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CAN WE DO MORE TO REDUCE THE BURDEN OF CANCER?

COERCIVE AND MANDATORY IMMUNISATION

INTRAVENOUS EDTA CHELATION THERAPY

INJECTABLE MAGNESIUM

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COLLEGE PROFILE

The Australasian College of Nutritional and Environmental Medicine (ACNEM) is a not-for-profit medical college established in 1982, offering postgraduate training for health professionals in nutritional and environmental medicine (NEM), representation and networking for members, and a popular referral service for members of the public looking for doctors with training and experience in NEM. ACNEM also holds free public lectures for health professionals and the general public at which experts speak on various aspects of NEM.

Full Membership of the college is open to registered medical doctors and dentists, while Associate Membership is available to other tertiary qualified 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 peer-reviewed ACNEM Journal, containing original scientific papers, articles, news and comment relevant to this area of medicine.

Nutritional Medicine is the study and application of the interactions of nutritional factors with human physiology. In particular, it is concerned with the normal biochemical pathways and the consequences of inadequate or inappropriate food intake. Nutritional Medicine is central to health optimisation and fundamental in the prevention and treatment of most conditions.

Environmental Medicine is concerned with those physiological and psychological symptoms and interactions that result from allergy or sensitivity to various inhalants and chemical substances in air, water and food.

Treatment with nutritional and environmental 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 minerals, vitamins, trace elements and essential fatty acids, where diet alone cannot rectify physiological imbalances. Excesses or deficiencies of any nutrient or the presence of toxic chemicals or electromagnetic radiation may result in cellular dysfunction and illness, whereas the homeostasis promoted in NEM allows optimal self-healing by the body.

ACNEM training is regarded as unique in the world, with doctors attending regularly from overseas, especially Asia. The four-day foundation (Primary) course and the wide range of topical two-day courses (STPs) are designed for registered health professionals, predominantly medical doctors, who wish to learn more effective ways of treating their patients. Content is strongly referenced and presented by some of Australia's leading medical and clinical experts, with practical tools to aid integration into clinical practice.

Dr Matt Shelton lecturing in the Primary Course

ACNEM training leads to a strong sense of collegiality amongst delegates, with many members later enrolling in the ACNEM Fellowship program.

After 25 years of pioneering nutritional and environmental medicine into general practice, ACNEM is looking forward to a future where 'integrative medicine' is just 'good medicine'.

ACNEM is a fully accredited RACGP QA&CPD training provider for the 2008-2010 Triennium, with 40 Category 1 points allocated to each training program. ACRRM points are also applicable.

PRIMARY COURSE (4 DAYS)

The Primary course covers the key nutritional, environmental and biochemical factors in well-being. The course enables practitioners to immediately begin practising nutritional medicine, confidently and safely.

STPS (2 DAYS)

An "STP" is ACNEM-speak for a Special Training Program, usually a two-day, highly practical, discussion-based examination of relevant topics. Prior attendance at the Primary Course is preferred but not essential. Some STPs offer Certification as an optional examination, such as for Chelation Therapy. A wide variety of STPs are offered at locations around Australia and New Zealand to provide continuing specialised education in NEM for our Primary Course graduates, members and other interested health professionals.

FELLOWSHIP

The ACNEM Fellowship Program is open to medical doctors who are full members of the College and who have completed the Primary Course in the previous two years or are soon to do so.

The Fellowship Program ensures thorough training and practice in NEM, provides peer recognition of a high level of competence in NEM, creates opportunities for "specialty" recognition resulting in higher fees and increased credibility with patients.

For more information about ACNEM, please visit www.acnem.org, email mail@acnem.org or phone (03) 9597 0363.

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Editorial

From The President – Gary Deed, MB BS, DipHerbMed, FACNEM

ACNEM has certainly seen some major positive changes over the past 18 months to two years.

We must be grateful to those who have driven us to look at past practices and begin the journey to building a College that is more responsive to the needs of our members and striving to be the Peak educational body for doctors and health professionals in nutritional and environmental medicine in Australia and NZ.

Thanks to Dennis Crowley who took on the job of getting us through a difficult financial period and who has moved on to focus on support for children with autism, a subject very dear to his heart. Stephen Penman our new CEO has brought a fresh professional face to the College and will drive our focus for collaboration, representation and advocacy for the College membership.

We have noted a greater number of members seeking support for their work; through different educational topics and modes of delivery, but also for professional practice with Medicare Australia auditing a higher proportion of practitioners. The College is now providing educational sessions strategically supporting our members in maintaining the high standards of care that doctors trained through ACNEM can provide, while avoiding undue concern about legal or other challenges. Please feel free to speak to the office about when and where these sessions are being held.

Some helpful hints are: If approached by Medicare Australia or other bodies such as your Medical Board; certainly seek your own legal counsel, but also feel free to seek support from the College. Be clear in identifying what the basis of the issues are, be co-operative with any staff or authority you have dealings with, and be willing to adapt your practice systems and processes if requested to do so. Hostile confrontations, refusal to co-operate or inability to address the basis of concerns will never achieve a positive result. One theme emerging is that some of our doctors have not kept up their education and are applying principles that may not be current and evidence-based. This is a timely reminder that we all need to stay abreast of new information, so I encourage you to consider attending our STPs or re-visiting the Primary course.

The College is also seeking to have our members better recognised as being better trained and specialised compared to other general practitioners. In support of this, ACNEM is actively working with AIMA and the RACGP to be involved in the formation of an "integrative medicine" faculty as a recognised interest group of general practice here in Australia. We will keep all members informed as this exciting prospect emerges.

Finally, our college relies on the generosity and passion of our members – the more you contribute the more you will get out of the college – Stephen Penman, and the Board have initiated a wonderful newsletter in addition to the College journal so we can share more freely. So I encourage you – if you have ideas, you have a skill you wish to share, want to run a local educational meeting, have a great topic for an STP you think others may wish to hear about – please contact us on (03) 9597 0363 or mail@acnem.org.

Can we do more to reduce the burden of cancer?

Gerald Lewis, MBChB, FRCP, FRACP, MD

With all our sophisticated investigative techniques, we doctors can identify cancers earlier and earlier. This increases the likelihood of successful treatment and improves life expectancy, however many believe that today people with cancer live longer because of earlier diagnosis, rather than the benefits of the therapy they receive.

A recent paper from an Australian oncology/radiotherapy group[1], discusses just how dismal the benefits of chemotherapy are. In their paper the authors state that chemotherapy only increases life expectation by 2-3%. Their oncology colleagues come back saying it's much better than that – more like 6%!

Two to six percent benefit, when one looks at the suffering caused by chemotherapy, is not very uplifting information.

This and other data from cancer studies confirm just how important prevention is. Doctors need to be willing to look at all the possible preventive approaches – not just those which emanate from the pharmaceutical industry. Unfortunately medicine has not a good record of being open to theories which do not come through the 'conventional' routes, but now there is an ever increasing band of doctors who are willing to look at the so called 'alternative' practices – to help keep their patients healthy and aid recovery.

Most of these therapies are complementary and are in addition to the best of conventional medicine. The sooner the medical profession as a whole realizes that this is what their patients want and also how effective the combined approach can be, the sooner many of our patients will stop hiding from us the fact that they are also turning to other forms of therapy.

In today's world, despite all of the advertising and recommendations of health authorities and cancer societies, the incidence of almost all cancers continues to rise. The current preventive approach is just not succeeding.

In medicine today we demand concrete proof, from studies and trials, that a therapy or approach should be used. In this atmosphere the preventive approach to cancer is walking on very thin ice. While the establishment demands scientific backing from alternative approaches, many of which have a logical and scientific background, many actually have more data behind them than our conventional recommendations.

For example, the advice given by conventional medicine to the general population to reduce the risk of cancers is: stay slim, mild exercise, don't eat too much fat, don't smoke, and don't drink too much alcohol.

The scientific evidence for any or all of these is not very strong. Do we really believe that if people followed this advice we would turn around the cancer epidemic?

When one looks at a typical cancer person (before they developed cancer) – were they obese, heavy drinkers, smokers and sloths? No most of them looked like the rest of the population. In fact the reverse – apart from those suffering cigarette induced cancers, many people who develop cancer are hard working, caring and clean living.

When one looks at the booklets put out by cancer societies and health bodies, they make the recommendations given above, and suggest people eat plenty of fruit and vegetables. That is all! Is it surprising that the cancer epidemic continues to flourish?

The pharmaceutical industry is attempting to find drugs which we should all take to reduce the risk, but as expected the drugs so far tried tend to have the reverse effects. Drugs almost by definition, change the 'natural' biochemistry in the body and its cells, and almost without exception create adverse effects at a distance from the desired action. In respect to cancer drugs, we still do not have one drug which can safely and effectively reduce the risk of developing cancer!

In this field, medicine needs to swallow a little pride and accept some help from the complementary sciences, to study healthy people and accept what is good common sense. There is so much advice we could give people, which have no risks and minimal cost, which could make a huge difference. But unless people are told about them, they will never receive the benefits, and currently no one in conventional medicine is making this information available.

Let us look at some of the advice we could offer people.

1. Reduce stress – It is interesting, but if you talk to anyone who looks after cancer patients, they describe them as "nice people"! Cancer seems to strike the nicest people, those who help others, take on their burdens and don't complain. People who bottle up their emotions and also those of others. Is it possible that by doing this over the years, the immune system is weakened and cancer is permitted to develop?

Encourage people to express their emotions, not bottle them up inside, be happy and encourage people to talk about their thoughts, problems and stresses.

2. Good nutrition – There is no doubt that fruit and vegetables (especially the cruciferous vegetables) contain substances (like indole 3 carbinol) which protect against cancer[2]. The immune system requires full nutrition to function optimally. It is also best if it does not have to waste unnecessary energy trying to neutralise toxins, preservatives, pesticides and herbicides.

We need a plentiful supply of fresh, preferably organic produce which is available to all at a reasonable price.

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3. Supplement our diet – Make sure that the nutrition is perfect by taking supplements.

Everyone realizes that our food today is less nutritious than it has been in the past – because of exhaustion of the soil, intensive farming techniques, early picking, processing, storing, preparing and cooking. On top of that our choice of food to eat in nearly all cases is woeful. In today's world, we will never get our children and teenagers to eat the fruit and vegetables we know they should, and in fact most adults also fall short of an ideal intake. Why can't we in medicine be honest enough to say – why not make sure our bodies receive all the nutrients they require by taking supplements?

If we all drove perfectly, then there would be few car crashes, but we would still wear seat belts and have air bags to supplement our safety. Why not do the same with our food?

When we have good scientific data that people who take adequate doses of folic acid, vitamins C, E, D, Selenium and omega 3 oils have less cancer, then surely we must advise patients to make sure that they get enough. For most people the only way to do this is to take a good supplement containing those nutrients.

People should take a good nutritional supplement containing optimal doses of all the vitamins and minerals the body requires, plus omega 3 fish oils.

4. Avoid toxins – People are told to avoid known carcinogens like cigarettes (which have been shown to cause cancer in every organ that the smoke or its toxins touch – lips, tongue, pharynx, oesophagus, stomach, bronchus, lungs and even the bladder). However there are many other potential carcinogenic toxins, sprays, preservatives, herbicides, pesticides and other compounds in today's world. For example parabens is found in breast cancer tissue[3]; dioxins, phthalates and PCBs are known carcinogens. The increase in oestrogens and oestrogen like substances we are exposed to in our diet, and plastics and plastic wraps may increase the incidence of hormonally affected cancers.

We need more information on possible carcinogens in our world, free from the vested interests of major corporations.

