



Bio-Balance Health Association Inc
A non-profit organisation dedicated to promoting effective techniques
of biochemical treatment for mental and behavioural disorders

Presidents Update

I would first like to thank our Newsletter editor, Vice President John Skelton, for his continuing good work in producing our latest Newsletter. There is considerable work involved in doing this, particularly in a technical field such as nutrient therapy.

I would also like to thank those who contributed articles to this Newsletter, in particular, Dr. Bill Walsh PhD, who is extremely busy at this time, not only with his work as Research Director at the Health Research Institute, but also acting as Chief Executive Officer since the resignation of Suzanne Speckman. Suzanne has taken up a new position in another State nearer to her place of residence.

We are pleased to advise that Dr. Bill Walsh will again be visiting Australia in October this year. Dr. Walsh has been invited to be a keynote speaker at The ARMS Global Autism Conference to be held on 6th to 7th October 2006.

Bio-Balance will host an address by Dr. Walsh, on Sunday 8th October. This is open to the public and we would encourage people to attend this presentation. (See details of location etc. below).

Patients wishing to secure an appointment at the next Pfeiffer Outreach Clinic in Sydney in April 2007 may do so by paying a security deposit. (See notice on page 4.)

The Pfeiffer Centre will again be conducting a further Outreach Clinic Sydney in April 2007. This Clinic will run from 16th – 24th April. Early bookings are essential to secure a consultation and to undertake testing at least 6 weeks prior to this time. See further contact details in this Newsletter.

After considerable work by our Secretary, Margaret Harms and other members of our team, the Bio-Balance website has made substantial progress and will soon be available for viewing. We will keep you informed.

We would like to welcome all new Bio-Balance members.

Bruce Jeanes - President.

Bio-Balance Health Association
will host an address by
Dr William Walsh PhD
on

The Role of Nutrient Therapy in
Combating Mental Illness,
Alzheimer's Disease and
Parkinson's Disease

Wesley Hospital Auditorium,
Auchenflower
Sunday 8 October 2.30 – 4.30pm

Register your Booking
Entry Fee \$10.00 in advance
Pensioners Free

Come and hear about
some exciting new developments in
treating these challenging disorders

See page 2 for an abstract of Dr Walsh's
address

Editor's Note:

Several articles in this Newsletter discuss issues relating to oxidative stress and are, of necessity, somewhat technical. For readers with limited knowledge in this area, a brief explanatory article on oxidative stress and antioxidants will be found on page 9.

The Role of Nutrient Therapy in Combating Mental Illness, Alzheimer's Disease and Parkinson's Disease

William J. Walsh, Ph.D.

Abstract

The mystery of schizophrenia is beginning to yield to scientific research, and the new knowledge is providing a roadmap to effective treatment. For example, we recently learned that schizophrenia is a condition of oxidative stress and involves gradual neurodegeneration (loss of brain cells). This explains why antioxidants such as niacin, zinc, Vitamin C, and selenium have improved the mental health of many persons. It's also interesting to note that Risperdal and several other antipsychotic drugs have significant antioxidant properties. We've also learned that most victims of mental illness exhibit genetic aberrations in folates, methyl groups, copper, zinc, and other nutrients that are required for synthesis of neurotransmitters. This explains why nutrient therapies aimed at normalizing the levels of these neurotransmitter precursors are often effective. This presentation will summarize the biochemistry of depression, bipolar disorder and schizophrenia and describe therapies aimed at normalization of key nutrient factors.

A recent development at the Pfeiffer Treatment Center in Warrenville, Illinois has been the introduction of a novel approach for the treatment of Alzheimer's Disease (AD) and other neurodegenerative diseases. The new approach centres on promotion of metallothionein (MT) protein activity in the brain. MT protein levels are depleted in AD brains (less than 1/3 of the normal concentration), which tends to produce uncontrolled increases in free-radicals. The characteristic amyloid plaques found in the brains of AD patients have been reported to result from the assault of free-radical metals upon brain substances. A careful trial of MT-Promotion therapy for 20 AD patients resulted in many reports of partial improvement in memory followed by stabilization that has lasted for years. This new therapy appears highly promising for prevention and treatment of AD, but must be considered unproven until years of controlled testing can confirm efficacy. The Pfeiffer Center is now welcoming pioneering patients with mild or moderate AD, but is not accepting persons with severe AD, who might be preserved in a condition of prolonged misery. This presentation will summarize progress in application of this new therapy for AD and Parkinson's Disease.

Research News:

Link Between Autism and Abnormal Blood-vessel Function and Oxidative Stress

Dr William Walsh of Pfeiffer Treatment Center, working in conjunction with researchers at the University of Pennsylvania School of Medicine and with Dr Woody McGinnis, discovered that children with autism showed signs of abnormal blood-vessel function and damaging levels of oxidative stress compared to healthy children. The children with autism possessed levels of biochemicals that indicate the presence of constricted blood vessels via the endothelium (the cells that line blood vessels) with a higher tendency to form clots (through platelet cells).

