

● Research

Nutrient therapy for mental illness

The science of epigenetics may hold the key to our understanding of mental illness and behavioural disorders, **Dr Bill Walsh** tells **Aoife Connors**



Dr Bill Walsh

"I'm so excited about epigenetics," Dr Bill Walsh told *Irish Medical Times*, ahead of his visit to Trinity College last week (17 July) for a conference on 'Nutrient Therapy Protocols for Mental and Behavioural Disorders'. Dr Walsh was set to address the Dublin Outreach Conference, focusing on the emerging science of epigenetics. In 2008, this chemical engineer founded the Walsh Research Institute in Naperville, Illinois, which is organised exclusively for research, educational and charitable purposes.

"This is the most exciting thing that's happened [in medicine] in 40 years. It appears many of the diseases we thought were genetic are actually epigenetic," he said. "Epigenetics has the advantage that it can lead to therapies that can reverse what genes are doing."

This scientific field, explained Dr Walsh, is the study of inherited changes in phenotype (appearance) or gene expression, caused by mechanisms other than changes in the underlying DNA sequence. Epigenetics "provides a roadmap to more effective therapies for mental

and behavioural disorders, because the primary method for helping these kinds of problems over the last 30 to 40 years has been psychiatric medications".

"I think our next step will be to use our knowledge of molecular biology and brain chemistry to find ways to directly correct neurotransmitter and receptor problems," he said. "We're getting closer to understanding exactly what goes wrong and reversing how this occurs. If you look at the science of epigenetics for various disorders, methylation appears to be the most powerful factor in epigenetics and genes expression." Methylation contributing to epigenetic inheritance can occur through either DNA methylation or protein methylation.

Cure for all cancers

Epigenetics is also on the threshold of revealing why people develop certain cancers, said Dr Walsh: "We know in many cancers that numerous suppression genes are shut off, but this is just the beginning. I think we're very close to a cure for all cancers."

The scientist says he has treated some 25,000 people with mental and behavioural disorders in Australia, New Zealand, the US and Europe, accumulating a significant database with biochemical information on people with mental and behavioural disorders. In 1982, he founded the Health Research Institute in Warrenville, Illinois and in 1989 set up the associated Pfeiffer Treatment Center (HRI-PTC) there, where he was president until 1998. Following this, he became HRI-PTC Director of Research until June

2008, when he established the Walsh Research Institute. Dr Walsh has since concentrated on research and practitioner training in advanced nutrient therapy methods to treat mental and behavioural disorders.

He firmly believes nutrient therapy can be the key to treating such disorders. "There's a belief that you need a powerful drug to treat a problem like schizophrenia, a chronic mental-health condition or bipolar disorder. But I think a lot of doctors have forgotten what they learnt in medical school – where do our neurotransmitters come from and then what controls them? What factors affect neurotransmitter uptake and the process of synapse?"

"When you dig into the molecular biology of this, you find nutrient factors are extremely important. If a person had a genetic disorder that caused them to be very deficient in vitamin B6, well, this is the major core factor in the production of serotonin. So if a person has a major B6 deficiency, you can be sure they'll be low in serotonin and will suffer from depression, or at least have a tendency for it."

The solution could be to prescribe fluoxetine, or selective serotonin reuptake inhibitor medication, to help with the side effects. "But it seems a lot more scientific, if a person is depressed, to simply normalise their B6 levels. If you do a complete metabolic analysis of any human, you'll find they'll probably be low in five or six important nutrient factors because of genetics and epigenetics. If you could identify those, the person may benefit from many times the RDA of those nutrients, be-

cause they're fighting genetics," Dr Walsh explained.

The treatment weapons he uses are amino acids, fatty acids, vitamins and minerals, focusing on the nutrients that have a powerful impact on the synthesis of neurotransmitters or what happens when an electrical impulse crosses the synapse, he explained.

Prison study

Over 30 years ago, Dr Walsh studied a Chicago prison population while the offenders integrated back into society. Doing chemical analysis of blood, urine and tissue samples, Dr Walsh and his team found most of the prisoners had major deficiencies in copper, zinc and manganese levels. "There are about 35 different metals in the body. As a group, the offenders had very abnormal metal metabolism. We found many different forms of behavioural disorders, but the anti-social personality group had a distinct pattern." The study showed each of the offenders had high blood histamine, zinc deficiency and were under-methylated: an abnormal combination of chemical imbalances. The offenders needed nutritional therapy, not medication.

Another study looked at more than 10,000 adults and children with severe behavioural problems. People with obsessive-compulsive disorder, oppositional-defiant disorder or seasonal depression had completely different chemistry. "They fit into very different classifications: not only are their biochemistries uniquely different, but also their symptoms and traits are very different."