5. Physical causes of cancer – Radiation can affect the DNA in the nucleus of the cells and has been demonstrated from Hiroshima and atom bomb testing to cause cancer. This is why doctors are increasingly concerned at the radiation we are exposing our patients to with X-rays.

But what about radiation from cell phones, cell phone towers, microwaves, computer and TV screens? Especially the cell phones of our children.

Even the mechanical effect of women wearing a bra has been postulated to increase the risk of developing breast cancer (more below).

We should attempt to reduce exposure to unnecessary radiation of all sorts, use isolating earphones for our mobile phones, and women should only wear their bras for part of each day.

Is there really convincing evidence and scientific theory for the above? Let us look at some of these in more detail and see just how easy it could be to make a huge dent in the incidence of cancer in our community.

- **Nutrition in the womb** – Researchers from the Toronto Hospital for Sick Children[4] showed that the babies of women who took multivitamins throughout their pregnancy had fewer cancers. Not just a small reduction either. Look at the numbers of the three main early childhood cancers – 47% less neuroblastoma, 39% less leukemia and 27% fewer brain tumours.

  Why has this information not been splashed across papers around the world? How can we watch babies dying of these diseases and suffering from their treatment, when such a simple preventive alternative is available?

- **Multivitamins and adult cancers** – In the USA nurses study, those nurses taking multivitamins for more than 15 years had 75% less colon cancer[5]. Taking multivitamins also negated the increased risk of developing breast cancer in women who drank alcohol[6].

  In many trials, vitamin E and vitamin D[7,8] have been demonstrated to reduce the incidence of cancer. Both of these should be in a good multivitamin tablet. In today's world where people are being told to keep out of the sun for fear of skin cancer, there is a real worry that low vitamin D levels may increase the risk of other cancers.

  Thus a good multivitamin containing D is essential.

- **Selenium** – A quote from the American Cancer Society: "Studies that observe large groups of people show that in areas of the world where selenium levels in the soil are high, death rates from cancer are significantly lower when compared with death rates in areas where the selenium levels are low.[9]"

  Farmers in areas low in selenium (New Zealand and parts of Australia) give their animals selenium supplements to reduce the risk of them developing heart disease, muscle disease and cancer.

  Because low selenium is not a worldwide problem, there has been little study on its value to prevent cancer. Perhaps the best study is by LC Clark published in JAMA in 1996[10], which showed a huge reduction in most cancers in 1300 men who took either 200ug of selenium or placebo selenium over 6 years. Those in the selenium arm had – 37% fewer cancers and 50% fewer cancer deaths. Individual cancers were reduced – prostate (63%), colo-rectal (58%) and lung (48%). This study only included men so there is no data for women's cancers.

"Encourage people to express their emotions, not bottle them up inside, be happy and encourage people to talk about their thoughts, problems and stresses."

Surely, it is logical for people living in low selenium areas to supplement their diet to achieve the level found in other parts of the world, where the incidence of cancer is much lower.

Thus a good supplement containing selenium in these low selenium countries seems essential.

- **Melatonin for shift workers** - The risk of prostate and breast cancer is higher in shift workers who work after dark and sleep in daylight hours. Melatonin is produced by the pineal gland during sleep in the dark, but is not produced when sleeping in the light. It has been shown to have a powerful anticancer effect. In one study, cancer patients given melatonin reduced their risk of death at 1 year by 34%[11].

  Melatonin is extremely safe and has beneficial effects on sleep patterns. All shift workers or those who sleep in the light, should be taking it.

- **Wearing a bra for prolonged periods** may increase the risk of developing breast cancer. Toxins which enter the blood stream are initially stored in fat tissues, before being removed slowly by the lymphatic system and taken to the liver for detoxification. The breast is rich in fat, and many toxins are temporarily stored there A bra surrounds the breast with a force which exceeds the pressure within the lymphatics and blocks flow in the tiny lymph vessels. So toxins can enter the breast because the arterial pressure is high, but become trapped because the lymphatics are compressed until the bra is removed.

  Societies where bras are not worn have a very low incidence of breast cancer. A Harvard study[12], suggested that women who did not wear bras had 60% less breast cancer.

  In their book, 'Dressed to Kill', Singer & Grismaijer[13] reviewed women with and without breast cancer.

The incidence of cancer was much higher in those who wore a bra for longer periods of the day:

- *24 hours: 3 out of 4 women developed cancer*
- *More than 12 hours: 1 out of 7 developed cancer*
- *Less than 12 hours: 1 out of 152*
- *Rarely or never wore bras: 1 out of 168*

While there are criticisms which can be made of this study, it does seem wise for women to wear a bra for less than 12 hours per day (take it off when you get home), and then massage the breast to help drain out the toxins through the lymphatics.

CONCLUSIONS

Cancer is epidemic in today's world and the incidence continues to rise. None of the current approaches appear to be making much difference, and we do not have one drug which has been shown to safely reduce the risk of even one form of cancer.

There are a number of additional approaches which people could take, at very little inconvenience, in complete safety and at minimal cost, which are likely to add substantially to the protective lifestyle that health authorities are currently recommending:

1. Eat as well as possible – plenty of fruit and vegetables, preferably organic.
2. Regular physical activity.
3. No smoking, and not too much alcohol.
4. Avoid toxins as much as possible.
5. Take a good multivitamin & multimineral (containing vitamins C,D,E, folic acid, selenium) regularly.
6. Reduce as much as possible, exposure to radiation.
7. Women – remove tight bras at the end of the day, those with a family history of breast cancer, consider wearing camisoles.
8. Shift workers take melatonin at night.

There is good scientific evidence and good logic behind all of these suggestions. They are much more likely to benefit humanity than the attempts by pharmaceutical manufacturers to change human biochemistry developed over millions of years of evolution.

The costs – almost nothing.

The benefits – could be enormous.

Colleagues, let us take off the blinkers and offer our patients all the possibilities of prevention, not just the limited information provided to us in our restricted conventional medical education.

References are available upon request

COERCIVE AND MANDATORY IMMUNISATION

Judy Wilyman, B.Sc, M.Sc, DipEd

ABSTRACT

In 2008, the State Governments in Australia implemented mandatory immunization policies for health professionals working in clinical situations. Australia also has a Childhood Immunisation Schedule which recommends thirteen vaccines be administered to infants before two years of age. This article uses pertussis epidemiology as a case study to examine the evidence supporting Australia's immunization policies. It concludes that there is a shortage of reliable independent evidence supporting these policies. The results of this research show that pertussis vaccine is not controlling the incidence of pertussis in the community nor the mortality and morbidity of this disease. It concludes that the implementation of mandatory immunization policies is unethical if it cannot be shown there is a serious risk to the community if vaccines are not used.

KEY WORDS

pertussis, epidemiology, immunization, mandatory, policies, public health

ACKNOWLEDGEMENT

I would like to acknowledge Senior Lecturer Glenn Mitchell, Associate Professor Brian Martin and Associate Professor Peter Dingle for their direction in writing this article. I would also like to acknowledge the support given by a growing number of parents and health professionals concerned about mandatory immunisation.

INTRODUCTION

Immunisation is a medical intervention for healthy individuals, which is based upon theories that have evolved over time. It was accepted as a strategy against infectious diseases two hundred years ago at a time when our knowledge of immunology and genetics was very different. The social context of these times was also very different. If public health policies are based upon evidence and theories that are changing over time and without full knowledge of the mechanisms involved, there is the potential for policies to be harmful to the health of the community. To be certain of the health benefits of mandatory and coercive immunisation policies, it is important to examine the history of vaccination and debates over evidence and theory. This paper uses a case study of pertussis to analyse the supportive evidence for immunisation policies.

Throughout the twentieth century the pertussis vaccine was continually questioned with respect to both efficacy and safety[1,2]. The Australian Government promotes immunisation programs as the main reason why infectious diseases such as pertussis are no longer causes of death and disability in Australia. The Government also claims that the pertussis vaccine is the most effective means of controlling the incidence of pertussis in the Australian population.

This analysis will examine the evidence that is used to support these statements in order to determine whether mandatory immunisation policies are appropriate. Finally, it raises the question of why necessary safety data has not been collected.

PERTUSSIS DISEASE

Pertussis or whooping cough is a highly contagious disease that is transferred by droplets in the air[3]. By 1954 the risk of this disease in Australia was highest in children under one year of age with the most serious cases occurring in children under six months of age[4]. It was not considered a serious disease in adults and adolescents because most individuals were exposed to this disease naturally in childhood and this provided long-term immunity[5]. The overall mortality rate of pertussis is 0.03%[6b] and deaths usually result from pneumonia, pulmonary complications, asphyxia or encephalopathy[3].

HISTORY OF PERTUSSIS IN AUSTRALIA 1900 – 2007

Pertussis along with other infectious diseases was one of the main causes of infant deaths in Australia in the early nineteen hundreds. However, changes that occurred over the first half of the century significantly reduced the influence of these diseases on mortality and morbidity. In the nineteen-twenties sanitary reform was initiated and there was a greater emphasis being placed on social medicine[7].

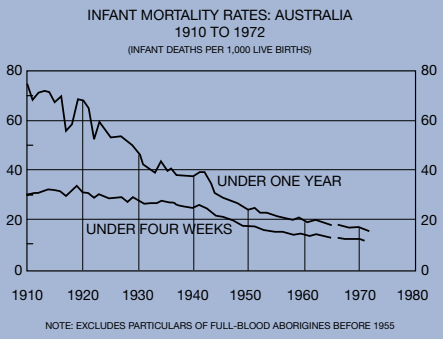
Public health officials became aware that malnutrition increased the susceptibility of children to disease by weakening the immune system[7]. The medical profession increased its support for breastfeeding in 1929 and this measure along with new relief policies regarding the minimum nutritional requirements in food provisions for the unemployed, led to a marked reduction in mortality and morbidity in infants[8]. This was further reduced by the discovery of antibiotics in the 1940's[8].

Lancaster noted that during the period from 1946-1954, pertussis was an uncommon cause of death for children and there was a significant decline in mortality as the age of infection increased[9]. He noted that pertussis is very sensitive to social conditions and hygiene and its decline began before routine immunisation programs were implemented[10].



In 1950 the National Health and Medical Research Council (NHMRC) removed pertussis, influenza and measles from the list of nationally notifiable diseases in Australia because of the reduction in mortality and morbidity that had occurred by this time[11]. Although vaccines for pertussis were developed in Australia in 1920, they were not used routinely or extensively until 1954 because of the variability in their efficacy and safety[12,1,13].

The decline in infant mortality from infectious diseases throughout the twentieth century in Australia is illustrated in Figure 1 below:



Reference - Official Commonwealth Yearbook of Australia, 1973, No. 59, p.183 (2)

It is clear from this graph that the most significant decline in infant mortality occurred prior to 1950 and as the graph shows a steady continual decline that began early in the twentieth century it cannot be a result of immunisation programs implemented in the late 1950's. However, there may be hidden effects due to vaccination programs after the 1950's. In the case of pertussis disease this could be determined if the vaccination and socioeconomic status of cases of pertussis caused by the Bordetella pertussis bacteria had been collected.

The Decline in Mortality in Australia

Prominent Public Health officials of the twentieth century, such as Lancaster, Cumpston and Burnet state that social medicine including improvements in living standards, fitness, nutrition, breast-feeding, family size and sanitary reform were the most significant factors in reducing mortality due to pertussis in Australia[9,14,15].

The Decline in Morbidity in Australia

By 1953, the morbidity due to complications of pertussis disease was also low. Public Health Authorities have indicated that morbidity and mortality due to pertussis fluctuate together[16]. Scheil et al, claim that despite the high incidence rates of pertussis in South Australia over the nineties there has been no increase in the mortality or hospitalisation (morbidity) for pertussis in South Australia[17]. This suggests morbidity and mortality rates fluctuate together. It also suggests there is no correlation between high incidence rates of pertussis and mortality and morbidity of this disease.