By exploring the relationship between oxidative stress and blood-vessel function in autistic patients, investigators hope to find new therapeutic options for this syndrome. The researchers published their findings in the August issue of *Archives of Neurology*.

Previous studies at other institutions have shown that autistic patients have reduced cerebral blood flow, presumably due to constricted blood vessels in the brain, compared with healthy controls.

Urine samples of autistic children who were similar in age and healthy controls were provided by Pfeiffer Treatment Center (www.hriptc.org/), where patients were diagnosed with autism disorder and evaluated. Patients were excluded from analysis if they had ever received anti-oxidant treatments or medicine with any known anti-oxidant effect; if they suffered from chronic illnesses, such as depression, psychosis, or inflammatory disorders; and/or if they were sick at the time of the sample collection. These strict criteria resulted in the small sample size in this preliminary study: 26 children with autism and 12 healthy controls.

The team measured isoprostane, a biomarker for oxidative stress; thromboxane, an index of platelet activation; and prostacyclin, a measure of blood vessel activation in the samples.

This study represents the first observation that the rates of thromboxane and prostacyclin synthesis are both not only significantly increased in autism, but also are closely correlated with the rate of oxidative stress. Compared with controls, children with autism had significantly higher urinary levels of isoprostane, thromboxane and prostacyclin.

Oxidative stress is the result of an excessive formation of chemically unstable by-products, called free radicals, within the cell. Under normal conditions, the cell is able to destroy the free

radicals. However, when excessive free radicals accumulate, these molecules mount an attack against the cell in search of chemical stability. Free radicals can damage cell membranes, proteins, and genes by oxidation -- the same chemical reaction that causes iron to rust.

The researchers measured levels of isoprostane, the chemical by-product of free radicals attacking fat cells and found that patients with autism possess nearly double the level of oxidative stress than that measured in healthy controls.

The samples from autistic patients also revealed a biochemical imbalance in the patients' blood vessels, resulting in high levels of thromboxane (an indicator of platelet activity) and prostacyclin, an indicator of constricting endothelial cells. During normal function, thromboxane and prostacyclin work together to maintain the integrity of blood vessels. In response to different kinds of stress, platelets release thromboxane, which causes vessels to contract. The endothelium responds to elevated levels of thromboxane by releasing prostacyclin. This event counter-balances the effect on vessels, inducing dilation of the vessel and, in turn, more blood flow.

Autism is a complex neurological disorder and oxidative imbalance is one feature of the autistic syndrome. Several lines of evidence support the hypothesis that oxidative imbalance may play a role in this disease: autism is characterized by an impaired anti-oxidant defence system, higher free-radical production, and improvement of behavioral symptoms after taking anti-oxidants.

In general, it is known that abnormalities in blood vessels can be clinically reflected by an abnormal blood flow. Earlier neuroimaging studies of autistic children have demonstrated a reduced amount of blood reaching the brain. Shedding more light on the relationship of oxidative stress and blood-vessel health to the pathology of autism could lead to improvements in therapy.

Reference: **Altered Vascular Phenotype in Autism: Correlation With Oxidative Stress** Yuemang Yao; William J. Walsh; Woody R. McGinnis; Domenico Praticò
Arch Neurol. 2006;63:1161-1164.

Dr William Walsh
will be a keynote speaker at
The ARMS Global Autism Conference
at
Brisbane Technology Park
Conference Centre
6 & 7 October 2006

Full details available at
www.abiq.org/events/2006conference/seminar
See below for abstracts of Dr Walsh's papers

The Biochemistry of Autism Spectrum Disorders

Dr William Walsh

Address to be given at ARMS Global Autism Conference, Brisbane, 7 October 2006

Abstract

The mystery of autism is gradually yielding to scientific study, and the etiology of this terrible disorder is coming into clear view. There is little doubt that there is a powerful genetic component to autism spectrum disorders (ASD) since the concordance for identical twins is between 60-80%. However, the fact that concordance is not 100% for monozygotic twins implies that environment must also be decisive in ASD disorders. Due to the dramatic increase in autism incidence throughout the world, many persons have asked, "How can there be an epidemic of a genetic condition? The answer seems quite clear: There must have been a worsening in one or more environmental insults that predispose to autism.

The Pfeiffer Treatment Center has amassed an autism database of more than 600,000 assays of biochemical factors that involve more than 5,000 ASD subjects. This appears to be the World's largest chemistry database for ASD, and it has yielded important insights into the nature of this condition. In 1999, we reported that a great majority of ASD patients exhibited under-methylation. Subsequent studies have shown that many ASD patients have a severe metal metabolism disorder, depressed levels of metallothionein, glutathione, and selenium, a pyrrole disorder, and overload of mercury, lead, cadmium, and other toxics. These biochemical conditions appear to be the cause of (a) intolerance to gluten and casein, (b) yeast overgrowth, (c) incompetent intestinal and brain barriers, (d) weak immune function, etc.

