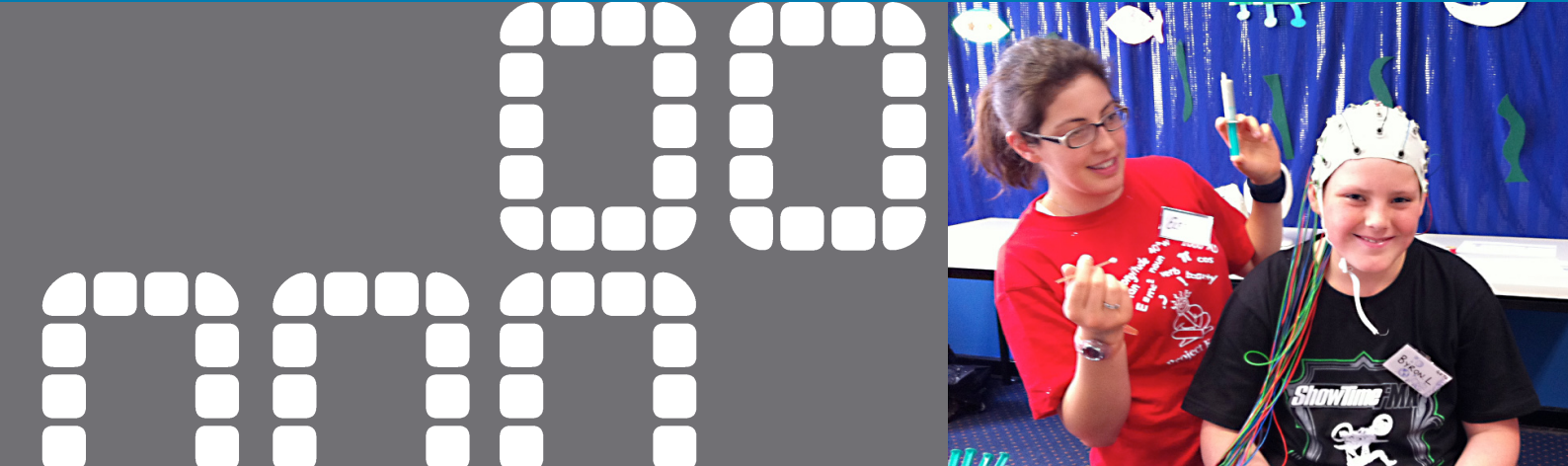




Autumn 2012

Newsletter of the Department of Endocrinology & Diabetes



Getting to see your brain waves at Project KIDS.

FAMILY INFORMATION SEMINAR 2012 – SAVE THE DATE!

The team at PMH invite you and your family along to listen to some great topics at the family diabetes information seminar. There will also be an opportunity to share ideas and ask questions.

This is a **free** event, however bookings are essential. Refreshments will be provided.

Venue and Date

**Tuesday
1 May 2012**

7pm — 9pm
PMH, MacDonald
Lecture theatre

For further information or to book please contact Diabetes WA on 9436 6298.

PROJECT KIDS TYPE 1 DIABETES STUDY – ASSESSING COGNITIVE OUTCOMES OF CHILDREN WITH TYPE 1 DIABETES

The Endocrinology and Diabetes team at Princess Margaret Hospital and the Project KIDS team at the University of Western Australia, School of Psychology, are conducting a study looking at the cognitive development of children with type 1 diabetes. Project KIDS is a child development study that explores how children think, feel, act and learn. In the past 17 years more than 2500 children have attended Project KIDS holiday activity programs.

Why are we doing the study?

Some studies have indicated subtle differences in performance, on a number of tests measuring brain function, between children with type 1 diabetes and children without type 1 diabetes. Furthermore, there is some suggestion that these differences may be due to the occurrence of symptoms associated with severe hypoglycaemia or very low blood glucose levels.

How can you get involved?

To be a part of this study children will attend for two consecutive days and participate in a range of cognitive activities including computer tasks, word games and puzzles as well as ball games and other fun activities! So come along and join the fun.

We will also be carrying out two other tests including magnetic resonance imaging (MRI) and the electroencephalogram (EEG).