THE CASE FOR PERTUSSIS VACCINATION

In 1954 when the NHMRC recommended pertussis vaccine be placed on the routine immunisation schedule for infants, the mortality rate for pertussis was stated to be 0.091/1000 live births[10]. Mortality had declined to 15 deaths per year and the majority of these deaths were infants under one year of age[11]. The NHMRC decided pertussis was a vaccine preventable disease in 1954 because a more effective vaccine had become available and they recommended it be placed on the routine immunisation schedule for Australian children[13].

It was theorised that protection from disease could be provided to infants by introducing a modified infection into the individual and that only trivial symptoms would be experienced[14]. It was believed that this would be definite enough to produce lasting immunity[14]. Pertussis vaccine was promoted with the aim of further reducing mortality and morbidity due to pertussis.

It was also believed at this time that pertussis, like measles, could be eradicated[18]. This belief was based on the theory of herd immunity. Herd immunity is a statistical theory that suggests that if a high enough percentage of individuals are vaccinated then the susceptible population is so reduced that the organism will stop circulating[18]. It was believed this also provided a degree of protection to the unvaccinated population as the organism is prevented from circulating due to a reduction in the susceptible population. This belief resulted in a campaign in Australia in the 1980's to increase the vaccination rates for pertussis to 95%. Infant immunisation was strongly emphasised at this time and it intensified in the 1990's with the Immunise Australia Program in 1993[6a].

The Government's immunisation policy states that immunisation is the most effective means of controlling the incidence of pertussis in our community[13]. The emphasis on increasing vaccination rates in the population assumes that the vaccine will reduce the incidence of this disease in the community and that this will result in a reduction in the mortality and morbidity of this disease.

The highest risk group for pertussis disease is infants under 6 months of age[6b]. In order to reduce mortality and morbidity of this disease it was necessary to vaccinate babies at 2 months of age to ensure they were protected by 6 months of age. Though vaccination carries a risk of injury or death for some individuals the Health Department states that the risk of the disease far outweighs the risk of vaccination[6a]. The pertussis vaccine has been promoted by the Government as being for the good of the whole community due to herd immunity[6a]. Vaccination with pertussis in 2007 is now emphasised for all age groups as the disease is now considered a problem for adults and adolescents and they are also considered a reservoir for transmission of the disease[19].

THE CASE AGAINST PERTUSSIS VACCINATION

i) Controlling the Incidence of Pertussis

The pertussis vaccine has now been used for fifty years and in this time we would expect

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to see significant reduction in the incidence of this disease if the vaccine is effective. This is not the case. Epidemics of pertussis are being described in the United Kingdom, Australia and America where vaccination rates for infants have been above 86% since 1995[20]. The incidence of pertussis in highly immunized countries is similar to the incidence of pertussis in European countries, such as Sweden, Germany and Italy, where immunisation with DTP vaccine is discretionary and vaccination rates are around forty percent[21].

To assess the benefits of pertussis vaccination programs it is necessary to know the changes in mortality and morbidity rates that have occurred with increased vaccination rates and not the changes in incidence of pertussis that is given in most policy documents. This is because the disease is caused by several bacteria species of which the vaccine only targets one species and only in prolonged cases[22,1]. Also because the incidence of the disease does not indicate the severity of the disease, as it is not a severe disease in all age groups[14].

Senanayake claims that pertussis is circulating in a similar fashion nowadays to the pre-vaccine era and it is the only disease on the universal childhood vaccination schedule that has seen an increase in reported cases in the USA rather than a decrease[23].

According to the NHMRC, many cases of pertussis are now being recognized in adults and adolescents in highly immunized communities[19]. This data on notifications is used to support the claim that booster doses are now required in individuals over the age of ten years in order to reduce morbidity in this age group[19]. It is also suggested that this will reduce the transmission of pertussis to those most at risk; infants less than six months of age[19]. Morbidity statistics for adolescents are not provided to support this claim but prior to vaccination this disease was not considered serious in adults and adolescents[5,23]. In addition, there were 16 deaths attributed to pertussis from 1993 – 2002 and 15 of these deaths occurred in infants less than 12 months of age[23]. This was at a time when vaccination rates were higher than any previous decade, approximately ninety percent of all infants[19].

The argument that adults/adolescents are now a reservoir for the disease ignores the fact that they have always been a reservoir for this disease. The difference is that artificial immunity wanes more quickly than natural infection and an individual who is first exposed to natural infection as an adolescent or adult is more at risk from this disease[14].

The lack of correlation between overall incidence statistics and the mortality and morbidity of pertussis disease was noted by prominent Public Health officials in the early nineteen hundreds[14,15]. Clinical severity of pertussis disease can only be determined by comparing the age-incidence in the population with the age-incidence of mortality and morbidity, because this disease is of greatest risk to children under one but most severe in children less than six months of age[9,6,23].

Reducing the incidence of pertussis in the Australian community was the premise used by the Government for increasing vaccination rates in 1993[13]. It is clear after fifteen years of high vaccination rates that this has not occurred.

ii) Long-Term Immunity versus Short-Term Immunity

Behrman et al, claim patients who have been infected with pertussis naturally do not require pertussis vaccinations because the disease produces lifelong immunity[3]. This has been disputed by Wendelboe et al, who conclude immunity is not life-long but it is longer than the duration of immunity after pertussis vaccination[5]. The Australian College of Paediatrics (ACP) stated in 1991 that the duration of immunity induced by the Australian whole-cell pertussis vaccines wanes after two to three years[24].

Wendelboe et al noted that adults in the pre-vaccine era rarely presented with typical forms of pertussis[5]. This would suggest that being infected with pertussis in childhood did confer long-term immunity as pertussis was not diagnosed in adults very often and it was not considered a serious disease in adults prior to vaccination[5].

It is thought that subsequent mild, unrecognised pertussis infection maintains a high level of immunity in adolescents and adults who have been infected in childhood[5,25]. Although Wendelboe et al question the length of duration of naturally acquired pertussis immunity they still conclude it is of longer duration than immunity after vaccination, possibly as long as twenty years[5].

iii) The Efficacy of the Pertussis Vaccine

Estimates of the efficacy of pertussis vaccine range from 40 – 90% and this is a result of significant differences in the design of different studies[24]. The claim is often made that pertussis is increasing in frequency in areas where immunisation has declined[3]. However, this is an unsupported statement and contradicts the fact that outbreaks are occurring in fully immunized children and in countries where immunisation rates have been high for the last two decades[5,20].

In a study by the Communicable Diseases Intelligence in 1985, it was found that 73 percent of the 15 patients of vaccine age (19 months) who got infected with whooping cough had two or more doses of the vaccine[6b]. This evidence does not support a case for vaccinating children under six months of age, as they do not receive the third dose until six months. Statements from the ACP also indicate there is no benefit for infants less than six months of age. They say, with regard to the schedule of doses, there is clear evidence that "two doses are inadequate and suggestive evidence that four or five doses are more effective than three[24]."

By 1991 the ACP admitted that the theory suggesting pertussis disease could be eradicated by achieving a vaccine uptake of 95% was probably wrong[24]. In other words, the epidemiological evidence for pertussis disease does not support the theory of herd immunity. This is because the vaccine is thought to protect better against 'disease' than 'infection' when disease is classified as an infection with coughing longer than 21 days[1,24]. This allows the Bordetella pertussis bacteria to continue to circulate in the population. In addition, there are other bacteria causing pertussis disease, which the vaccine does not protect against[22].

It is also known that the vaccine does not stimulate antibody production in one hundred percent of individuals and the pertussis bacteria can also revert to virulence under certain environmental conditions or as a result of inadequate treatment[1]. Smith indicates that vaccine trials for acellular pertussis vaccine show no correlation between antibody response and vaccine efficacy[1].

This illustrates there are a number of reasons why immunized communities may have outbreaks of pertussis disease. It also strongly refutes the theory of herd immunity upon which pertussis immunization policies are promoted.

iv) Hidden Variables in Health Statistics

Three of the hidden variables in pertussis incidence statistics include vaccination status, socioeconomic status and the pathogen responsible for causing the disease. If these variables are not recorded then it is impossible to determine what effect the vaccine is having in reducing mortality and morbidity due to this disease. Despite the fact that pertussis has long been associated with poor living standards by Public Health Officials, the Government made no effort to collect socioeconomic status of cases of pertussis until 1997[26].

Nor has the Government collected and published the vaccination status of hospitalised cases of pertussis. This information can be collected easily and be used to provide sound science on the debate yet this data has not been collected. This has resulted in an absence of information essential to our understanding of the effects of current immunisation programs on the health of infants.

v) Ingredients of the Vaccines

Parents are informed that the chemicals and viruses/bacteria in vaccines will not overload a baby's immature immune system nor will it harm their developing neurological systems[6,27]. Yet parents are not informed of the ingredients of vaccines which include preservatives, antibiotics and adjuvants. These chemicals are known allergens and neurotoxins such as mercury compounds, formaldehyde, foreign proteins and aluminium adjuvants[28].

In addition, the combination of vaccines recommended on the childhood vaccination schedule (currently 13) has not been monitored for all outcomes in long-term health studies in animals or humans[6b]. This means that synergistic and cumulative effects of the ingredients have not been evaluated. Value judgments regarding the safety of the vaccine schedule for infants are being made in absence of this evidence.

Veterinary studies are showing there is overwhelming evidence supporting the link of autoimmune diseases with vaccines[29]. Our knowledge of genetics has also evolved and it is now stated that genetic predisposition and environmental factors are accepted as risk factors for immune and neurological diseases[30] Epidemiological studies with set parameters will not detect conditions that are produced in children who have a genetic predisposition to certain conditions[31]. Yet it is epidemiological studies that are used to promote vaccination to health professionals and the government. Scientists also admit that one of the hindrances to developing improved vaccines is the limited understanding of the mechanisms involved in either natural infection based immunity or that conferred by vaccination[1].

Scientists have not provided conclusive evidence that harm is not being caused to the immune and neurological systems by vaccinating against an increasing number of diseases. Supporting this possibility is the escalating chronic illness that is being observed in children and the knowledge that, like all drugs, there is an increased risk with each vaccine that is used. Since 1966 there has been evidence indicating that there are hazards and complications arising from the use of vaccines and these increase with the increased number of vaccinations that an individual receives[32].

Statistics in Australia indicate there has been a five fold increase in life-threatening food allergies in children in the decade from 1994-2005[33]. This coincides with the government's push to increase vaccination rates in Australia to 95% with the implementation of the Immunize Australia Program in 1993[6a].

CONCLUSION

This evidence indicates that the Federal Government's Pertussis Immunisation Policy is not controlling the incidence of pertussis in the Australian community. Furthermore, pertussis vaccine was not the most significant factor in reducing the mortality and morbidity associated with this disease and in fact may not have played any positive role. Immunological knowledge regarding human defense mechanisms of disease is incomplete. Some types of scientific evidence are being given undue emphasis in evaluating the risks and benefits of the pertussis vaccine: greater emphasis is being placed on epidemiological studies with selective parameters than the biological, clinical and ecological evidence that is being obtained.

The implications of this research are significant not only to the Government's pertussis immunization policy but to all vaccines being made available to the public. The pertussis vaccine should be reassessed with respect to the risks and benefits of the vaccine to the community. Factors such as improved social conditions in Australia, increased the age of pertussis infection in children and reduced the risks associated with natural infection. There are also benefits to the community from longer lasting immunity due to natural infection in childhood.