Many novel treatments have been developed over the past 20 years to cope with these abnormalities, and there are many thousands of ASD children have received great benefits. This presentation will summarize the benefits and limitations of chelation therapies.

The common deficits in cognition, speech and socialization appear to involve incomplete brain maturation, and a new focus is developing with respect to treatments that promote development of new brain cells and synaptic connections. In addition there are disturbing reports that indicate that autism may be neurodegenerative in nature, and that untreated oxidative stresses can result in gradual loss of brain cells and mental retardation. In addition, two recent studies have indicated that

male autism and female autism may be completely different disorders with different genetic origins and separate brain biochemistry. This implies that the ideal therapies for male & female ASD patients may be quite different. A summary of recent research advances will be presented.

Oxidative Stress and Autism: A Roadmap for Effective Treatment

Dr. William Walsh

Keynote address to be given at
The ARMS Global Autism Conference,
Brisbane, 6 October 2006

Abstract

Recent research has shown that oxidative stress is a dominant factor in autism-spectrum disorders (ASD). There are many different genetic defects that can predispose a child to ASD by weakened protection against oxidative stress, rendering the brain vulnerable to toxic metals, viruses and other environmental insults. The net result can be destruction of brain cells, incomplete maturation of the brain, and onset of autism. The harmful effects of oxidative stress on brain development, methylation, sulfur chemistry, the G.I. tract, protein digestion and immune function will be discussed.

In year 2000, the Pfeiffer Treatment Center (PTC) discovered that diminished metallothionein protein (MT) activity is a distinctive feature of autism. This abnormality is associated with severe oxidative stress, impaired brain development, and extreme sensitivity to toxic metals and other environmental substances. PTC has developed a MT-Promotion therapy that is used in conjunction with special diets and other biochemical treatments. Our best clinical outcomes have been achieved using a two-phase protocol: (1) preloading with Zn and augmenting nutrients, followed by (2) cautious, gradual introduction of MT promotion formulations.

New research findings at PTC include (a) increased oxidative damage to vascular tissue, (b) depressed metallothionein in red blood cells, and (c) abnormal hormone chemistry. In collaboration with Argonne National Laboratory and the University of Maryland, we have obtained the world's first direct measurements of mercury, copper, lead, selenium and 10 other elements in brain tissues from autistics and controls. The results provide strong evidence of abnormal metal metabolism in autism. Advanced therapies for eliminating toxic metals, healing the blood/brain and intestinal barriers, and enhancing development of new brain cells and synapses will be presented, along with an oxidative stress model of autism.

Pfeiffer Sydney Outreach 2007

16th – 24th April

Medical Practitioner Training Program & Patient Assessments

If you are interested in the Pfeiffer Sydney Outreach 2007 training program or in seeking a patient assessment, please contact

Marion Redstone
Pfeiffer Sydney Outreach Organizer

02 9716 6615

The Critical Role of Nutrients in Severe Mental Symptoms

by William Walsh, Ph.D.
Senior Scientist,
Health Research Institute and [Pfeiffer Treatment Center](#)

Each of us has innate biochemical factors that influence mental health, immune function, allergic tendencies, and more. Scientists tell us that the number of different genetic combinations possible in a child from the same two parents exceeds forty-two million. It's interesting to note that we do not possess a combination of characteristics from our parents, but instead have a diverse collection of characteristics from many ancestors on both sides of the family.

Except for identical twins, each human being has unique biochemistry resulting in quite diverse nutritional needs. Shakespeare was correct when he wrote, "One man's meat is another man's poison." For example, some of us are genetically suited for a vegetable-based diet and others are not. Some people can satisfy their nutritional needs by diet alone and others must have nutritional supplements to overcome genetic aberrations.

Because of genetic differences in the way our bodies process foods, most of us are quite deficient in certain nutrients and overloaded in others. Even with an ideal diet, most of us have certain nutrients that are at very low levels causing us to require

many times the RDA (Recommended Daily Allowance) to achieve a healthy balance.

The nutrients in overload must be carefully avoided in vitamin supplements or serious health problems can develop. After studying the biochemistry of 10,000 persons, I've learned that the greatest mischief is usually caused by nutrients that are stored in excessive amounts, rather than those at depleted levels. The most common nutrients that are stored in overload include copper, iron, folic acid, calcium, methionine¹, manganese, choline², and omega-6 fatty acids³. Of course, these same nutrients may be in deficiency in other persons. [Note: Some technical terms are explained at the end of this article.]

I am amused by supplement manufacturers who attempt to develop the ideal combination of vitamins, minerals and amino acids for the general population. This is a bit like trying to determine the ideal shoe size for the population. The truth is that multiple vitamins and minerals are too indiscriminate and may do as much harm as good.

Each of us should ask the question, "Who am I nutritionally?" The answer to this question is important for all, but may be especially critical for persons with mental health problems.