People with these conditions tend to be under-methylated – low in serotonin levels, calcium, magnesium, methionine and vitamin B6. "We found a lot of the children studied had attention deficit hyperactivity disorder (ADHD) or insulin deficiency. Families reported that not only did the children's behaviour improve, but their school work got dramatically better when nutritional therapy commenced."

He has conducted many studies on the relationship between biochemical therapy and behavioural outcomes. In 1989, Dr Walsh opened a clinic to treat behavioural disorders, ADHD and later schizophrenia. In ten years, this has become the largest clinic of its type, having treated over 35,000 patients. "We had the highest population of autistic patients, so we did a combination of scientific research and clinical protocols aimed at normalising the nutrient factors that impact on brain chemistry. Our clinical goal with a patient was to normalise their blood levels and their brain-chemical levels."

"It seems to work very well for certain populations, but unfortunately we failed to help children with Down's syndrome because they had particularly unusual brain and body chemistry. We did a careful study of Down's kids and found the treatment didn't help. But every time we've done an outcome study on behaviour, depression, eating disorders, autism or schizophrenia, we got positive results on the individual's behaviour and the family reports."

Methylation

Dr Walsh has studied the methylation status of over 25,000 people with various mental and behavioural disorders. He believes that methylation has a

powerful impact on epigenetics. "If a person is over-methylated or under-methylated, it affects which genes are turned on and off. This has a lot to do with production of proteins within the brain and body and where that has gone wrong."

"In early foetus development, a number of decisions are made and these get 'book-marked'," he explained. "Some genes are turned on in certain tissues, while others are turned off. Although a natural process, for some people, things can go wrong and people can end up with a pre-disposition for depression, a mental illness or behavioural disorder."

Many of these conditions have perplexed scientists for years, because illnesses like depression run in families. "The problem is these illnesses violate the classic laws of genetics. I think we now have the answers because it's really epigenetic and not genetic. The conditions don't involve changes in the DNA, but the changes involved are alterations or modifications – or errors, you might say – in gene expression," he explained.

Dr Walsh hoped that his presentation at the Dublin conference would succeed in its aim of getting ten to 20 Irish doctors interested in nutrient therapy. "We're hoping to start a week-long Walsh Outreach Training Programme for doctors and medical practitioners in Ireland. This would be similar to the existing Australian scheme, where we now have more qualified physicians in nutritional therapy than anywhere else in the world."

Dr Walsh has also expanded his therapy training programme to Norway and is currently working on establishing the programme in the Philippines.

● Foster care

HSE fostering services 'appalling'

The Health Information and Quality Authority (HIQA) has called for the Board of the Health Services Executive (HSE) to appoint a National Director with accountability and authority for the provision of safe and high quality services for children in care, writes Aoife Connors.

The Authority wants the HSE to develop a national register of all foster carers and all children in their care, and a similar register of allegations made by foster children against their carers.

The recommendations came as HIQA published three reports last week (July 14) on the inspection of the HSE foster-

ing service in three HSE areas – Dublin North Central, Dublin North West and Dublin North.

The reports state that each foster carer should have an assigned 'link social worker' on behalf of the Executive to support and supervise the carer.

The social worker would be expected to meet the foster carer and the children under their care on a regular basis, ensuring that the carer had access to information, advice and professional support so as to provide high quality care and meet HSE policies.

Findings from the inspection of Dublin North West services showed that the Executive only partly met national stand-

ards. Of the 248 foster carers, only 193 were assigned a social worker and 55 were not supervised by any social worker.

In Dublin North Central, of the 215 foster carers, 93 were assigned a social worker but 122 remained unsupervised with no social worker assigned. In contrast, Dublin North ensured 101 of the 107 children in foster care had a social worker and all children had a social worker at the second stage of inspection.

Immediate concerns

HIQA found the HSE fostering service in Dublin North was well managed. However, **Dr Tracey Cooper**, HIQA's CEO,

said: "We had immediate concerns in the Dublin North West and Dublin North Central areas, having found that many children were being cared for by carers who had not been appropriately vetted and many children did not have a social worker for significant periods of time, sometimes years."

Dr Cooper said that in Dublin North West and Dublin North Central, both of which she said were "poorly managed", there was evidence of non-compliance with the child care regulations and a lack of recognition at senior management level that the child care regulations exist to safeguard and protect vulnerable children.



Dr Tracey Cooper, HIQA CEO

She described the Dublin North West and Dublin North Central fostering services as "appalling" and as the worst that the Authority had seen in the country. "The fact that

these shortcomings have been known for a number of years and were still present in 2009 and 2010, outline serious deficiencies in the effectiveness of the accountability, governance and management of these services, and the lack of emphasis on a child-centred culture at all levels of the HSE," added Dr Cooper.

Within the next three weeks, the HSE must provide an updated action plan that will outline its actions to meet all recommendations made in the three HIQA reports. The Authority is expected to publish the findings, following HSE actions taken, during the final quarter of 2010.