- The MRI will take images (scans) of your child's brain using the body's own magnetic field. MRI scans are safe and non-invasive and do not expose your child to radiation.
- The EEG examines your child's brain activity while he/she performs a simple task. This is a non-invasive method of recording brain activity using sensors placed on a head cap. Con'd on page 2.

...continued from page 1.

We have a number of upcoming projects in the **April, July and October** school holidays.

- We looking for children between **7 and 11** years who have been diagnosed with type 1 diabetes for more than 6 months or
- Children aged **7 – 11** years with a sibling with type 1 diabetes (but who don't have diabetes themselves)

If you would like any more information about this study, please contact the study coordinator, **Kaitie McNamara** on 6488 7342 (Tue,Thu) or 9340 7856 (Mon, Wed & Fri) or by email at kaitrin.mcnamara@uwa.edu.au.



Making space slime!

at school

“TYPE 1 DIABETES & SCHOOL - FINDING THE BALANCE”

Do you have a child in your class or school with diabetes?
Would you like to increase your understanding and knowledge of diabetes management in schools?

The following are seminar dates for 2012 from 1:30 – 3:30 at PMH:
Monday 28th May 2012
Wednesday 22nd August 2012

Where: [Macdonald Lecture Theatre](#)

The following are teleconference dates for 2012 from 1:30 – 3:00:

Friday 10th August 2012
Friday 2nd November 2012

For more information contact
telehealth.caahs@health.wa.gov.au.

For further information, contact the PMH Diabetes Clinic on 9340 8090
Please R.S.V.P. online at www.pmh.health.wa.gov.au/services/endocrinology/seminarto to confirm your attendance.

“INSULIN PUMPERS AT SCHOOL – A BETTER UNDERSTANDING

Do you have a child in your class who uses an insulin pump to manage their diabetes?
Would you like to increase your understanding and knowledge of insulin pump management in schools?

The following are seminar dates for 2012 from 1.30 – 3.30 at PMH:
Friday 18th May 2012
Friday 3rd August 2012

Where: [PMH](#)

The following are teleconference dates for 2012 from 1.30 – 3.00:

Friday 27th July 2012
Monday 5th November 2012

For more information contact telehealth.caahs@health.wa.gov.au.

bike ride

TYPE 2 EXERCISE STUDY IS UNDERWAY

The first term of the Type 2 Exercise Intervention study has successfully been completed, with 3 adolescents completing the three-month, thrice-weekly exercise program at the end of last year.

The study involves a 12 week exercise program including free gym membership for a year and a full medical check-up for each participant. Scans are carried out to measure the body's fat and muscle composition. Ultrasound scans and microvascular testing also investigates the health of the participant's blood vessels. Finally, the study measures the body's insulin sensitivity. All testing is done before starting and on finishing the program as well as six weeks after completion.

The exercise program consists of a combination of machine weights, treadmill, and bike exercises. Term 1 was well-attended with positive feedback from participants. Even after completing the study two participants are continuing to use the gym as they feel they have benefited from the program. Term 2 of the Type 2 Exercise Intervention study is currently underway, with 9 participants training at UWA, Armadale and Rockingham.

Recruitment is continuing. Although only participants with Type 2 Diabetes are currently participating, obese and normal-weight adolescents will soon be asked to participate as well. The training is conducted at UWA, Armadale, and Rockingham but may be delivered in other regions if enough participants from those areas are recruited.

If you have type 2 diabetes, and are interested in receiving more information about the study, please contact Louise Naylor at louise.naylor@uwa.edu.au or Rachelle Kalic at rachelle.kalic@health.wa.gov.au.

JDRF RIDE TO CURE DIABETES 2012

The Juvenile Diabetes Research Foundation's (JDRF) primary goal is to find a cure for Type 1 diabetes. They also want to make life better for people with diabetes. Money raised by the JDRF is used to fund research looking to find that elusive cure and also for new technologies and treatments to prevent complications of diabetes.

Many of you will know about the Walk to Cure Diabetes, held each year in cities across Australia. Well, every January, another event occurs in South Australia. *The Ride to Cure Diabetes* is a challenge of 160, 80 or 35 km bicycle ride through the Barossa Valley.