Vaccines cause adverse reactions, which vary in severity amongst individuals due to genetic factors. Genetic and environmental factors are known to influence the incidence of disease in communities. These factors must be considered in immunization policies.

In 2008 the Australian government implemented mandatory immunization policies which coerce Health Professionals into vaccinating against ten diseases in order to continue their chosen career. This policy is in question if the Government cannot provide conclusive scientific evidence to show that the health of the community is at risk without these vaccinations. Verifiable objective scientific evidence examining all the variables must be used to demonstrate the value of the vaccines to the community. This would include the vaccination and socioeconomic status of hospitalized cases of the disease.

Consideration must also be given to the possibility that using multiple vaccines in infants and adults could be harmful to the health of the population. It is important to be certain that by using multiple vaccines we are not removing one risk and replacing it with another.

The underlying ethical principle of health practitioners is to first do no harm. If it is biologically plausible that using multiple vaccines in infants and adults could cause significant harm to a proportion of the population as a result of genetic predisposition then the onus is on policy makers to provide proper public debate and demonstration of a serious risk to the community before mandatory and coercive immunization policies are implemented in healthy individuals.

References are available upon request

Intravenous EDTA Chelation Therapy - big benefits in small places

Gary Mitchell, MBChB, DipPaed, DipObsGyn, DipChHyp, MPH

This case study reports some aspects of the experience of intravenous EDTA chelation therapy on Norfolk Island.

Norfolk Island is a geographically isolated territory of Australia, located in the South Pacific Ocean, 1600km northeast of Sydney. There is one health facility providing outpatient and inpatient services to the population of around 1800 locals and the large tourist population.

Norfolk has a medical system independent of Medicare. In other words, Norfolk Island funds its own health care and has done so since 1974. In a world of upwardly spiralling health costs this is quite an achievement, especially considering the small size of Norfolk and the services provided, including a broad range of surgery, obstetrics, general practice, district nursing, physio, xray and laboratory services.

In May 2005 an 82-year-old gentleman presented with an arterial ulcer on the right big toe. This had been present for over 12 months, was deep and over 10mm in diameter. It was very painful, requiring regular endone. He could only shuffle with a limp, and often couldn't sleep because of the pain. The foot was cool and dusky at times. Greg was otherwise well, did not have diabetes or symptomatic heart or cerebral disease.

He has longstanding peripheral vascular disease of the lower limbs, and has had a number of arterial graft bypass operations to his right leg. These grafts repeatedly blocked. Medical treatment consisted of warfarin and 2-3 outpatient visits per week for dressings, as well as admissions for respite and rest at times. He had repeatedly been told that he would need amputation, which he resisted. At his most recent visit to his Sydney vascular surgeon he had a last-ditch clearing revascularisation procedure which gave him some relief, but within weeks the graft had occluded again. Greg presented in severe pain and desperation to the author.

The author had just returned from an ACNEM conference where chelation was discussed, and it was decided that rather than referring Greg for amputation, we would try chelation therapy. We initially administered chelation twice weekly for the first 10 treatments, by which stage Greg reported his ulcer to be slightly less painful. It appeared to be slightly shallower as well. Over the next 3 months the ulcer gradually started to heal in. It took several more months before the ulcer closed over completely. Since that time until now his foot has been pain and ulcer-free apart from some brief periods.

Now in 2008, Greg continues to live alone, and spends most days out in his extensive garden. He still drives his tractor, digs his garden and repairs fences and is often seen driving around the island delivering fresh produce to various friends and acquaintances. His family is amazed and delighted.

In small communities word of mouth is the most powerful public health education medium. Soon everyone had heard of Greg's success with chelation. I ran a public meeting with a slideshow borrowed and adapted from Dr Gerry Lewis, an Auckland cardiologist, and put brief articles in the local newpaper and spoke on the radio about chelation therapy. Patients began coming in asking about this new therapy. Greg gave permission for me to suggest patients ring him to discuss his experience of chelation.

On Norfolk now we have had 34 patients complete a course of chelation (on average 30 sessions) as per ACNEM's training protocol.

At its peak in 2006, we had 15 patients coming for weekly or maintenance treatment and there was a waiting list. This number began to diminish when the healthcare scheme on Norfolk stopped funding chelation for its pensioners. We currently have 4 patients having their primary course, and many others have regular maintenance 3 or 4 times a year.

Reasons for patients having chelation on Norfolk include angina, arterial disease in the legs, macular degeneration, stroke/TIA risk, wellbeing and prevention. In total, 821 chelation treatments have been given on Norfolk between April 2005 and May 2008.

One person who was given chelation on Norfolk has subsequently died of a heart attack, and one died of a stroke/heart failure.

A survey was carried out of the first dozen patients who went through chelation, and the results were overwhelmingly positive. Numbers are too small to make any useful statistical analysis.

The author's impression of the outcome of chelation for his patients is that nearly all experience benefit in both wellbeing and symptom reduction, often dramatically. For a minority there is no visible or demonstrable benefit. Some have had their angina lessen or disappear, others have stopped being regular presenters at outpatients, others have clearer thinking, others can walk further than they have in years, others have improved eyesight (macular degeneration can improve with chelation). Nearly all chelation patients, even the most initially skeptical, become evangelists for the therapy.

DISCUSSION

All doctors who administer chelation therapy seem to have these 'miracle' patients such as Greg. It is one of the most gratifying things in curative medicine to beat the odds, and chelation gives the practitioner (and the patient) that satisfaction fairly often!

Norfolk Island Hospital is perhaps the only public hospital in Australasia where i.v. chelation is offered. In a user-pays system it is fairly easy to calculate cost-benefit equations for curative situations. In Greg's case, prior to commencing chelation, he was costing the Norfolk Island government around $10,000 per year including hospital outpatient visits, admissions, dressings, medications and specialist visits to the mainland. Amputation cost would have run into tens of thousands of dollars.

Following amputation, Greg would probably not have managed to live alone, and most likely would have ended up in the long stay ward at the hospital at a cost of $800 weekly for several years.

Cost of chelation on Norfolk is $104 per session (very good value!). Greg is now on maintenance and has had 60 chelation sessions, i.e. $6240.

Calculating benefit for preventive situations with small numbers of participants is more difficult. No doubt there are patients who have had chelation who will not live longer than they otherwise would have, either because they die of some other cause not prevented by chelation or because chelation did not prevent their death. However, if one course of chelation ($3000) prevented just one bypass operation ($35 000) and preliminary admission(s) in Norfolk Hospital plus airfares to mainland, and follow-up costs, easily totalling $50,000 or more, plus perhaps a medivac ($30,000), then that one saving would have paid for the costs of chelation to the other 33 recipients.

Side effects of chelation noticed on Norfolk include occasional discomfort in the arm during infusion. Once or twice people reported feeling tired or a little 'woozy' afterwards, which may last a day.

There still remain many patients on Norfolk who would potentially greatly benefit from chelation but who haven't been treated either because of cost or time constraints, or because they prefer a more mainstream approach. Many people remain skeptical.

The hospital nursing staff on Norfolk have done all of the practical work in administering chelation here. Drawing up solutions and monitoring the administration is time consuming, and the cooperation of skilled nurses is essential.

The main barriers to intravenous chelation on Norfolk include cost, time constraints (1.5 hours per week) and the unfortunate fact that i.v. chelation is still considered fringe medicine!

KEY POINTS

- Chelation is an effective treatment for conditions related to arterial vascular disease
- Norfolk Island is a distinctive health system with a user-pays arrangement
- Barriers to using chelation in a public facility include non-acceptance by mainstream medicine and resistance to change in health settings
- Small rural communities may have more opportunity for using chelation in a public setting because of more flexible treatment options, the possibility of greater influence on health services by the doctor, the phenomenon of word of mouth spreading news of positive outcomes, and subsequent demand for the service from the community
- Cost benefits considerations are very compelling in favour of chelation
- Patient satisfaction with chelation is high, as is clinician satisfaction!
- Norfolk Island's experience with chelation has been very positive

Injectable Magnesium Mg^{2+}

Karel Hromek, BMed, BSc, FACNEM, FACRRM

INTRAVENOUS MAGNESIUM MUST ONLY BE ADMINISTERED AS A SLOW DRIP. RAPID IV ADMINISTRATION OF MAGNESIUM IS DANGEROUS AND MAY RESULT IN CARDIAC ARREST.

Magnesium ions are present in all cells. Total body magnesium is 99% intracellular. Magnesium is about 10^{-2} M inside the cell and less concentrated outside the cell, about 10^{-3} M. It is the 4th most abundant cation in the body, mostly deposited in bone, then skeletal muscle, liver, heart and pancreas.

Magnesium is in many foods, particularly green leafy vegetables.

Absorption of dietary magnesium occurs throughout the small intestine and is highly dependant on the solubility of the magnesium salt, the most soluble and therefore best absorbed being magnesium citrate (Walker et al 2003). However magnesium absorption is not straightforward, requiring vitamins D and B6, selenium as well as parathyroid hormone, and is inhibited by alcohol, fibre, calcium or phosphorus intake, phytate and excess saturated fats (Saris et al 2000, Johnson 2001).

There is a significant prevalence of marginal **magnesium deficiency** in Western society (Dreosti 1986, Duriach 1989). The main cause of magnesium deficiency is a combination of poor dietary intake and malabsorption (Braun 2007), however, there are many causes of magnesium deficiency. Ageing is associated with progressive loss of total body magnesium and restoration of intracellular magnesium is associated with improved cellular homeostasis (Peng 1977). The ratio of cellular calcium to magnesium is important in governing metabolic activity.

Magnesium is the enzymic activator for ~300 enzymes systems (Bygrave 1976). The normal intracellular functioning of enzymes depends upon the proper balance of magnesium to calcium (Bianchi 1968). Magnesium and calcium act in antagonism with each other in respect to enzyme activity (Bygrave 1976).

MAIN ACTIONS OF MAGNESIUM IN THE BODY

- About 300 enzyme systems dependant on magnesium
- Muscular contraction
- Nerve conduction
- Vascular tone
- Immune activity
- Protein synthesis
- DNA synthesis
- Glycolysis and Krebs cycle

Physiologically, magnesium is an essential cation in numerous enzymic functions and is necessary for several steps in glycolysis, the citric acid cycle, protein and nucleic acid synthesis. Magnesium is involved in energy metabolism involving phosphate transfer (ATP/ADP), mobilisation of calcium from bone, nerve impulse and muscle contraction.

DEFICIENCY AND CLINICAL PRESENTATIONS

The clinical syndrome of **hypomagnesaemia** [serum Mg < 0.5 mmol/L] has neuromuscular and psychiatric presentations. Symptoms of neuromuscular excitability that may arise include tremors, hyperreflexia, muscular irritability and weakness, tetany and convulsions. Psychiatric changes include depression, apathy, personality change and hallucinations (Hashizume 1990, Embry 1987).

Alcoholics are especially at risk of magnesium deficiency because of increased urinary excretion and decreased intake (Saris 2000). Deficiency may occur in patients taking potassium-depleting diuretics e.g. **loop and thiazide diuretics** which also produce magnesium loss. Potassium sparing diuretics preserve magnesium as well (Ryan 1987).

Cardiovascular disease is associated with lower levels of serum magnesium and often present in patients with **myocardial infarction, angina, hypertension and congestive heart failure** (Whang 1987, Jee 2002, Shechter 2003, Gottlieb 1989). **Mitral valve prolapse** is associated with magnesium deficiency and attenuated by magnesium supplementation (Lichodziejewska 1997). Intravenous magnesium is an important adjuvant in the management of certain arrhythmias, particularly ventricular arrhythmias after myocardial infarction and also from digitalis toxicity or long QT-related **arrhythmias** (Roden 1989).

