



# ACNEM JOURNAL

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NUTRITIONAL AND ENVIRONMENTAL MEDICINE



THE EFFECTIVENESS OF TARGETED  
NUTRIENT THERAPY IN TREATMENT  
OF MENTAL ILLNESS

HOLISTIC HEALTHCARE

TIGHTENING OUR BELTS ON  
METABOLIC SYNDROME

CASE STUDY  
A CURIOUS CASE OF GOJI BERRY EXCESS





## 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 Menral 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](http://www.acnem.org), email [mail@acnem.org](mailto:mail@acnem.org) or phone +61 (0)3 9597 0363.



# HOLISTIC HEALTHCARE

## A DENTAL PERSPECTIVE

<sup>1</sup>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<sup>1</sup>.

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<sup>2</sup>. Nutrition is closely aligned with children's development, beginning prenatally and extending through childhood years<sup>3</sup>. 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<sup>4</sup> 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<sub>2</sub> of approx 40mmHg. Over breathing and mouth breathing can lead to lower ET CO<sub>2</sub> 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<sup>5</sup>, while also positively effecting problems of mouth breathing and sleep-disordered breathing<sup>6</sup>.

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<sup>7</sup>.

## 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<sup>8</sup>. Tension-type headache pain patterns are consistent with the work of Travell<sup>9</sup> and Cyriax<sup>10</sup>.

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<sup>11</sup> and sleep disordered breathing<sup>12</sup>.

## 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<sup>13</sup>. 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<sup>14</sup> 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<sup>15</sup>. 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<sup>16</sup>.

### 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<sup>17,18</sup>.

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

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<sup>25,26,27</sup>. 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<sup>28,29,30,31,32,33,34</sup>.

The 1996 Richardson Report<sup>35</sup>, 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 bony 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<sup>36</sup>.

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 Cavitation Osteonecrosis). NICO lesions can act as foci of infection and also neural foci just as teeth with root canal treatment can<sup>37,38</sup>. 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<sup>39,40</sup>.

## 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.