Paediatrics (2 days, 22nd-23rd March)

A comprehensive NEM approach to paediatrics, commencing with the nutritional requirements for healthy pregnancy, birth and optimal development in the early years of life, additives and preservatives, ADHD, ASD and other behavioural disorders, allergies and sensitivities, many childhood conditions commonly seen in general practice, adolescent mental health and eating disorders.

Tired & Wired - Thyroid & Adrenal Conditions (2 days, 24th-25th March)

"Serum TSH is normal but your patient presents with a range of symptoms of hypothyroidism". This popular training program investigates the biochemical and physiological processes behind the symptoms of clinical and sub-clinical thyroid and adrenal conditions, and presents evidence-based NEM approaches and hormonal treatments.

The Science of **Nutrition in Medicine** and Healthcare

Friday 13 May – Sunday 15 May 2011

Swiss Grand Hotel and Resort, Bondi Beach, Sydney, Australia

Themes

- Epigenetics & nutrigenomics
- Mental health
- Metabolic & cardiovascular conditions
- Cancer
- Scientific (abstracts) stream

Who should attend

- GPs & medical specialists
- Nurses
- Scientists and researchers
- Naturopaths
- Dieticians
- Nutritionists
- Psychologists
- Other health professionals
- Public health professionals

Key Dates

Registrations open :15 November 2010
90 day early bird closes : 15 February 2011
30 day early bird closes : 15 April 2012

Scientific Program

Abstract submissions open	1 December 2010
Abstract submissions close	15 March 2011
Abstract presenters notified	31 March 2011

Dr Norman Swan, of the ABC Health Report, will be facilitating as Master of Ceremonies. Dr Swan is known for his breadth of medical and scientific knowledge and uncompromising style as a facilitator of interviews and panel discussions. We expect proceedings to be engaging and thought provoking.

The full conference program will be available soon. For more information and to register for this event please visit www.nutritionmedicine.org.au
Sponsors and exhibitors please direct enquiries to Michelle Bradford. Phone: 9597 0363 or info@nutritionmedicine.org.au

ACNEM TRAINING

...INTEGRATING NUTRITIONAL & ENVIRONMENTAL MEDICINE INTO CLINICAL PRACTICE

RACGP QA&CPD APPROVED ACCREDITED PROVIDER

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PRIMARY COURSE IN NEM BY ONLINE (DISTANCE) LEARNING

The ACNEM Primary Course is available online by distance learning.

The online course contains 'streaming' video content, filmed at recent face-to-face courses, allowing you to pause and restart lectures, and to download lecture slide notes and handouts.

Participants are also encouraged to engage with other online participants and to ask questions via the online forums.

In addition to the Primary Course, Special Training Programs in 'The Gut' and 'Epigenetics/Nutrigenomics' are due to be launched online in early 2011.

ACNEM TRAINING IS...

Evidence and practice-based:

Practical and practice-based, allowing you to start integrating nutritional therapeutics into your practice, immediately and safely. The training provides basic principles (often new to practitioners) and a framework to make sense of the plethora of information on non-orthodox treatments. It leads to better identification of the underlying causes of illness and disease, and to improved patient outcomes.

Strongly referenced to the major medical literature, with references provided. ACNEM training is interactive with case studies and discussion, comprehensive ongoing training opportunities, collegiate, networking and a Fellowship Program.

AUSTRALASIAN COLLEGE OF NUTRITIONAL AND ENVIRONMENTAL MEDICINE

ACNEM®

For more information contact ACNEM:
Phone: +61 (0)3 9597 0363 Email: mail@acnem.org Website: www.acnem.org