



## **This Issue in the Journal**

### **Seasonal variation in vitamin D levels in the Canterbury, New Zealand population in relation to available UV radiation**

*John Livesey, Peter Elder, M Jane Ellis, Richard McKenzie, Ben Liley, Chris Florkowski*

We measured blood vitamin D levels in volunteers and patients in Canterbury (119 females, 82 males; median age 45 years, range 18 to 83) and found that most people are vitamin D deficient most of the time when compared to the latest international recommendations, particularly in late winter and early spring. We then used mathematical modelling to predict the daily amount of vitamin D supplementation required to correct this deficiency and found that about 2600 international units per day is needed. This is well above current New Zealand guidelines of 1600 international units per day and suggests that the widespread consumption of relatively high prescription strength doses of vitamin D is likely to be needed to ensure the optimal health of the Canterbury population by reducing the incidence of chronic diseases such as fractures in older people, cancer, and muscle weakness.

### **Vitamin D and muscle strength in patients with previous fractures**

*Charles A Inderjeeth, Denise Glennon, Anthony Petta, Jessamine Soderstrom, Irene Boyatzis, Jeffrey Tapper*

Vitamin D deficiency is a common and important problem in older people and it is an important factor in osteoporosis. Vitamin D deficiency may also be an important cause of poor muscle strength and falls, especially in the elderly. Our study at a hospital in Western Australia studied vitamin D levels and leg muscle strength in 99 women aged over 60 and found that low vitamin D levels were associated with poor leg muscle strength. Correcting Vitamin D deficiency may be important in reducing fracture through both reducing osteoporosis and reducing falls through improved muscle strength.

### **The failure to diagnose inborn errors of metabolism in New Zealand: the case for expanded newborn screening**

*Callum Wilson, Nicola J Kerruish, Bridget Wilcken, Esko Wiltshire, Dianne Webster*

Inborn errors of metabolism refer to a group of rare genetic chemical disorders. Children with these conditions often present with serious symptoms such as coma. However because these symptoms are usually due to other more common conditions clinicians may not investigate the patient for an underlying metabolic disorder. This is unfortunate as treatment (if commenced very early) dramatically improves the outcome. This paper reports the findings of a nationwide 3-year surveillance study that shows that these disorders have been under diagnosed in recent years in New Zealand. A small number of children are likely to have died yearly as a result.

The recent introduction of expanded newborn screening, a process whereby key chemicals are measured in the neonatal Guthrie card blood test prior to the child becoming sick, will hopefully improve this situation. The paper further discusses this new form of screening, its advantages and limitations.

### **Phenylketonuria—the lived experience**

*Nicole Frank, Ruth Fitzgerald, Michael Legge*

This research is based on interviews with eight people who live with phenylketonuria (PKU) in New Zealand. PKU is a severe genetic disorder affecting the body's ability to produce certain proteins which help to break down food into its constituent components. It is treated by following a very strict diet which must begin at birth and be followed for life. People who live with the disease describe the effect of it as turning them into expert negotiators in the medical, social, and personal spheres of their lives. They recount the consistent juggling of the risk of their unknown futures with the conflicting demands for expressing affection and pleasure through shared eating with family and friends versus the need to adhere very strictly to their diets to try to retain their health and mental facilities.

### **Glycaemic control and antibody status among Waikato, New Zealand patients with newly diagnosed Type 1 diabetes**

*Doron Hickey, Grace Joshy, Peter Dunn, David Simmons, Ross Lawrenson*

Type 1 diabetes is categorised as either being positive or negative for various auto-antibodies related to pancreatic function. It has not been established whether the actual titres of anti-GAD or anti-IA2 antibodies at diagnosis have prognostic implications, although the presence of anti-GAD is believed to be indicative of beta-cell destruction. Our study did not show any statistically significant associations between antibody status and subsequent hospital admission for diabetic ketoacidosis. But a positive anti-IA2 status was associated with better glycaemic control (HbA1c < 10%). If there is evidence of antibodies to IA2 present then this is a predictor of better glycaemic control and it may be that these patients will have less complications than those who are anti-IA2 negative. We believe this is the first time this finding has been reported.