This year the Ride to Cure Diabetes 2012 had 303 people from across Australia and it raised a whopping \$1.01 m! Mark Shah from the PMH Diabetes Department was there for his 5th ride. W.A was very well represented having 54 people take their bikes across the Nullarbor. Importantly, WA riders alone raised \$210,000.

Some of the important research that occurs within the PMH diabetes unit is funded by JDRF research grants.

<http://www.jdrf.org.au/>

Next year, January 2013, will see the 10th anniversary of *the Ride to Cure Diabetes*. If you are interested email ridesupport@jdrf.org.au or call 1300 363 126

Diabetes WA News

If you have a chance **visit** the **new** **online shop** at: <http://shop.diabeteswa.com.au/> There are some books in stock at the moment that might interest you: *Caring for Diabetes in Children and Adolescents* normally retails for \$26.50 but is being offered for \$16.99.





INSULIN INJECTIONS, WHAT ANGLE DO YOU USE?

Insulin absorption

Everyone who has type 1 diabetes knows the importance of the insulin injection and therefore, would also understand that optimal absorption of insulin is vital. We all know that it's important to rotate the injection site and avoid 'lumpy' areas (lipohypertrophy), because this can affect the absorption of insulin leading to an unnecessary higher insulin dose and erratic blood glucose control.

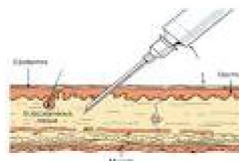
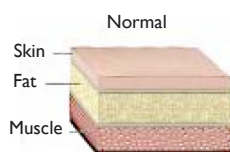
Insulin absorption can also be affected by other things such as whether the injection is given into the subcutaneous tissue (fat) or muscle tissue. Insulin is designed to be injected into the fat tissue and not the muscle, as this can cause more rapid absorption leading to unexplained hypoglycaemia. How do we make sure we inject insulin into the fat tissue?

Needle length and injection technique

Generally, children and adults are taught to inject insulin at a 90° angle to the skin, sometimes including a 'skin fold lift' during the injection. For lean people and children using a longer needle (8mm or 12 mm) an injection given at 90° can lead to insulin injected into the muscle.

It is now recommended that all people (especially children and teenagers) with diabetes who use a 4, 5 or 6 mm needle continue to inject at 90° to the skin. Only insulin pen needles are available in sizes less than 8 mm.

For people using an insulin syringe the shortest needle is 8 mm and in this situation, **it is recommended to inject at a 45° angle.**



insulin



Georgia in action at 2012 Australian Whitewater Championships

Sporting achievements

Georgia Rankin has been selected into the junior whitewater team to represent Australia at the Junior World Championships being held in Wausau, Wisconsin, USA in July this year.



iPHONE AIDS DIABETES MANAGEMENT

More and more patients are using their smart phones to help manage their diabetes! So we decided have a look at some of the apps currently available to help with carbohydrate counting, healthy eating and Glycaemic index (GI).

Carbohydrate Counting

There are lots of apps you can download to help work out the carbohydrates in your food. Some of them are free and others cost a small amount.

Calorieking.

This popular calorie counting tool was originally available as a book and then a website and is now free to download onto your phone.

Calorieking is designed to help people manage their weight but it also provides accurate information on the carbohydrate content of meals.

Some of the things we like about Calorieking are:

- It provides information on carbohydrates in grams per serve
- It's free
- It has a large database of food items
- There is an Australian version available
- It includes fresh foods, packaged food and fast food
- You can put in your actual serve size and don't have to use their suggested serve.



Some disadvantages of Calorieking

- You can't make a list of your favourite food items
- It doesn't calculate the total carbohydrates in a meal, only individual items.

The traffic light guide to food

This app has been designed for people with diabetes to count their carbohydrates and manage their blood glucose levels.

It one of the more expensive apps costing \$9.45, so we have not road tested it but have based this review on the information available on the website and product reviews.

Some of the useful features of this app are:

- It provides information on the amount of carbohydrates in grams, exchanges (15g) and portions (10g).
- You can total up the carbohydrates in your whole meal
- It is easy to search for food items
- You can mark foods as favourites

Some of the disadvantages mentioned in the reviews:

- It includes brands not available in Australia
- It includes only a limited range of foods, although this is currently being extended.