Nutrients and Mental Health

As we enter the new millennium, the medical and scientific communities agree on the tremendous influence of neurotransmitters⁴ on behavior disorders, "ADHD" (Attention Deficit Hyperactivity Disorder), depression, and "schizophrenia." People can have a predisposition for these problems due to genetically aberrant levels of specific neurotransmitters. Our mental health is dependent upon having the proper amount of these critical brain chemicals.

Some psychiatrists express their scorn for nutrient therapies, claiming that they are too puny to have any real clinical potency. They often say, "You really need a drug to get the job done for a serious condition like depression."

My favourite response begins by asking the question, "Where do our neurotransmitters come from?"

The brain is a chemical factory that produces serotonin, dopamine, norepinephrine⁵, and other brain chemicals 24 hours a day. The only raw materials for their syntheses are nutrients, namely, amino acids, vitamins, minerals, etc. If the brain receives improper amounts of these nutrient building blocks, we can expect serious problems with our neurotransmitters.

For example, some depression patients have a genetic pyrrole disorder which renders them grossly depleted in vitamin B-6. A pyrrole is a basic chemical structure that is used in the formation of heme, which makes blood red. Pyrroles bind with B₆ and then with zinc, thus depleting these nutrients. These individuals cannot efficiently create serotonin (a neurotransmitter) since B-6 is an important factor in the last step of its synthesis.

Many of these persons appear to benefit from Prozac, Paxil, Zoloft, or other serotonin-enhancing medications. However, as with all mind-altering drugs, side effects occur and the true cause of the mental difficulties remains uncorrected. Similar – and more healthful – benefits can be achieved by simply giving these patients sufficient amounts of B-6 along with supporting nutrients.

Most neurotransmitter problems appear to be genetic in nature and involve abnormal absorption, metabolism, or storage of key nutrients. As neuroscience advances, biochemical treatments to correct brain chemistry become better defined. Nutrient therapy can be very potent and does not involve side effects, since no molecules foreign to the body are needed. This therapeutic approach may eventually eliminate the need for most psychiatric medications.

Biochemical Factors in Behaviour Disorders, "ADHD," and "Mental Illness"

The Pfeiffer Treatment Center has amassed a large database of biochemical information from more than 10,000 patients with mental health problems. Examination of this data shows that most of these persons have striking abnormalities in specific nutrients required for neurotransmitter production. The most common chemical imbalances we encounter include the following:

Over-methylation

Many persons who suffer from anxiety along with depression are over-methylated. Methyl is an important chemical group consisting of one carbon and three hydrogen atoms (CH₃). Over-methylation (too many added methyl groups) results in excessive levels of the neurotransmitters dopamine, norepinephrine, and serotonin. Typical symptoms include chemical and food sensitivities, underachievement, upper body pain, and an adverse reaction to serotonin-enhancing substances such as Prozac, Paxil, Zoloft, St. John's Wort, and SAME⁶. They have a physical tendency to be very depressed in folates (a form of folic acid), niacin and Vitamin B-12, and biochemical treatment focuses on supplementation of these nutrients. These persons are also overloaded in copper and methionine (a sulfur-containing amino acid) and supplements of these nutrients must be strictly avoided.

Under-methylation

Many patients with obsessive-compulsive tendencies, "oppositional-defiant disorder⁷," or seasonal depression are under-methylated, which is associated with low serotonin levels. They generally exhibit seasonal allergies and other distinctive symptoms and traits. They have a tendency to be very depressed in calcium, magnesium, methionine, and vitamin B-6 with excessive levels of folic acid. These under-methylated persons can have a positive effect from Paxil, Zoloft, and other serotonin-enhancing medications, although nasty side effects are common. A more natural approach is to directly correct the underlying problem using methionine, calcium, magnesium, and B-6. SAME, St. John's Wort, Kava Kava, and inositol (a natural sugar alcohol) are also very useful in treating these individuals.

Metal-metabolism

A common problem in "ADHD," behaviour disorders, and hormonal depression is a physical inability to control copper, zinc, manganese, and other trace metals in the body due to improper functioning of metallothionein – a small protein synthesized in the liver and kidney in response to the presence of some metal ions⁸, including zinc, mercury, cadmium, and copper. It binds the metal ions tightly and is important both in ion transport and in detoxification.

These patients are often deficient in zinc and manganese, the amino acids cysteine and serine, and vitamin B-6. They are commonly overloaded in copper, lead, and cadmium. They must avoid supplements and "enriched foods" containing copper. In addition we recommend they drink bottled water and limit use of swimming pools and jacuzzis treated with copper sulfate anti-algae agents. Foods to be limited due to high copper content include shellfish, chocolate, and carob.

Elevated copper levels are associated with hormonal imbalances and a classic symptom is intolerance to estrogen. Biochemical treatment focuses on stimulation of metallothionein using zinc, manganese, cysteine, serine, and vitamin B-6.