There are several double blind placebo controlled studies of intravenous magnesium showing significant efficacy in reduction of **arrhythmias** and mortality following **acute myocardial infarction** (Rasmussen 1987, Shechter 1990) and many reports of benefit (Teo 1991, Yusuf 1993).

Patients with **Chronic Fatigue Syndrome** have been shown to benefit from intramuscular injections of magnesium (Cox 1991) as have patients suffering **alcohol withdrawal** who have been assisted by intramuscular injections of magnesium sulphate to control symptoms of delirium and tremor (Embry 1987).

Impaired magnesium metabolism appears to play a role in the pathogenesis of **migraine** (Thomas 2000) with half of the sufferers having lowered levels of ionised magnesium (Mauskop 1998). Therapeutically 1 gram of intravenous magnesium sulphate is an efficient, safe, and well-tolerated drug in the treatment of migraine attack (Demirkaya 2001).

McNamara (1989), demonstrated that intravenous magnesium sulphate used for the treatment of severe **asthma** in hospitalised asthma patients reduced the need for intubation in respiratory failure. There are numerous studies supporting the use of intravenous magnesium in the management of **severe asthma** (Shrader 2004, Skobeloff 1989, Ciarallo 1996, Bloch 1997, Okayama 1987).

Magnesium acts by **relaxing smooth muscle**, hence the relaxing effects on vascular tone in migraine patients and bronchodilatation in asthmatic patients (D'Angelo 1992, Gourgoulianis 2001). Extracellular magnesium relaxes arterial smooth muscle by decreasing intracellular Ca^{2+} without changing intracellular Mg^{2+} (D'Angelo 1992). Magnesium is effectively nature's original calcium-channel blocker.

The use of intravenous magnesium sulphate in the management of women with severe **pre-eclampsia** has been shown to significantly reduce the development of eclampsia (Coetzee 1998). Evidence in the literature indicates that intravenous magnesium sulphate is the ideal **anticonvulsant in preeclampsia-eclampsia** (Sibai 1990).

Oral magnesium therapy has been shown to be of use in kidney stone prevention (Ettinger 1997), diabetic control (Rodriguez-Moran 2003), pre-menstrual syndrome (Walker 1998), dysmenorrhoea (Wilson 2001) and leg cramps (Roffe 2002). Oral magnesium is used to treat many other conditions: Fibromyalgia, tension headaches, restless legs syndrome, muscle spasm, pain, stress, hyperexcitability, anxiety, IBS and urinary incontinence (Braun 2007).

Anecdotally the following conditions have been reported to respond to magnesium therapy (Watts 2003, Helman 1991, Pharma Lab 2004):

Muscle cramps
Cardiovascular conditions
Arthritis-stones-bursitis
Atherosclerosis
Arrhythmia
Congestive heart failure
Osteoporosis
Premenstrual syndrome
Diabetes
Lipid disorders
Hospitalised patients
Chronic diarrhoea and other malabsorption states
Urinary frequency-constipation
Toxic shock syndrome
Insomnia
Arteriosclerosis
Myocardial infarction
Eclampsia/Pre-eclampsia
Chronic fatigue syndrome
Hormonal imbalance
Immune regulation
Blood sugar disorders
Elderly
Inflammatory bowel disease
Anticonvulsant effects

CLINICAL

The deficiency state of low serum magnesium is not uncommon in the Western world (Dreosti 1986, Duriach 1989), whereas the opposite state of excess serum magnesium only occurs with inappropriate or excessive parenteral magnesium therapy, especially in patients with renal failure.

Hypomagnesaemia	Hypermagnesaemia
Hyperreflexia	Loss of deep tendon reflexes
Increased muscle tone	Flushing
Muscle weakness/dysfunction	Nausea/vomiting
Neuromuscular dysfunction	Hypotension
Tachycardia	Bradycardia
Cardiac arrhythmias	Respiratory depression
	Cardiac arrhythmias/arrest

N.B. Hypermagnesaemia is a medical emergency potentially requiring hospitalisation. 5-10 ml 10% calcium gluconate can reverse the effects of magnesium toxicity. Hypermagnesaemia may occur when large doses of magnesium are inappropriately given, e.g. rapid intravenous infusion. Patients with renal failure are particularly vulnerable.

Investigation	Comments
Serum Magnesium	Patients with a low serum Mg usually have true magnesium deficiency[a] A normal serum Mg does not rule out deficiency – up to 20% depletion without change in serum Mg[b] Check potassium and calcium as well
Red cell Magnesium	Possibly better than serum Mg as it reflects intracellular magnesium
Magnesium loading test	May be the most accurate, not practical Based on urine excretion after IV loading dose
ECG	Changes similar to hypokalaemia Widened PR and QRS interval and peaked T wave

a MacLennan WH. Clinical assessment of nutritional status in the elderly. Blackwell Sci, Oxford 1985 16;22-45

b Tienz N (ed.) Clinical guide to laboratory tests. WB Saunders, Philadelphia 1990

CONTRA-INDICATIONS AND PRECAUTIONS TO IV MAGNESIUM

Contra-Indicated	Comments
Heart block	Magnesium can exacerbate the condition
Renal failure	Increased risk hypermagnesaemia
Liver failure	Increased risk hypermagnesaemia
Pregnancy	Should only be used when benefits outweigh the risk e.g. seizures associated with pre-eclampsia and eclampsia
Pregnancy pre-birth	2 hours prior delivery, neonate may be born with hypermagnesaemia and depressed breathing
Lactation	Should not be used as Mg enters breast milk at concentration twice that of maternal serum
Myasthenia Gravis	Magnesium may precipitate acute crisis
Sensitivity	To IV magnesium has been reported

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STUDIES INDICATING EFFICACY OF INTRAVENOUS MAGNESIUM

Study	Comments
Shrader	Intravenous treatment with multiple nutrients, including magnesium, for acute and chronic asthma may be of considerable benefit
Teo	Intravenous magnesium therapy may reduce mortality in patients with acute myocardial infarction
Woods	Mortality rate from ischaemic heart disease was reduced by 21% (95% CI 5-35%, p=001) and all-cause mortality rate reduced by 16% (2-29% p=003) in magnesium-treated patients
Skobeloff	Intravenous magnesium may represent a beneficial adjunct therapy in patients with moderate to severe asthma who show little improvement with beta-agonists
Ciarallo	Children treated with intravenous magnesium infusions for moderate to severe asthma had significantly greater improvement in short-term pulmonary function
Bloch	Intravenous $MgSO_4$ decreased admission rate and improved FEV1 in patients with acute severe asthma
Colquhoun	Intravenous magnesium supplements reduce the incidence of supraventricular arrhythmias following coronary artery surgery
Yusuf	Intravenous magnesium in acute myocardial infarction. An effective, safe, simple, and inexpensive intervention
Okayama	Intravenous infusion of $MgSO_4$ produces a rapid and marked bronchodilation in both mild and severe asthma and may be a unique bronchodilating agent
Mauskop	Intravenous infusion of 1 gram of $MgSO_4$ results in rapid relief of headache pain in patients with low serum IMg^{2+} levels
Demirkaya	1 g intravenous magnesium sulfate is an efficient, safe, and well-tolerated drug in the treatment of migraine attack

50% Magnesium Sulphate (Pharma lab 2004)

50% Magnesium Sulphate	Clear colourless slightly viscus
	For intravenous and intramuscular injections
pH	Between 5.5-7.0
1 ml 50% $MgSO_4$	Contains 500 mg $MgSO_4$
	Contains 2 mmol Mg ions
	Contains 4 mEq Mg ions
	Contains 48 mg Mg
Dilution 50% $MgSO_4$ before use	Intravenous 1:40 e.g. 5ml $MgSO_4$ to 200 ml diluent
	Intramuscular 1:1 e.g. 5ml $MgSO_4$ to 5 ml diluent
Compatible diluents	0.9% sodium chloride
	lactated Ringer's solution
	5% glucose
	5% glucose in 0.9% sodium chloride
Dosage	To be determined by doctor depending on patient's individual requirement
	Total adult dose should not exceed 30g $MgSO_4$ per day
An example of high dose Intravenous $MgSO_4$	2.5g 50% $MgSO_4$ over 80 min [in 200ml diluent]
An example of low dose intramuscular $MgSO_4$	1g 50% $MgSO_4$ every 6 hours [in diluent] for 4 doses

Nearly all the studies are based on magnesium sulphate but injectable magnesium also comes in the form of magnesium chloride $MgCl_2$ and commercially available as a 10% or 20% solution. In the end magnesium sulphate or magnesium chloride are essentially both sources of magnesium. There are no studies to demonstrate which has an advantage or is better therapeutically. Magnesium sulphate is slightly less acidic and has had extensive clinical use and research for over 40 years with a good safety record. The sulph**ate** form is not a source of concern for sulphur allergy sufferers as it is very stable and doesn't break down to cause allergy like the sulphite form.

Due to manufacturing difficulties, magnesium chloride for injection is actually magnesium chloride hexahydrate 100mg/ml, 10% $MgCl_26H_2O$ and therefore heavier, having different osmotic pressure. This can be confusing to practitioners who are calculating osmotic pressures of their infusion solutions as it takes 1.068 ml of the hexahydrate form to equal 100 mg magnesium chloride. Alternatively it takes 1.0 ml of the hexahydrate form to equal 96 mg magnesium chloride. The osmolarity of $MgCl_26H_2O$ is 2.951 per millilitre. Once the hexahydrate form is dissolved in sterile water for injection there is no distinction between $MgCl_26H_2O$ and $MgCl_2$ (McGuff Pharmaceuticals).

10% Magnesium Chloride Injection (DBL 2007)

10% Magnesium Chloride	Is actually magnesium chloride hexahydrate
	For intravenous injections
pH	Between 4-5
1 ml 10% $MgCl_2$	Contains 96 mg $MgCl_2$ - see text above this table
	Contains 1 mmol Mg ions
	Contains 2 mEq Mg ions
	Contains 24 mg Mg
Dilution $MgCl_2$ before use	Intravenous 1:40 e.g. 5ml $MgCl_2$ to 200 ml diluent
Compatible diluents	0.9% sodium chloride
	5% glucose
	5% glucose in 0.9% sodium chloride
Dosage	To be determined by doctor depending on patient's individual requirement
	Total adult dose should not exceed 18.7g $MgCl_2$ per day
An example of high dose intravenous $MgCl_2$	2g 10% $MgCl_2$ over 80 min [in 200ml diluent]

IV or IM?

The medical practitioner needs to decide whether to use intra-venous (IV) or intra-muscular (IM) injections for the individual patient's needs. The onset of action of IV magnesium is nearly immediate, whereas with IM magnesium it is about 1 hour. The duration of action after IV magnesium is about 30 minutes whereas with IM magnesium it is 3-4 hours (Pharma Lab 2004).

One of the important reasons that practitioners use IV nutrient therapy to effect a maximum or peak serum concentration, hoping to enhance nutrient cellular uptake by the high serum concentration gradient across the cell membrane (Gaby 2007, Thomson/Royal College 2002).

While intravenous therapy appears to be more advantageous, practitioners may want to slowly build up magnesium stores or maintain them by IM injections of $MgSO_4$ which unfortunately are often painful.

Whenever IV magnesium is used for a patient the practitioner must ensure a slow drip rate. Rapid administration of IV magnesium is dangerous and may result in respiratory depression or cardiac arrhythmia and arrest.