Healthy Eating

There are a number of apps designed to help people make better food choices. These apps examine the nutritional content of the food and provide advice on whether it is a good food choice.

Apps vary on what they analyse but most include some or all of 'total energy', 'fat', 'saturated fat', 'sugar', 'fibre', 'sodium' (salt) content. Information is either based on a serve or per 100g.

FoodSwitch

This new App is endorsed by the Dietitian's Association of Australia (DAA). It is simple to use; just scan the bar code of the product you are thinking of buying.

It analyses the fat, saturated fat, sugar, salt and total energy per 100g and ranks each element using the traffic light system. Red indicates a less healthy choice which should only be eaten occasionally, amber means it is OK but green is best and indicates a healthier choice compared with other foods in the same category; the more green lights the 'healthier' the food.

Another useful feature of this app is it also recommends similar foods that are a better choice.

Advantages of this app

- It is free
- Has a large data base of Australian foods
- Simple ranking system
- Easy to find foods as you only need to scan the bar code
- Ranks per 100g so scores are not influenced by manufactures serve sizes
- Provides healthier alternatives to selected food

Disadvantages include:

- It is only for packaged foods and may promote these over fresh foods.
- Does not consider fibre content of food.

Glycaemic Index (GI)

There are a number of apps that provide information about the Glycaemic index of foods. These vary in cost from 99c to \$10.49.

Most of these apps promote GI as a way of identifying healthy food options, however it is essential to remember that GI is only part of the story and it is important to consider the sugar, fat and fibre content of food when making your choice.

Several of the apps that we looked at (e.g. Low GI Diet Tracker and Diabetic Meal Planner) appear to promote high fat meals as a way of reducing the overall GI of a meal. These apps need to be used with caution.

Let us know which apps you find helpful

We were amazed at the number of apps available to download and could not road test them all for you. If you have a favourite app let us know so we can share it with others.

Please e-mail Rachel.pearce@health.wa.gov.au and include: The apps name and cost (if known), why you like it, what you don't like about it and any overall comments.

i phone

recipe

Great recipes to get in some extra serves of fruit or vegetables.

Tomato and red lentil soup with toast fingers serves 4

Vegetarian and gluten-free (if made with gluten-free bread)

- 1 brown onion
- 1 medium carrot, peeled, chopped
- 1 celery stick, chopped
- 2 garlic cloves, crushed
- ½ cup (60ml) water
- 2 tsp ground cumin
- ½ tsp paprika (optional)
- 400g can diced tomatoes
- 1 tbsp tomato paste
- ½ cup (110g) split red lentils
- 3 cups (750ml) salt-reduced vegetable stock
- fresh ground black pepper, taste
- 4 slices of multigrain or low GI white bread or gluten free low GI bread (toasted)

1. Combine the onion, carrot, celery, garlic and water in a large saucepan. Cover and cook over medium heat, stirring occasionally, for 8-10 minutes or until the onion is soft. Stir in the cumin and paprika (if using) and cook, uncovered, for 1-2 minutes or until the water has evaporated.
2. Add the canned tomatoes, tomato paste, lentils and stock and bring to a simmer. Reduce heat to low, cover partially, and simmer gently, stirring occasionally, for 20 minutes or until the lentils are tender
3. Transfer half the soup mixture to a blender or food processor and blend until smooth. Repeat with remaining mixture, Return the soup to the pan and simmer gently until heated through or until reduced to desired consistency. Taste and season with pepper. Serve accompanied by toast fingers.

Adapted from: The Low GI Family Cookbook by Foster-Powell, Manning, Brand-Miller and Sandall.

Banana Pops

- 300g (10 oz) low-fat passionfruit yoghurt
- 1 large banana, thinly sliced
- 2 passionfruit, pulp removed

1. Half-fill 4 x 1/3 cup (80 mL/2x fl oz) capacity ice block moulds with yoghurt.
2. Put the banana slices and the passionfruit pulp into the yoghurt.
3. Top with the remaining yoghurt.
4. Bang the moulds lightly to remove air bubbles.
5. Insert paddle pop stick.
6. Freeze for at least 4 hours or until set.
7. Rub a warm cloth around the base of each ice block mould and gently twist to release.