Pyrrole disorder

A common feature of many behavioural and emotional disorders is pyrroluria, detectable as a purple (on testing paper) metabolite in urine called "the mauve factor." Pyrroluria is an inborn error of pyrrole chemistry, which results in a dramatic deficiency of zinc, vitamin B-6, and arachidonic acid (an omega-6 fatty acid). As noted earlier, certain pyrroles called kryptopyrroles (literally, "hidden pyrroles") bind with B-6, then zinc to

deplete the body's supply. Common symptoms include explosive temper, mood swings, poor short-term memory, and frequent infections. These patients are easily identified by their inability to tan, poor dream recall, abnormal fat distribution, and sensitivity to light and sound. The decisive laboratory test is analysis for kryptopyrroles (the "mauve factor") in urine. Treatment centers on zinc and B-6 supplements together with omega-6 essential fatty acids.

Glucose dyscontrol

Our database indicates a significant number of our patients have chronic low blood glucose levels. This problem doesn't appear to be the cause of behaviour disorders, depression, etc., but instead is an aggravating factor that can trigger striking symptoms. Typical symptoms include drowsiness after meals, irritability, craving for sweets, trembling, anxiety, and intermittent poor concentration and focus. Treatment includes chromium, manganese, and other glucose-stabilizing nutrients, but the primary focus of treatment is on diet. These patients benefit from six or more small meals daily with emphasis on complex carbohydrates and protein. In essence, they cannot tolerate large meals or quick sugars. Complex carbohydrates provide the necessary glucose in a slow, gradual manner and may be thought of as "time-released" sugar.

Toxic substances

Occasionally we encounter a patient whose condition has resulted from a heavy-metal overload (lead, cadmium, mercury, etc.) or toxic levels of pesticides or other organic chemicals. Our database indicates that persons with a metallothionein disorder are especially sensitive to toxic metals and that over-methylation is associated with severe chemical sensitivities. Effective treatment requires a three-part approach: (1) avoidance of additional exposures, (2) biochemical treatment to hasten the exit of the toxic substance from the body, and (3) correction of underlying chemical imbalances to minimize future vulnerability to the toxic material.

Malabsorption

Although only 10% of our database case histories involve serious malabsorption, more than 90% of autistics exhibit this problem. There are three primary classes of absorption problems: (1) stomach problems, including excessive or insufficient HCl (hydrochloric acid) levels, (2) incomplete digestion in the small intestine, and (3) problems at the brush-border, the tiny villi⁹ that tremendously increase the surface area of the intestine, where most nutrients are absorbed into to the blood stream. The consequences can include nutrient deficiencies, irritation of the intestinal tract,

candida, and mental health problems. Incomplete breakdown of protein and fats can adversely affect brain neurotransmission, and is associated with impulsivity and academic underachievement. Treatment depends on the type of malabsorption present and may involve adjustment of stomach HCl levels, digestive enzymes that survive stomach acid, nutrients to enhance digestion, and special diets.

Essential Fatty Acids

The brain is 20% fat (by dry weight) and these fatty substances fulfil very important functions. The myelin sheaths, which surround our brain cells, contain essential fatty acids that are directly involved in nerve receptor formation and nerve transmission. A 1998 Symposium at the National Institute of Mental Health presented strong evidence of the important roles for omega-3 oils (especially EPA and DHA¹⁰) and omega-6 oils (especially AA and DGLA¹¹) in "ADHD," depression, and "schizophrenia." A recent Harvard study showed EPA and DHA supplements to be more effective than psychiatric medications in combating "bipolar depression."

Typical American diets usually result in insufficient omega-3 and excessive omega-6 and some nutritionists routinely recommend supplements of omega-3 oils. However, biochemical individuality also exists with oils and certain persons are innately low in omega-6 oils. A review of symptoms and specialized plasma and red-cell-membrane lab tests can identify individual needs.

Summary

Nutrients play a critical role in mental health. They are the building blocks of the nervous system. Correct testing and understanding of deficiencies and overloads can pinpoint the causes of many severe mental symptoms, thus opening the door to hope and recovery.

Footnotes:

1. Methionine is an amino acid you need that you can only get from food or supplements.
2. Choline is part of the vitamin B complex family.
3. Fatty acids are the building blocks of fats. The tail end of the fatty acid molecule is called the "omega." Some fatty acids have two carbon atoms together located 6 atoms from the end. These are called omega-6 fatty acids. Omega-3 fatty acids have double carbon atoms at 3 from the end.
4. Chemicals that transfer messages from one nerve cell to the other.
5. Serotonin, dopamine, and norepinephrine are all neurotransmitters.
6. S-Adenosyl Methionine. It is a supplement and a chemical produced in the brain from the amino acid methionine. In one chemical process, S-Adenosyl Methionine adds methyl groups, thus would be harmful to people already over-methylated.
7. A psychiatric diagnosis for a pattern of negativistic, hostile, and defiant behaviour lasting at least 6 months.
8. An ion is a negatively charged atom or group of atoms. They

tend to want to combine with other atoms or groups of atoms.

9. Villi are minute, finger-like projections that give the small intestine lining a velvet-like appearance. They absorb nutrients.