Significant Interactions with Magnesium (Braun 2007, Pharma Lab 2004)

Interaction with	Comments
Aminoglycosides e.g. gentamycin	May reduce absorption of magnesium
Anti-arrhythmic medication	May have additive effect with magnesium
Cardiac glycosides/digitalis	Given with caution as heart block may occur if calcium salts are used to treat Mg toxicity
Calcium-channel blockers	Magnesium may enhance hypotensive effect – this may be beneficial
Calcium salts	Calcium sulphate may precipitate when calcium salts are mixed with $MgSO_4$
CNS depressants	Use with magnesium may result in enhanced CNS depression
Fluoroquinolones	Mg may reduce absorption of these antibiotics
Loop diuretics and thiazide diuretics	Increased magnesium loss
Neuromuscular blocking agents	May result in excessive neuromuscular blockage
Potassium-sparing diuretics	May increase total body magnesium
Tetracyclines	Form insoluble complexes with Mg making both less absorbed

References are available upon request

"Intravenous magnesium must only be administered as a slow drip. Rapid IV administration of magnesium is dangerous and may result in cardiac arrest."

Have Your Say

LETTER TO THE EDITOR

Vitamin C – Here we go again

From time to time there is a rush of blood to the head of some well meaning scientists and medical practitioners following more often than not, a limited or even non-physiologically relevant experiment with vitamin C.

This rush of blood inevitably produces a flurry of media reports, usually by people who do not have a total understanding of the chemistry, biochemistry and physiological mechanisms of vitamin C action in the body. This is most unfortunate because it inevitably produces confusion, not only with the general public, but also with many medically educated professionals. The following replies to two articles demonstrate the inadequacies of modern day research and its reporting.

Ian Dettman PhD

Reply to: "**Vitamin C may reduce effect of chemotherapy.**" Cancer Research. 2008;68:8031-8038

Summary of "Cancer Research" paper:
"Results of the laboratory study by Dr Mark Heaney and colleagues at the Memorial Sloan-Kettering Cancer Center found that pre-treating cells with vitamin C resulted in a dose-dependent decrease in the cytotoxic properties of the anti-cancer drugs doxorubicin, cisplatin, vincristine, methotrexate, and imatinib. With high doses of vitamin C reducing the efficacy of some of the drugs tested by as much as 70%"

Reply authors: **Dr Joachim Fluhrer MBBS, Dr Ian Dettman PhD, Cliff Meakin BSc**

Reply: **"Vitamin C may assist the action of chemotherapy."**

We are surprised that the researchers Heaney et al. have conducted an in vitro study into Vitamin C in combination with cytotoxic drugs using dehydroascorbic acid. While dehydroascorbic acid is a significant form of the vitamin in vivo, and along with ascorbate is a form found in foods and transported by many cells, it is certainly not the principal form of Vitamin C in vivo. The principal forms are ascorbate and its immediate oxidation product monodehydroascorbate, a redox pair that is recyclable and responsible for the majority of Vitamin C antioxidant activity in vivo[i]. Dehydroascorbate is rapidly and actively recycled to ascorbate in vivo, because Vitamin C activity requires the reducing power of ascorbate[ii]. Dehydroascorbate should not at any time be the major form of Vitamin C in the body, it is unstable and rapidly broken down into toxic and non-toxic metabolites - were these measured in this in-vitro study?

Much work has already been done to understand the dynamics of Vitamin C in cancer cell killing. While there are several excellent publications in this area, three significant papers have thrown much light on the relationship between Vitamin C and cancer cell death and define the current thrust of research. These papers are published by Casciari et al (2001)[iii], Chen et al (2005)[iv] and Chen et al (2007)[v].

The findings are essentially that:

- *Extracellular dehydroascorbate lead to intracellular ascorbate accumulation in the cells tested.*
- *Extracellular ascorbate was effective at cell killing and extracellular dehydroascorbate was not effective.*
- *Cancer cell killing was not mediated by intracellular ascorbate accumulation.*
- *Cancer cell killing was most effective at high extracellular concentrations of ascorbate.*

Based on the general direction of recent research, it is not surprising that Heaney et al did not find much effect from adding dehydroascorbate. Even further, the micromolar extracellular concentrations used were significantly lower than the milimolar ascorbate concentrations found effective by Casciari et al and Chen et al.

In vitro and in vivo literature, including clinical trials and case reports that support the usefulness of Vitamin C in combination with cytotoxic drugs all use ascorbate as the drug tested, not dehydroascorbate. Clearly Vitamin C has not been tested in trials against all chemotherapy agents for all cancers. No drug has. Add to this that Vitamin C is a generic and somebody has to pay for the clinical research. Despite the limitations, there are several clinical cases or studies, or in vitro studies published that show benefit from a combination of Vitamin C (as ascorbate) and various chemotherapy drugs. A handful are mentioned here:

- Kurbacher CM, Wagner U, Kolster B, Andreotti PE, Krebs D, Bruckner HW. Ascorbic acid (vitamin C) improves the antineoplastic activity of doxorubicin, cisplatin, and paclitaxel in human breast carcinoma cells in vitro. Cancer Lett. 1996 Jun 5;103(2):183-9. PMID: 8635156
- Chiang CD, Song EJ, Yang VC, Chao CC. Ascorbic acid increases drug accumulation and reverses vincristine resistance of human non-small-cell lung-cancer cells. Biochem J. 1994 Aug 1;301 (Pt 3):759-64. PMID: 7914401
- Nagy B, Mucsi I, Molnar J, Varga A, Thurzo L. Chemosensitizing effect of vitamin C in combination with 5-fluorouracil in vitro. In Vivo. 2003 May-Jun;17(3):289-92. PMID: 12929582
- Tarumoto T, Nagai T, Ohmine K, Miyoshi T, Nakamura M, Kondo T, Mitsugi K, Nakano S, Muroi K, Komatsu N, Ozawa K. Ascorbic acid restores sensitivity to imatinib via suppression of Nrf2-dependent gene expression in the imatinib-resistant cell line. Exp Hematol. 2004 Apr;32(4):375-81. PMID: 15050748
- Abdel-Latif MM, Raouf AA, Sabra K, Kelleher D, Reynolds JV. Vitamin C enhances chemosensitization of esophageal cancer cells in vitro. J Chemother. 2005 Oct;17(5):539-49. PMID: 16323444
- Prasad KN, Cole WC, Kumar B, Prasad KC. Scientific rationale for using high-dose multiple micronutrients as an adjunct to standard and experimental cancer therapies. J Am Coll Nutr. 2001 Oct;20(5 Suppl):450S-463S; discussion 473S-475S. Review. PMID: 11603656
- Drisko JA, Chapman J, Hunter VJ. The use of antioxidants with first-line chemotherapy in two cases of ovarian cancer. J Am Coll Nutr. 2003 Apr;22(2):118-23. PMID: 12672707

We do not agree that the conclusion drawn by Heaney et al is correct, i.e. that Vitamin C antagonizes the cytotoxic effects of antineoplastic drugs. Dehydroascorbic acid is not a suitable clinical pharmacological form of Vitamin C and it is confusing for it to be named Vitamin C in this context. It is most definitely NOT the form of Vitamin C that is routinely used in a clinical setting and this study bears little resemblance to the typical use of Vitamin C in research.

[i] Buettner GR. The pecking order of free radicals and antioxidants: lipid peroxidation, alpha-tocopherol, and ascorbate. Arch Biochem Biophys. 1993 Feb 1;300(2):535-43. Review. PMID: 8434935

[ii] Wilson JX. The physiological role of dehydroascorbic acid. FEBS Lett. 2002 Sep 11;527(1-3):5-9. Review. PMID: 12220624

[iii] Casciari JJ, Riordan NH, Schmidt TL, Meng XL, Jackson JA, Riordan HD. Cytotoxicity of ascorbate, lipoic acid, and other antioxidants in hollow fibre in vitro tumours. Br J Cancer. 2001 Jun 1;84(11):1544-50. PMID: 11384106

[iv] Chen Q, Espey MG, Krishna MC, Mitchell JB, Corpe CP, Buettner GR, Shacter E, Levine M. Pharmacologic ascorbic acid concentrations selectively kill cancer cells: action as a pro-drug to deliver hydrogen peroxide to tissues. Proc Natl Acad Sci U S A. 2005 Sep 20;102(38):13604-9. Epub 2005 Sep 12. PMID: 16157892

[v] Chen Q, Espey MG, Sun AY, Lee JH, Krishna MC, Shacter E, Choyke PL, Pooput C, Kirk KL, Buettner GR, Levine M. Ascorbate in pharmacologic concentrations selectively generates ascorbate radical and hydrogen peroxide in extracellular fluid in vivo. Proc Natl Acad Sci U S A. 2007 May 14; PMID: 17502596

Reply to: **"Fatal Vitamin C-associated acute renal failure."** Anaesth Intensive Care: 2008, 36: 585 - 588

Summary of "Anaesth Intensive Care" paper: "A patient failed to disclose his use of high-dose vitamin C and subsequently died. Post-mortem renal biopsy demonstrated intra-renal oxalate crystal deposition"

Reply author: **Dr Ian Dettman PhD**

Reply: **" Was it Vitamin C that caused the acute renal failure?"**

I would like to make the following observations:

This patient clearly had kidney failure and it is sad that he refused conventional therapy which refusal almost certainly contributed to his demise. However, it is presumptive to state that the kidney failure was caused by consuming several grams daily of Vitamin C. High levels of calcium can contribute to crystal deposition especially if the time on ingestion of the oxalate-containing foods or of Vitamin C is separated from the time of ingestion of calcium-containing foods and/or calcium supplements. High levels of oxalic acid are commonly found in tea, coffee, chocolate, spinach, rhubarb, turnips, almonds, peanuts, strawberries and may indeed contribute significantly to increased levels of oxalate excretion.[1,2] A recent study demonstrated that tea and coffee provided the majority of the increased oxalate load amongst stone formers[3]. What were the dietary contributors to the oxalate excretion in this patient other than Vitamin C?

All animals except man, the other primates, guinea pig, fruit bat, a species of salmon and locust make Vitamin C in their bodies to levels as high as 60 grams of ascorbic acid daily, when under stress, on a pro-rata human adult body weight basis[4,5,6]. The kidney function/structure of our immediate mammalian ancestral predecessors is not significantly different from our own. There does not appear to be an epidemic of kidney failure amongst our mammalian animal cousins when under stress.

A daily intake of several grams of Vitamin C is hardly considered a supra-physiological dose for an adult person. As much as 100 grams daily of Vitamin C in divided doses can be tolerated in some acute and chronic diseases. (do not use Calcium Ascorbate for these mega doses)[7] with no published survey study reporting an increased propensity for kidney failure. Interestingly, there are at least two clinical trials (phase 1 and 2 at this stage) underway in USA using high dose intravenous Vitamin C for the treatment of Cancer. Doses as high as 1.5 grams/kg body weight were used with no report of renal complications despite slight increases in the 24 hour urinary excretion of oxalate[8,9].

At some stage in our evolutionary past we lost the ability to make Vitamin C due to the loss of the enzyme l-gulolonolactone oxidase[4,5,6]. Our requirements for Vitamin C were subsequently met through environmental gathering. Intake of up to 8 grams of Vitamin C daily has been shown to not increase the daily excretion of oxalate above the normal 24 hour urinary level[10].

Renal biopsy in this patient clearly occurred post mortem. Any residual Vitamin C pooled within his poorly functioning kidneys would be rapidly oxidized to oxalic acid post mortem confusing the conclusion that this had happened in vivo. Furthermore, any histopathology performed by blocking in paraffin wax would immediately result in the break down of residual Vitamin C into oxalic acid due to the application of hot paraffin[11,12].

