



Troy Buswell repeat study subject.

## Progress of the Year 40 Busselton Survey – 1000 subjects so far!!

By Clinical Professor Bill Musk and Clinical Associate Professor Alan James, Department of Pulmonary Physiology, Sir Charles Gairdner Hospital; School of Medicine, UWA

The current survey, which aims to determine the prevalence of respiratory, cardiovascular and gastrointestinal diseases and their risk factors in Busselton people, is in full swing.

By Christmas 2005 when we closed for the festive season our hardworking staff of 4 researchers (Mike Hunter, Ryan Fleay, Mandy Tognini and Susan Loermans), 1 survey manager (Elspeth Inglis) and many volunteers (led by our newest life member Val Barrett) had examined over 1000 Busselton people.

All the questionnaires and breathing tests have been checked and the first blood test results have been sent to the participants for their information with advice on seeing their doctors if there appears to be any abnormality. We are hoping to have sufficient funds to do the cholesterol and other lipid measurements early this year. The other tests await funding.

While it is too early to do any statistical analysis it is clear that the information has been collected very carefully as its quality is excellent, according not only to Drs Bill Musk and Alan James who are overseeing the respiratory measurements, but also to the statisticians who are on the look-out for the smallest "glitches". This is the case not only for the standard breathing tests but also for the new tests being used in this survey. "So far, so good", said Dr Musk, "but we can't afford to become complacent about quality".

We have noted that only 10% of all adults currently report smoking cigarettes suggesting that we are looking at a health-conscious population. About 15% of those surveyed so far report having asthma which suggests that the recent upward trend in asthma may be slowing. BUT IT IS EARLY DAYS YET. Only when the numbers

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are larger and full participation of all members of the community who have been randomly selected has been achieved will we know if these levels of smoking and asthma reflect the general population of Busselton.

We are now off to a good start for 2006 with a new researcher joining us, Belinda Purser, who has replaced Mandy who we wish the best in her new job. Over the next eighteen months we will continue to see adults at the survey centre in West Street and children at their schools (the High school is due early in the year). We need to see as many of the selected subjects as possible.

The NH&MRC supports the respiratory component of the Survey (Drs Bill Musk and Alan James), the National Heart Foundation supports the cardiovascular component of the Survey (Associate Professor Joe Hung) and Dr Digby Cullen is responsible for the gastro-intestinal symptom questionnaire. All parties involved are enthusiastically looking forward to having more data to analyse so that we can all learn more about health trends over 40 years and the factors that affect them in Busselton as an example of the larger Australian community.

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Donations are always welcome and will greatly help to establish a local health survey office in Busselton.

All donations of \$2 and over are tax deductible.  
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Enquiries ph: 08 9754 0548  
<http://www.busseltonhealthstudy.com>



# Snoring and Breathing Problems in Sleep are Common in Busselton Adults – more Reasons to Lose Weight and Stop Smoking

By Professor Matthew Knuiiman (UWA School of Population Health) and Clinical Associate Professor Alan James

Snoring and breathing pauses in sleep are a big health issue. They are related to increased sleepiness in the daytime with increased risk of accident while driving or at work and an increased risk of high blood pressure.

Professor Matt Knuiiman and Dr Alan James from the Busselton Health Studies have recently published a report of an analysis of the 1995 study of all previous attendees of Busselton Health Surveys\*. It showed that 25% are habitual snorers (snore often or always) and 10% have been told that they stop breathing or hold their breath (occasionally or more frequently) for short periods when they are asleep.

The problems occurred in both men and women but were more common in men and were more likely as people got older. This is shown in figures 1 and 2. Both snoring and breathing pauses during sleep were related to increased body weight and to smoking.

Interestingly, subjects were more likely to be habitual snorers if the increased body weight was distributed more around the waist or neck, compared with a more general or lower body distribution.

People with respiratory symptoms were also more prone to snoring (if they had asthma) or breathing problems during sleep (if they reported cough). The relation of these sleep related problems to respiratory symptoms may be due to effects of respiratory illness on the upper airway but needs to be studied further. The current survey will ask children and adults about snoring and breathing problems in sleep to see if these common problems are changing in the Busselton community.

Some of the associations reported in this study have been observed previously in Busselton and other populations. Dr



Left to right: MacKillop's Nicole Croxford with Susan Loermans.

Stewart Cullen, sleep physician and son of the Busselton study founder Kevin Cullen, measured breathing problems in Busselton snorers in 1991. "These results agree with our earlier findings and show that the problem remains widespread and associated with reversible risk factors", he said. "I'm pleased these results have come out and look forward with a great deal of enthusiasm to seeing what the current survey reveals about this serious public health problem", said Dr Cullen.

In the meantime it's time to shed weight and avoid smoking.

\*The published article appears in the Australian and New Zealand Journal of Public Health 2005, volume 29, page 412.

Figure 1. Prevalence of habitual snoring by gender and age group: Busselton, Western Australia, 1994-5.