10. There are 3 kinds of omega-3 fatty acids. Two of them are EPA and DHA, which are found in fish oil.

11. There are 3 kinds of omega-6 fatty acids. Two of them are AA (arachidonic acid, mentioned earlier in this article) and DGLA.

Twelve Months with Pfeiffer

Dr Richard Stuckey, who practices at the Border Medical Clinic, Coolangatta, Queensland was the first Australian medical practitioner to be trained in Pfeiffer assessment and complementary nutritional treatment techniques when Dr William Walsh, founder and Chief Scientist at Health Research Institute & Pfeiffer Treatment Center, Chicago USA visited Australia in April 2004 under Bio-Balance Health auspices.

In February 2006, Dr Stuckey gave an address titled *12 Months with Pfeiffer* at the BioConcepts International Mental Health Conference in Sydney. His address detailed the impact that the introduction of the Pfeiffer Treatment Center's protocols for the management of mental and behavioural disorders has had on a standard general medical practice. He outlined the different types of biochemical imbalance, the clinical and biochemical patterns involved and the nutritional protocols relevant to each type.

Dr Stuckey reported the results of a 12-month follow-up study of 80 consecutive cases treated during the first year of incorporating Pfeiffer treatment techniques in his practice, indicating that, of the 57.5% of patients who completed the treatment program to one year, 93% showed significant improvement. He presented 14 illustrative cases from this sample, some of which are reproduced below (pages 8 - 9) for information.

The PowerPoint presentation of Dr Stuckey's address was included in Bio-Balance Health Association's submission to the recent Senate Select Committee on Mental Health inquiry.

The full presentation is available on the Internet as Submission 378B, Attachment 1 at

www.aph.gov.au/Senate/committee/mentalhealth_cte/submissions/sublist.htm

It will also be available in the near future on the Bio-Balance website currently in preparation.

CASE STUDIES

CASE HISTORY 2: Schizophrenia

Characteristics

- Male, age 28.
- Multiple hospitalizations over past 6 years
- Had not worked for 6 years
- Floridly psychotic at time of consultation
- Clinical characteristics: over-methylation
- Biochemistry: over-methylation

Progress

12 months later:

- Feels generally healthy and stable
- Almost nil delusions and paranoia
- Not hospitalised during the year
- Better quality of life
- Commenced paid computer instruction work
- Would also like to work with schizophrenia support groups

CASE HISTORY 3: Depression

Characteristics

- Female, age 41
- High achiever at school and at ballet – pushed hard by father
- Severe depression commenced when touring with ballet company at age 20 – depressed ever since
- Two failed marriages
- Frequent suicide ideation, 3 suicide attempts, best friend suicided
- Regular hospital admissions, having weekly ECT prior to consultation
- Clinical characteristics: under-methylation
- Biochemistry: over-methylation

Progress

6 months later:

- Moderate dyspepsia with supplements so dose reduced
- Prescription medication unchanged
- Days more even
- No hospital, no ECT
- Not “down” as much

12 months later:

- No hospital admissions, no ECT
- Reduced prescription and nutritional doses
- Resumed painting and has had a number of public showings

CASE HISTORY 8: Anxiety

Characteristics

- Male, age 7
- Generalised anxiety with extreme separation anxiety at school
- Biochemistry: under-methylation

Progress

12 months later:

- Steady improvement throughout year
- Attending school with nil separation difficulty
- Socialising normally

CASE HISTORY 10: Anxiety

Characteristics

- Male, age 62
- Highly successful and wealthy business man
- Many years has been anxious and “over-reactionary”
- Biochemistry: Zinc deplete

Progress

12 months later:

- Less anxious
- Less reactionary
- “Best he has felt for years”

CASE HISTORY 11: OCD

Characteristics

- Female, age 42
- Obsessive-Compulsive Disorder (OCD) last 10 years, developed during abusive first marriage
- Reclusive
- 12 hours personal and house cleaning a day
- Hours spent under the shower
- Frequent headaches
- Attendance at the consultation a major effort
- Biochemistry: Pyrroluria

Progress

- Rapid improvement initially, steady improvement over the year

12 months later:

- House cleaning 2 hours, 2 days per week
- Self hygiene and showering like a normal person
- Socialises normally, shops as others would and leads a normal life
- Reluctant to phase out the anafranil as she is doing so well
- Feels she has OCD beaten
- Husband’s comment: “Thank you for giving me my wife back.”