The formation of oxalate crystals in the kidneys is a complex of many factors pooling of urine (stasis), oliguria, concentration of Calcium and oxalic acid, pH, and individual genetics such as hyperoxaluria and inhibitory glycoproteins (under genetic control) to name but a few. The histopathological observation of oxalic acid crystals in post mortem kidney tissue following renal biopsy in the earlier stages of kidney failure in patients who are consuming many grams/day of Vitamin C, is further complicated by the rapid oxidation of Vitamin C into oxalic acid in the presence of air and water, which breakdown is further increased during the heating process involved in paraffin blocking.

The moral of this tragic episode is that whatever caused the kidney failure, orthodox medicine may well have saved the patient's life. There is a sad mistrust of orthodox medicine by many people who are advocates of complementary medicine and there is a sad skepticism of complementary medicine by many orthodox medical practitioners who, as in this case, may have rushed to press without considering all of the possible causes of the kidney failure in this patient.

1. Hesse A, Siener R, Hevnck H, Jahen A, The influence of dietary factors on the risk of urinary stone formation. Scanning Microsc. 1993 Sep;7(3): 1119-27

2. Kasidas GP, Rose GA, Oxalate content of some common foods: determination by an enzymatic method. J Hum Nutr 1980 Aug:34(4): 255-66

3. Gasinska A, Gajewska D, Tea and coffee as the main sources of oxalate in diets of patints with kidney oxalate stones. Zakl Hig. 2007 Rocz panstw:58(1) 61-7

4. Stone I, On the genetic etiology of scurvy. Acta Genticae Medicae et Gemollologiae 1966 15: 345-350

5. Stone I, The natural history of ascorbic acid in the evolution of the mammals and primates and its significance for present day man. Orthomolecular Psychiatry 1972 1:82-89

6. Stone I, Eight decades of scurvy, the case history of a misleading dietary hypothesis. Orthomolecular Psychiatry 1979 8: 58-62

7. Cathcart R, Vitamin C, titrating to bowel tolerance, anascorbemia and acute induced scurvy. Medical Hypothesis 1981 7: 1259-1376

8. Hoffer L. J., Levine M, et al, Phase 1 Clinical trial of I.V. Ascorbic Acid in advanced malignancy, annals of oncology 2008 Advance access July 25.

9. Stephenson C, et al Phase 1 trial of high-dose Intravenous Vitamin C treatment for patients with cancer JAOA 2007 107:212

10. Fituri N, Allawi N, Bentley M, et al, Urinary and plasma oxalate during ingestion of pure ascorbic acid: a re-evaluation. Eur Urol 1983 9:312-315

11. Unpublished data (2007) analysed by Biological Therapies, a TGA licenced facility routinely performing Vitamin C and oxalate levels.

12. Hoffer A, Ascorbic acid and kidney stones. Can Med Assoc J 1985 Feb 132(4):320

From the CEO

Stephen Penman, M Research (H Sc), GC Tert Teach Learn

Dear Members and Friends of ACNEM,
Firstly, I would like to echo Gary Deed's thanks to Dennis Crowley for his management of the College during 07/08. Largely as a result of his efforts, and the work of Michelle Bradford and Kathryn Silver in the office, ACNEM is enjoying renewed growth. As the new CEO, I'm looking forward to bringing new energy to that process.

In this report, I would like to provide a brief overview of recent events and current initiatives.

e-News
ACNEM now has a regular, dedicated email newsletter with news, events, the latest research and other items of interest. Please send contributions for the e-News to mail@acnem.org and let us know if you haven't been receiving your copy.

ACNEM Journal
The ACNEM Journal has been redesigned, as you will see with this issue, and we welcome your feedback on the new look and feel. Our editor, Lesley Braun, resigned recently due to work commitments, and we thank her for the time and energy she generously gave the organisation. In addition to looking for a new editor, we are always on the lookout for quality papers and articles for the Journal along with news, events, research, book reviews and light relief.

RACGP Integrative Medicine Fellowship
The AIMA/RACGP Joint Working Party has recently announced the establishment of an Integrative Medicine (IM) Faculty within the RACGP, as part of a wider College initiative to develop faculties of specific interest to GPs. The IM Faculty will provide an accreditation system and educational framework for doctors wishing to undertake a Fellowship in Integrative Medicine.

We are working closely with both AIMA and RACGP to maximise the opportunities and role for ACNEM in this initiative and we expect that our Primary Course and STPs will be eligible training under the Fellowship. We are also investigating how the ACNEM Fellowship will articulate into the RACGP IM Fellowship.

RACGP & ACRRM Points
ACNEM is a fully accredited RACGP QA&CPD training provider for the 2008-2010 Triennium, with 40 Category 1 points applying to each of our courses. ACRRM points have also been granted. More details on application.

RACP Draft Guidelines for ADHD
Earlier this year the RACP released Draft "Guidelines on Attention Deficit Hyperactivity Disorder (ADHD)" and a call for submissions in response to the draft by 28 July. A number of ACNEM members expressed concern at the guidelines which seemed to attribute little or no value to nutritional approaches to ADHD. ACNEM submitted a formal response and we are waiting to hear further.

August Training in Darling Harbour
The training course held at the Novotel Darling Harbour in August 2008 was a great success with about 70 doctors attending the Primary Course, and Special Training Programs on Allergy & Autoimmune and The Gut. We enjoyed the venue and location so much, we've booked the Novotel Darling Harbour again for our March 09 course!

14th International Holistic Health Conference
ACNEM participated in the popular annual AIMA Holistic Health Conference at Bondi Beach in September 2008. With speakers like Ian Brighthope, Robyn Cosford and Carole Hungerford, nutritional and environmental medicine was in the spotlight! Thanks to our friends at AIMA for making us feel so welcome.

"Can the Colours" Kids First Campaign
ACNEM has lent its support to the "Can the Colours" Kids First Campaign. You can find out more and sign the open letter to the board of Food Standards Aust/NZ (FSANZ) by visiting http://www.additivealert.com.au/.

GPCE in Melbourne
ACNEM and AIMA will share a stand at the General Practitioner Conference and Exhibition (GPCE), 14-16 November 2008 Melbourne Exhibition Centre. We hope to see you there!

2009 ACNEM Training Calendar
Courses have been scheduled for Sydney, Adelaide, Brisbane and Auckland in 2009 with Melbourne and Perth planned for 2010. Please see the Coming Events section of this Journal for more details. Please note, in 2009, training courses will be held from Thursday to Sunday instead of Wednesday to Saturday.

Clinical Training Programs
In 2009 and 2010 there will also be two special "Clinical Training Programs" (CTPs), one on Chelation and the other on Injectable Nutrients. These CTPs will be held in clinical settings, dates and locations to be advised.

Online Distance Education - coming in 2009
Commencing July 2009, the ACNEM Primary Course and STPs will be available online. If you are unable to attend one of our face-to-face courses, please register your interest in ACNEM distance learning.

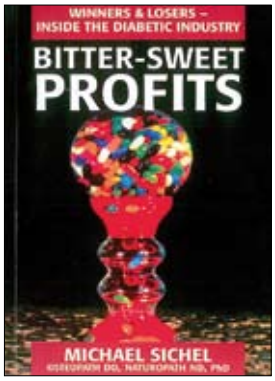
Free Public Lectures
ACNEM will be providing a series of free public lectures around the country specifically for doctors and healthcare professionals, commencing with Assoc Prof Ray Kearney speaking on the The Health Impacts of Fossil Fuels on the Gold Coast in November.

You'll see from this brief summary that ACNEM is enjoying renewed growth. Thank you for your continuing support of ACNEM and I look forward to meeting many of you in the near future.

To register your interest in ACNEM training, please visit www.acnem.org, email mail@acnem.org or phone (03) 9597 0363.

Warm regards,
Stephen Penman
CEO

New Books



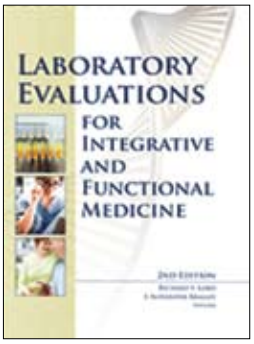
BITTER-SWEET PROFITS WINNERS & LOSERS – INSIDE THE DIABETIC INDUSTRY

By Michael Sichel, DO, ND, PhD

This book contains stories of recovery and improvement with Eleotin.

"I developed diabetes in my late sixties. I could not sleep because of it and had to take 30 painkillers a day. My limbs decayed even though I was taking insulin shots. The diabetes research institute where I worked recommended that I take Eleotin. I took it for four months. All my severe diabetic symptoms disappeared. I have not taken Eleotin since that time and I still feel better even after two years. I never expected that this could happen to me."

Former nurse in Calgary, Canada (70 years)



LABORATORY EVALUATIONS FOR INTEGRATIVE AND FUNCTIONAL MEDICINE

2nd Edition Richard S Lord J Alexander Bralley Editors (662 pages)

Published by Metametrix Institute 2008 ISBN 0-9673949 -4 -5

This is a welcome update on the first edition published in 2001 incorporating the latest trends in pathology developments and testing.

The layout of the book is excellent with chapters on Vitamins, Nutrient and Toxic Elements, Amino Acids, Fatty Acids, Organic acids, as well as substantial chapters on Gastrointestinal Function, Toxicants and Detoxification, Oxidant Stress, Hormones and Genomics.

Each chapter has well constructed diagrams and a number of Case Illustrations at the end. The thousands of references are an excellent resource for those wishing to delve further into what has been so cogently summarised. This book is an absolute must for all practitioners working in the field of Integrative Medicine, as well as all University Medical Department libraries.

Dennis Crowley, BSc

HOW TO REPAIR CHILDREN DAMAGED BY MERCURY, MEDICINE & POLITICS - NEW AUSTRALIAN CHELATION METHODS

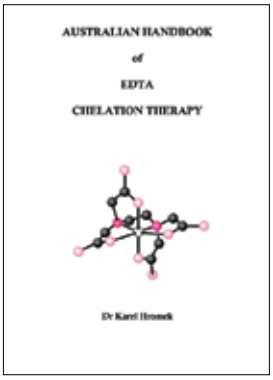
By Michael Sichel, ND, DO, PhD
with Alan Moses

When I was a boy there was no need for nut-free schools. Children going to school camp did not have to be lined up to receive their medications from the teachers. Autism was virtually unknown. What is happening to our children?

Unlike modern day environmental triggers, genetics do not change quickly. Investigating these triggers and their damaging consequences can and does give parents a good chance to restore their child to normalcy and allow that child the opportunity to live a fulfilling life.

It is a tragedy that the medical profession is so reluctant to acknowledge this, and instead tell parents little can be done other than use pharmaceutical medicines to manage symptoms. Michael Sichel's book demonstrates that all it takes for viable solutions to become a reality is a willingness to look for answers.

Emmanuel Varipatis MB BS, FACNEM



AUSTRALASIAN HANDBOOK OF EDTA CHELATION THERAPY

By Karel Hromek, BMed, BSc, FACNEM, FACRRM

"I wanted to write a reference handbook on EDTA Chelation Therapy. A book that was easy to use, to the point, yet comprehensive enough that a certified medical practitioner would have covered the knowledge base required and could proceed with safety." Karel Hromek

In a field like chelation where so much controversy exists, Dr Hromek serves as a steady guiding light. His logical approach backed by comprehensive research and more importantly validated by actual patient results ensures your investment in this book to be a good one. Thank you Karel for your courage, guidance and vision.
Warmest regards,
Hoe Bing B Sc; final year medical student

In The News

Shirley Schurmann, RN, Dip Nurse Ed., BAppl Sci, MEd Studies, GC Appl Sci(Nutr & Env Medicine)

IN DEFENSE OF FOOD: AN EATERS MANIFESTO

The editor of the New York Review of Books on ABC's Book Review with Romona Koval in July 2008, discussed Michael Pollan's latest book, 'In Defense of Food'. In his book, Pollan claims that most of what we consume today is not food but edible food-like substances, no longer the products of nature, but instead products of food science.