Per serve: Carbohydrate 16g, Total Fat < 1g, Fibre 2g, Low GI
Gluten free: Use gluten-free yoghurt

From: Diabetes Kids and Teens food by Melinda Morrison
(Diabetes Australia)



PMH are involved in a collaborative research project with the John Hunter Children's Hospital in Newcastle. The project is entitled "How do high protein and/or high fat meals affect postprandial glycaemic control in children using intensive insulin therapy?"

The purpose of the project is to investigate whether blood glucose levels in children and adolescents using multiple daily injections or an insulin pump are influenced by varying proportions of protein and fat in a meal. Previous research has shown the importance of good blood glucose control after meals, in the prevention of the long term complications of diabetes. Recent studies by our colleague, Mrs Carmel Smart, Senior Diabetes Dietician, from John Hunter Hospital have shown the importance of carbohydrate type (glycaemic index) in terms of blood glucose control after a meal. However, studies of this nature are lacking when it comes to protein and fat content of a meal. We believe that further information in this area would be helpful in making recommendations on insulin dosing depending on the type of meal to be consumed.

If you are interested or would like to discuss the study in more detail, please contact Megan Evans (dietitian) on 9340 7552 or megan.evans@health.wa.gov.au

exercise intensity

EXERCISE INTENSITY STUDY

The Exercise intensity study aims to find out how much glucose is required to prevent hypoglycaemia during and after different intensities of exercise in individuals with type 1 diabetes (T1DM), and under basal (non-meal related) insulin conditions.

Regular physical activity provides physiological and psychological benefits for individuals with T1DM. But exercise can increase the risk of hypoglycaemia, which may discourage many people with T1DM from adopting an active lifestyle and participating in sports and games. The current guidelines for individuals with T1DM, are not always adequate in preventing exercise induced hypoglycaemia. We are trying to assist with improving guidelines by conducting a study to determine more precisely the amount of glucose intake that is required to prevent a hypoglycaemia during and after exercise of various intensities under basal insulin conditions.

For this study we are recruiting healthy adolescents between 13 and 25 years with T1DM, from the general population and from PMH's Diabetes Clinics.

Each participant will visit the diabetes research facility at Princess Margaret Hospital on 5 separate occasions. On the first visit, height and weight will be measured and the participant will be asked to exercise on a stationary bike to determine their level of fitness. Subsequently the participant will return to the hospital on 4 separate days (with at least 1 week interval between study days) for the study. All participants will be asked to fast for the study day. On each of the study days, the participant will exercise for short period and then rest in a comfortable chair for the remainder of the day. When not exercising, participants can entertain themselves by watching light-hearted videos, listening to music, doing some light reading or just chatting with the research staff. During the study blood glucose levels will be kept stable by infusing insulin and glucose. Each study day will involve a different level of exercise on the stationary bike which would be like a brisk walk to a fast run. The study is conducted in PMH and run in collaboration with School of Sport Science, Exercise and Health, University of Western Australia.

If you are interested in this study please contact Dr Vinutha Shetty, email vinutha.shetty@health.wa.gov.au
Tel: 9340 7882/8090

Family sets sail despite setback

by Catherine Botman

WORLD Diabetes Day was celebrated on Monday to highlight the incurable disorder.

The condition affects 7.6 per cent of the Mandurah population or more than 4000 residents and none more so than the Bucktin family.

Chris Bucktin, who was diagnosed with type 1 diabetes when he was three years of age, and his wife Heidi have seen how the disorder affects a family, both having a parent with type 1 diabetes.

Their parents grew up in the pig insulin era where the disorder was a deterrent from normal daily activities.

Now with a better understanding Chris, Heidi and their children Kieran and Drina, who also has type 1 diabetes, have proved people can live their everyday lives despite the disorder.

The family recently sailed from Brisbane to Mandurah onboard their yacht *Bella* with their two dogs Max and Tinka, fulfilling a life-long dream.

"Both Heidi and I have been sailing all our lives and the children are learning to sail already, Kieran sails his own dinghy," Mr Bucktin said.