CASE HISTORY 12: Bipolar Affective Disorder

Characteristics

- Male, age 22
- Anxiety, depression, mania for last 4 years
- Four hospitalisations during this time
- Not worked or studied for 4 years
- Erratic bowel motions for many years
- Biochemistry: under-methylation

Progress

- Rapid clinical response to gluten withdrawal
- Steady improvement over 12 months

12 months later:

- Feeling well
- Doing more
- More confidence
- No “highs”
- No hospitalisations
- Resuming fine arts study at university in 2006

CASE HISTORY 14: Autism

Characteristics

- Male, 4 years
- At start mute, irritable, unable to remain in consulting room
- Obsessive behaviour
- Grossly abnormal bowel motions
- Biochemistry: normal methylation, Pyrroluria

Progress

4 months later:

- Counting to 20 repetitively. Shut door of consulting room

8 months later:

- Said "Good morning Dr Stuckey"

12 months later:

- Bowels normal, toilet trained, saying 4+ word sentences, markedly better receptive language

CASE HISTORY 6: Aggression

Characteristics

- Male, 11 years
- Expelled from 3 schools – daily fights and bullying
- Poor attention, poor academic performance
- Had insight into his behaviour but could not explain his outbursts
- Clinical characteristics: Pyrroluria
- Biochemistry: Under-methylation

Progress

4 months later:

- No fights
- Walked away from confrontation
- Less victimization by teachers
- Grades improved from C/D to B/A
- Showed affection to mother

12 months later:

- Normal child
- Above average scholar
- Nil aggression
- Supplement dose reduced
- Clinical improvement maintained

Oxidative Stress and Antioxidants

What Are Antioxidants?

As the name implies, antioxidants are substances that are capable of counteracting the damaging, but normal, effects of the physiological process of **oxidation** in animal tissue. Antioxidants are **nutrients** (vitamins and minerals) as well as **enzymes** (proteins in your body that assist in chemical reactions). They are believed to play a role in preventing the development of such chronic diseases as [cancer](#), [heart disease](#), [stroke](#), [Alzheimer's disease](#), [Rheumatoid arthritis](#), and [cataracts](#).

Oxidative stress occurs when the production of harmful molecules called **free radicals** is beyond the protective capability of the antioxidant defences. Free radicals are chemically active

[atoms](#) or molecular fragments that have a charge due to an excess or deficient number of electrons. Examples of free radicals are the superoxide anion, hydroxyl radical, transition metals such as iron and copper, nitric acid, and ozone. Free radicals containing oxygen, known as **reactive oxygen species** (ROS), are the most biologically significant free radicals. ROS include the radicals superoxide and hydroxyl radical, plus derivatives of oxygen that do not contain unpaired electrons, such as hydrogen peroxide, singlet oxygen, and hypochlorous acid.

Because they have one or more unpaired electrons, free radicals are highly unstable. They scavenge your body to grab or donate electrons, thereby damaging [cells](#), proteins, and DNA (genetic material). The same oxidative process also causes oils to become rancid, peeled apples to turn brown, and iron to rust.

It is impossible for us to avoid damage by free radicals. Free radicals arise from sources both inside (endogenous) and outside (exogenous) our bodies. Oxidants that develop from processes within our bodies form as a result of normal [aerobic respiration](#), metabolism, and inflammation. Exogenous free radicals form from environmental factors such as [pollution](#), [sunlight](#), [strenuous exercise](#), [X-rays](#), [smoking](#) and [alcohol](#). Our antioxidant systems are not perfect, so as we age, cell parts damaged by oxidation accumulate.

The Antioxidant Process

Antioxidants block the process of oxidation by **neutralizing** free radicals. In doing so, the antioxidants themselves become oxidized. That is why there is a constant need to replenish our antioxidant resources.

How they work can be classified in one of two ways:

- **Chain-breaking** - When a free radical releases or steals an electron, a second radical is formed. This molecule then turns around and does the same thing to a third molecule, continuing to generate more unstable products. The process continues until termination occurs -- either the radical is stabilized by a chain-breaking antioxidant such as beta-carotene and vitamins C and E, or it simply decays into a harmless product.
- **Preventive** - Antioxidant enzymes like superoxide dismutase, catalase and glutathione peroxidase prevent oxidation by reducing the rate of chain initiation. That is, by scavenging initiating radicals, such antioxidants can thwart an oxidation chain from ever setting in motion. They can also prevent oxidation by stabilizing transition metal radicals such as copper and iron.

The effectiveness of any given antioxidant in the body depends on which free radical is involved, how and where it is generated, and where the target of damage is. Thus, while in one particular system an antioxidant may protect against free radicals, in other systems it could have no effect at all. Or, in certain circumstances, an antioxidant may even act as a "**pro-oxidant**" that generates toxic oxygen species.

Types of Antioxidants

Antioxidant Nutrients

Antioxidants from our diet appear to be of great importance in controlling damage by free radicals. Each nutrient is unique in terms of its structure and antioxidant function.

Vitamin E is actually a generic term that refers to all entities (eight found so far) that exhibit biological activity of the isomer tocopherol (an isomer is one of two or more molecules that have the same chemical formula but different atomic arrangements). Alpha-tocopherol, the most widely available isomer, has the highest bio-potency, or strongest effect in the body. Because it is fat-soluble (and can *only* dissolve in [fats](#)), alpha-tocopherol is in a unique position to safeguard cell membranes -- largely composed of fatty acids -- from damage by free radicals. Alpha-tocopherol also protects the fats in low-density lipoproteins (LDLs, or the "bad" cholesterol) from oxidation.