In the so-called Western diet, food of the sort our grandmothers would recognize as food has been replaced by nutrients and common sense replaced by confusion. Thirty years of nutritional advice has made us sicker and fatter while ruining countless numbers of meals, he says.

Pollan proposes a new answer to the question of what we should eat, that comes down to seven simple but liberating words; "Eat food. Not too much. Mostly plants." This erudite manifesto shows us how we can make thoughtful food choices that will enrich our lives, enlarge our sense of what it means to be healthy and bring pleasure back to eating.

NATURAL THERAPIES COMPARE WITH STATINS IN CHOLESTEROL STUDIES

The July 2008 issue of Mayo Clinic Proceedings published the results of a trial which found that a combination of red yeast rice, fish oil, and therapeutic lifestyle changes improved low density (LDL) cholesterol in a manner comparable to the standard treatment of a statin drug combined with diet and lifestyle recommendations[1].

"Our study was designed to test a comprehensive and holistic approach to lipid lowering," the authors write, "pending confirmation in larger trials, this multi-factorial alternative approach to lipid lowering has promise for a subset of patients unwilling or unable to take statins," they conclude.

The Daily Telegraph, on 10 June 2008, reported an "extract of red yeast rice was found to reduce the risk of dying from heart disease or having another heart attack." This randomised controlled trial looked at an extract of red yeast rice Xuezhiang (XZK) on heart health in 4870 Chinese people who had previously suffered a heart attack[2]. Long-term therapy with XZK significantly decreased the recurrence of cardiovascular events and the occurrence of new coronary events and deaths, improved lipoprotein regulation and was safe and well tolerated.

Red yeast rice is generally believed by scientists to be safe since it has been used for thousands of years as a food staple in Asian countries. However more long-term controlled trials are required to monitor effects and possible drug interactions. This product is a supplement from which the statins are derived, and as such is unregulated and non-standardised thus it is important to choose a product that is made to stringent quality control and standardisation.

In patients with multiple risk factors for heart disease, statins may be necessary due to their standardised measured effect.

[1] Becker DJ, Gordon RY, Morris PB, Yorko J, Gordon YJ, Li M, Iqbal N. Simvastatin vs therapeutic lifestyle changes and supplements: randomized primary prevention trial. Mayo Clin Proc. 2008 Jul;83(7):758-64.

[2] Lu Z, Kou W, Du B, et al. Effect of Xuezhikang, an Extract From Red Yeast Chinese Rice, on Coronary Events in a Chinese Population With Previous Myocardial Infarction. Am J Cardiol 2008; Apr 11

POSITION STATEMENT ON FISH, FISH OILS N3 POLYUNSATURATED FATTY ACIDS AND CARDIOVASCULAR HEALTH

The National Heart Foundation has made recommendations to improve the cardiovascular health of all Australians:

1. Consume about 500mg per day of combined DHA and EPA through a combination of the following:
   - Two or three serves of oily fish per week
   - Fish oil capsules or liquid
   - Food and drinks enriched with marine n3 PUFA
2. Consume at least 2g per day of ALA
3. Follow government advice on fish consumption re local safety issues
4. Discuss healthy eating and concerns about nutrition with an accredited practising dietitian or doctor

In addition, Health Professionals should advise all adult Australians with documented CHD to:

1. Consume about 1000mg per day of combined DHA and EPA
2. Those patients with elevated triglycerides should be advised to:

- *Start with a dose of 1200mg DHA & EPA per day and if appropriate,*
- *Increase the dose to 4000mg of DHA & EPA checking their patients response every 3-4 weeks until target levels are reached.*

A summary of NHF guidelines, evidence for recommendations and modes of action of n3 PUFA's is at www.heartfoundation.org.au.

FOOD ALLERGY IN CHILDREN

In the Health Report on ABC TV (15/04/2002), Norman Swan interviewed Prof Hugh Sampson from Mt Sinai School of Medicine New York. Professor Sampson claims that:

1. In Patients with infantile gastro oesophageal reflux, researchers found that about 40% of patients were provoked by milk challenge.

2. Food protein induced allergic eosinophilic oesophagitis was provoked by cow's milk, egg, soy, peanut or wheat, either in the baby's feed or proteins from these foods in maternal milk. The 3/52 taken to recover after withdrawal of the offending food was consistent with cell-mediated hypersensitivity.

3. Basically what happens with an allergic reaction, is you develop pyloric spasm. The concern is that current treatment with antacids and prokinetic agents try to override this late emptying of the stomach and make the problem worse

More recently, Carole Hungerford in her paper, Food Allergy and Intolerance, at the AIMA Holistic Health Conference, 2008 suggested treatment with antacids and H2 blockers:

i) Reduce the degree of digestion of the offending protein by acid reduction
ii) Force through an antigen that the body is trying to reject.

Coming Events

April 27-May 5, 2009 Monday - Tuesday

Physician Training & Patient Assessment Program - Outreach 2009
Venue: Rydges World Square Hotel, Sydney, NSW
Contact: Walsh Research Institute Sydney
Phone: +61 2 9797 2877 - Contact: Marnie Lo, Outreach Co-ord.
Eemail: maclo@aapt.net.au Web: www.biobalance.org.au

May 16-19, 2009 Saturday - Tuesday

Mindd 3rd Annual International Forum on Children
Venue: Australian Jockey Club, Randwick, Sydney
Contact: Mindd Foundation
Phone: +61 2 9337 3600 Web: www.mindd.org

August 20-22, 2009 Thursday - Saturday

Asia Pacific Autism Conference (APAC)
Venue: Sydney Convention and Exhibition Centre
Web: www.apac09.org

October 9-11, 2009 Friday - Sunday

AIMA 15th International Holistic Health Conference 2009
Venue: Novotel St Kilda, Melbourne, Victoria, Australia
Contact: AIMA Email: admin@aima.net.au
Phone: +61 3 8699 0582 Web: www.aima.net.au

"Autobiography in Five Chapters"

I walk down the street.
There is a deep hole in the sidewalk.
I fall in.
I am lost… I am hopeless.
It isn't my fault.
It takes forever to find a way out.

I walk down the same street.
There is a deep hole in the sidewalk.
I pretend I don't see it.
I fall in again.
I can't believe I'm in the same place.
But it isn't my fault.
It still takes a long time to get out.

I walk down the same street.
There is a deep hole in the sidewalk.
I see it is there.
I still fall in…it's a habit.
My eyes are open.
I know where I am.
It is my fault.
I get out immediately.

I walk down the same street.
There is a deep hole in the sidewalk.
I walk around it.

I walk down another street.

Tibetan Book of Living and Dying. 10th Edition.
Sogyal Rinpoche

Your college

SYDNEY TRAINING IN AUGUST 08 A BIG HIT

It seems that ACNEM's absence from Sydney has been missed, as indicated by the well attended turnout to this event. Delegates enjoyed meeting new contacts, reacquainting with others, and just being with like-minded practitioners not normally found at other medical conferences. The Gut and The Changing Face of Allergy & Autoimmune Disease STPs provided delegates with a broader understanding of Integrative Medicine through keynote speakers such as Assoc Prof Ray Kearney, Dr Henry Butt, Dr Robyn Cosford, Jacques Duff and, of course, ACNEM's core lecturers. Delegates learned that treatment can be more straightforward if the cause is found, and starts with spending time taking adequate history from patients.

The venue provided meeting rooms with plenty of natural light and fresh air, beautiful views of Darling Harbour and fresh, healthy food and drinks.

ACNEM is looking forward to Sydney's hospitality again at the Novotel Darling Harbour, in March 2009. See 'upcoming courses' at www.acnem.org for more information.

TWO FELLOWSHIP ENROLEES TURNED FELLOWS

Congratulations to Dr Sandeep Gupta and Dr Megan Rathbone who have become Fellows of the College. They both passed their Part 2 Fellowship exams at the August event in Sydney to claim their well-earned Fellow Certificates … onwards and upwards!

AIMA HOLISTIC HEALTH CONFERENCE

ACNEM had a very popular exhibitor's presence at the recent AIMA Conference in Bondi Beach, Sydney. At our stand a draw was held for delegates to win a free Primary Course to the value of $2,000 … and the winner was Robyn Box! Congratulations Robyn! We look forward to seeing you at our Primary Course in 2009. For those of you who missed out, you can enter again in November at the GPCE in Melbourne … come and see us at the ACNEM stand for your chance to win.

HOLIDAYS

Well, it's that time again and how fast has this year gone by? With all the good things planned for 2009, the College will take time for some rest and relaxation and to re-energise for the new challenges. The College admin office will be closed from 22nd December and reopen on the 19th January.

CHRISTMAS WISH

Another Christmas is almost upon us and ACNEM staff would like to wish all our members and all those involved with the College a very joyful and restful holiday season. Thank you for all your generous contributions during 2008 to this College … we couldn't do it without you. Be happy and see you in 2009 for the next exciting instalment in the growth of ACNEM.

ACNEM Training In 2009

...Integrating Nutritional & Environmental Medicine

RACGP QA&CPD Approved — Accredited Provider

Sydney 12-15 March

at the Novotel Darling Harbour

1. **Primary Course in NEM** (4 days, 12-15 March)
2. **Infertility/Fertility, Pre-conception & Pregnancy STP** (2 days, 12-13 March)
3. **Children & Adolescents - Nappies to P Plates STP** (2 days, 14-15 March)

Novotel Darling Harbour

Adelaide 7-10 May

1. **Primary Course in NEM** (4 days, 7-10 May)
2. **Metabolic Syndrome STP** (2 days, 7-8 May)
3. **Andropause & Menopause STP** (2 days, 9-10 May)

Brisbane 17-20 Sept

1. **Primary Course in NEM** (4 days, 17-20 September)
2. **Thyroid & Adrenal STP** (2 days, 17-18 September)
3. **Pain Management & Musculoskeletal STP** (2 days, 19-20 September)

Auckland 19-22 Nov

1. **Primary Course in NEM** (4 days, 19-22 November)
2. **Metabolic Syndrome STP** (2 days, 19-20 November)
3. **Andropause & Menopause STP** (2 days, 21-22 November)

ACNEM Training is...

Evidence and practice-based:

- Practical and evidence-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 also leads to better identification of the underlying causes of disease, and to improved patient outcomes.
- Strongly referenced to the major medical literature, interactive and enjoyable with case studies and discussion; it includes the role of lifestyle, nutritional and environmental factors in health and disease. Comprehensive ongoing training. support, networking and a Fellowship Program are offered.

Time and cost-effective:

- Primary Course: 4 days, Thurs-Sun, 30 contact hours.
  STPs: 2 days, Thurs-Fri or Sat-Sun, 15 contact hours.

Please note, in 2009, training will be held from Thursday to Sunday instead of Wednesday to Saturday. There will also be two special "Clinical Training Programs" (CTPs), one on Chelation and the other on Injectable Nutrients. These CTPs will be held in clinical settings, dates and locations to be advised.

To register your interest in any of these training programs, please visit www.acnem.org, email mail@acnem.org or phone (03) 9597 0363.

Assoc Prof Ray Kearney lecturing in the Allergy & Autoimmune STP

"More than 3 out of 4 people regularly use natural medicines[1] making this highly relevant training."

1. Cardinal Health Roy Morgan Market Research, 2004.

Australasian College of Nutritional and Environmental Medicine — ACNEM®

Prof John Murtagh, Monash Univ. JCM May/Jun '04

"The practitioner has an obligation to his or her patients to use natural healing methods wherever possible."