Their adventure started on April 28 in Scarborough, Queensland, less than an hour north of Brisbane after a lot of planning that included organising school lessons and business commitments.

Only a few days into the journey the boat suffered engine troubles, forcing a five-week stay in Tin Can Bay as the family waited on Volvo engine parts from Sweden.



Getting on with life: Chris, Kieran (holding Max), Drina (with Tinka) and Heidi Bucktin onboard *Bella*. They recently completed a six-month sailing adventure.

Despite the setback they enjoyed the journey.

"Once we would get somewhere, we would go ashore in the dinghy," Mrs Bucktin said.

A stop in Townsville highlighted the need for a better understanding of diabetes.

"When we stopped in Townsville I tried to get some more insulin, even though we had packed enough for the trip, but I wanted to be sure and they said it was a week's wait for insulin to arrive," Mrs Bucktin said.

Both Chris and Drina completed the journey with an insulin pump, which is a small battery operated electronic device about the size of a pager.

It continuously delivers insulin under the skin through a needle that stays in place for up to three days. Pumps are worn 24 hours a day, but can be detached for swimming, showering and other activities.

After a final stop in Darwin for supplies, the family sailed down the rugged WA coastline, arriving in Mandurah on October 16 during the Mandurah Boat Show, ending the six-month

adventure.

Mr Bucktin said the 4700-mile journey was a great way to prove diabetes didn't prevent people from doing anything.

"I have never let diabetes stop me from doing anything, when I was younger I sailed with a Mars Bar attached to the boat just in case," he said.

"There is nothing you can't do, it's just the way you do it."

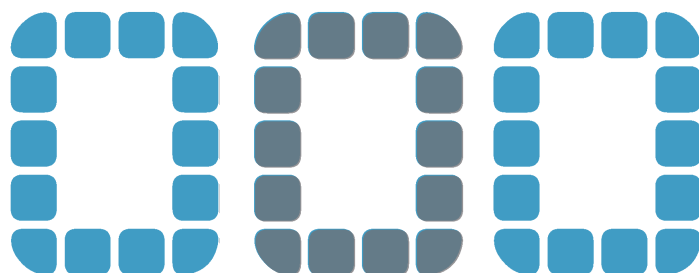
Sandy Havlin from Diabetes WA agreed, saying there was no reason diabetes should affect a person's everyday life.

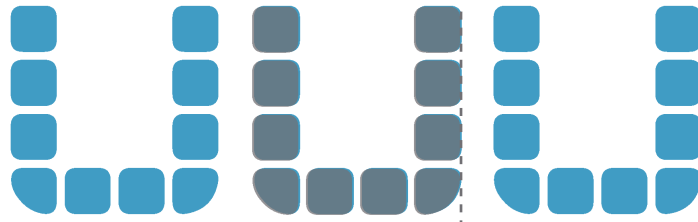
"With insulin and close monitoring of the condition, which includes regular finger pricks, as well as a healthy diet, regular physical activity and stress management, most people with type 1 diabetes can live a long and healthy life," she said.

Type 1 diabetes is a condition thought to be genetic, with multiple insulin injections required every day.

Research has shown the incidence of type 1 diabetes is increasing by three per cent for the last 20 years.

Go to diabetes.wa.com.au for more information.





QUICK SURVEY HOW DO YOU LIKE OUR NEWSLETTER?

We would like to make the PMH Diabetes newsletter as useful and entertaining as possible. Your feedback can assist us with this. If you would like to provide feedback you can answer the following questions and return to us using one of the methods below. Your details remain confidential as you are not required to provide your name.

1. Do you like these newsletters?
2. How do you think they can be improved?
3. Would you like to read the newsletter online or do you prefer the print copy?
4. Are there any new sections you would like to see added ?
5. Do you read the newsletter in the waiting room or do you take it home?
6. Are you a diabetes patient, parent or someone else?
7. Any other comments?

project

Please return

your responses to **a staff member at clinic.**

Responses can also be mailed to:

Madeleine Lowe
Department of Endocrinology
and Diabetes
Princess Margaret Hospital
GPO Box D184
Perth WA 6840