Vitamin C, also known as ascorbic acid, is a water-soluble vitamin. As such, it scavenges free radicals that are in an aqueous (watery) environment, such as inside your cells. Vitamin C works synergistically with vitamin E to quench free radicals. Vitamin C also regenerates the reduced (stable) form of vitamin E.

Beta-carotene, also a water-soluble vitamin, is the most widely studied of the 600 carotenoids identified to date. It is thought to be the best quencher of singlet oxygen (an energized but uncharged form of oxygen that is toxic to cells). Beta-carotene is also especially excellent at scavenging free radicals in low oxygen concentration.

Selenium is a trace element. It is a mineral that we need to consume in only very small quantities, but without which we could not survive. It forms the active site of several antioxidant enzymes including glutathione peroxidase.

Similar to selenium, the minerals **manganese** and **zinc** are trace elements that form an essential part of various antioxidant enzymes.

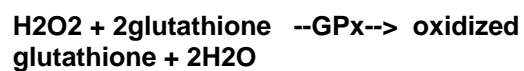
Antioxidant Enzymes

The antioxidant enzymes **superoxide dismutase** (SOD), **catalase** (CAT) and **glutathione peroxidase** (GPx) serve as your primary line of defence in destroying free radicals.

SOD first reduces (adds an electron to) the radical superoxide (O₂⁻) to form hydrogen peroxide (H₂O₂) and oxygen (O₂).



Catalase and GPx then work simultaneously with the protein glutathione to reduce hydrogen peroxide and ultimately produce water (H₂O).



(The oxidized glutathione is then reduced by another antioxidant enzyme -- glutathione reductase.)

Together, they repair oxidized DNA, degrade oxidized protein, and destroy oxidized lipids (fat-like substances that are a constituent of cell membranes). Various other enzymes act as a secondary antioxidant defence mechanism to protect you from further damage.

Other Antioxidants

In addition to enzymes, vitamins, and minerals, there appear to be many other nutrients and compounds that have antioxidant properties. Among them is **coenzyme Q10** (CoQ10, or ubiquinone), which is essential to energy production and can also protect the body from destructive free radicals. Also, **uric acid**, a product of DNA metabolism, has become increasingly recognized as an important antioxidant. Additionally, substances in plants called **phytochemicals** are being investigated for their antioxidant activity and health-promoting potential.



**Bio-Balance Health Association Inc.
Application Form for Membership**

Bio-Balance Background – Brief Overview

Since its formation the Bio-Balance Health Association has moved to establish a means to treat patients suffering from behavioural disorders and mental illnesses such as schizophrenia and bi-polar disorder, depression, autism, ADD/ADHD and learning disorders based on technologies developed by the Health Research Institute-Pfeiffer Treatment Center (HIR-PTC).

HRI-PTC Research Center and outpatient treatment clinic in Chicago, Illinois, USA since 1989 has demonstrated a high level of effectiveness in treating these disorders by assessing each patient’s body chemistry imbalances and prescribing an individualised nutritional supplement program to balance the body chemistry.

Bio-Balance’s efforts resulted in Dr. William Walsh PhD – Chief Scientist and Director of HIR-PTC visiting Australia in 2004 and again in 2005 and 2006 to train some Australian medical practitioners and to address public and practitioner meetings in Sydney, Brisbane and on the Gold Coast. Further visits are planned.

Further details on HRI-PTC and Dr. William Walsh PhD can be found on their website at www.hriptc.org

Membership of Bio-Balance gives you:

- Information on forthcoming visits to Australia by Dr. Walsh and the HRI-PTC Outreach Clinic
- A Newsletter keeping members up to date on items of interest
- An internet chat/messaging site where you can talk to other members
- A range of library books
- Links to web sites of interest

Annual membership is \$5 including GST for 12 months and all member information is strictly confidential.

For further information please contact Bio-Balance on
 Phone 0755 387203
 Fax 0755 384599
 Email biobalance@optusnet.com.au

Or write to
 Bio-Balance Health Association Inc
 Po Box 7795
 Gold Coast Mail Centre Qld 4217 Australia

	<p>MEMBERSHIP APPLICATION FORM Bio-Balance Health Association Inc To join or renew your Bio-Balance Association Membership Please return completed form to: Po Box 7795 Gold Coast Mail Centre, Qld, 4217</p>
<p>Annual membership fee: \$5.00 incl GST</p>	<p>New Membership <input type="checkbox"/></p> <p>Renewal <input type="checkbox"/></p>
<p>Date:.....</p>	
<p>Name:</p>	
<p>Address:.....</p>	
<p>.....State.....P/Code.....</p>	
<p>Phone.....Fax.....email.....</p>	
<p>Membership Fee Enclosed</p>	<p>\$.....</p>
<p>Donation</p>	<p>\$.....</p>
<p>Total</p>	<p>\$.....</p>
<p>Donations of \$2 and over are tax deductible</p>	