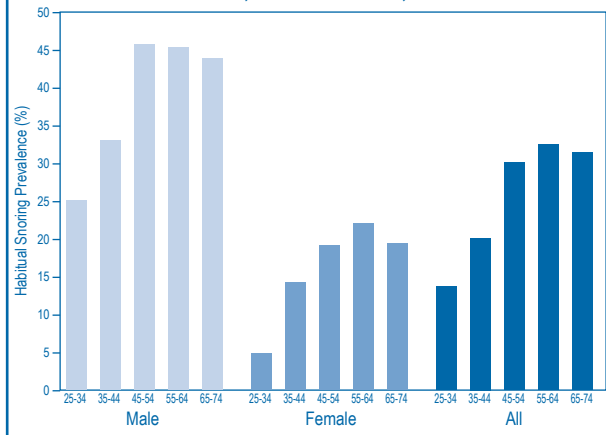
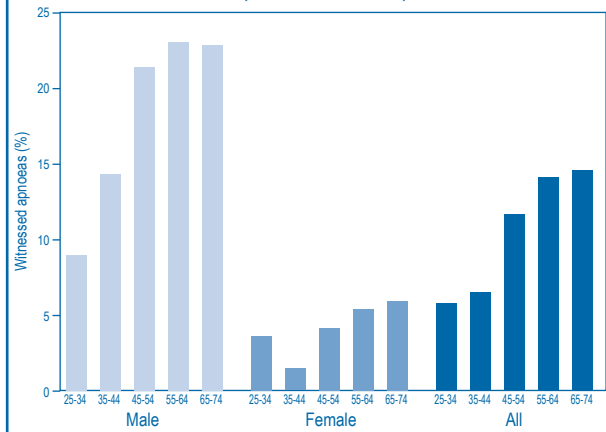


Figure 2. Prevalence of witnessed apnoeas by gender and age group: Busselton, Western Australia, 1994-5.



## Thyroid disease in Busselton

**Clinical Associate Professor John Walsh, Department of Endocrinology and Diabetes, Sir Charles Gairdner Hospital; School of Medicine and Pharmacology, UWA; and Dr Peter O'Leary, Genomics Directorate, Health Department of WA**

Thyroid disease is common in the community, and is most commonly caused by autoimmune disease, meaning that the body's immune system either attacks and destroys the thyroid gland (making it underactive), or switches it on inappropriately (making it overactive). The first study of the frequency of thyroid disease in the Busselton population was published in *The Lancet* 1980, based on blood samples collected in the 1969 and 1975 surveys.

Techniques for detecting thyroid disease have improved enormously since then, and we felt it was timely to revisit the issue of how common thyroid disease is in Australia and how it should be diagnosed.

In 2001, we measured thyroid hormone levels and thyroid antibodies on 2115 blood samples which had been stored from the 1981 survey. The tests were carried out in collaboration with BioMediq DPC, who have been strong supporters of the study. The results were recently published in the journal *Clinical Endocrinology*. We found that thyroid disease was common in the Busselton community: thyroid underactivity affected nearly 6% of the population whereas overactivity affected 0.6% of participants.

Thyroid antibodies (which identify people at risk of thyroid disease) were even more common, being present in 12% of participants. The study is the only community-based study of thyroid disease to be carried out using modern laboratory techniques.

Up till now, it has been uncertain whether mild underactivity of the thyroid (called subclinical hypothyroidism) is a risk factor for heart disease. Using the Busselton record linkage system, we found that people who had mild thyroid underactivity in the 1981 Busselton survey had nearly twice the risk of developing heart disease over the subsequent 20 years.

Our study provides the strongest evidence so far for a link between subclinical hypothyroidism and heart disease, and was published in the prestigious international journal *Archives of Internal Medicine*.

In other studies we have examined whether subclinical hypothyroidism causes increased blood cholesterol levels (it does), and whether having had children increases the risk of thyroid disease in women (it doesn't). We are currently completing a study looking at the effects of mild thyroid disease on blood pressure.

These studies have made a major contribution to the understanding of thyroid disease. We are proud to have revitalised thyroid research in the Busselton Health Study after only a 25 year gap!

## Possible Role for Folate in Cancer Prevention

**Associate Professor Joseph Hung, UWA School of Medicine and Pharmacology; Dept of Cardiovascular Medicine, Sir Charles Gairdner Hospital**

Folate is a water-soluble B vitamin that occurs naturally in many foods, including dry beans, peas, and leafy green vegetables, such as spinach. Folic acid is the synthetic form of folate that is found in supplements and added to fortified foods, such as many breakfast cereals and milk products.

Folate is needed to make and repair DNA, the building blocks of cells. This is especially important during periods of rapid cell division and growth such as infancy and pregnancy. It has long been known that folate can help prevent certain spinal cord birth defects, which is why it is recommended as a supplement in women of child-bearing age. It can also prevent changes to DNA that may lead to cancer. Investigating the role of folate in cancer prevention is currently an important area of research.

The 1969 Busselton Population Health Survey has contributed to this important investigation and the results were recently published in the *Annals of Epidemiology*. In brief, 964 men and 1024 women who participated in the 1969 Busselton Health survey had their baseline blood folate levels measured to see if they were related to subsequent development of cancer after nearly 30 years of follow-up. The study showed that persons whose blood folate levels were in the bottom compared to the top quarter of the population had an overall increased risk of death from any cancer. The increased risk of cancer events related primarily to prostate cancer in men and breast cancer in women.

This study along with others adds some weight to the theory that high amounts of folate in the diet may help prevent cancer. However, properly designed folate intervention trials are still necessary. Also the best way for men and women to get this folate is still a subject of debate. Until the benefit of taking vitamin supplements is proven, the best advice for the general public is to raise folate consumption by increased intake of fruits, leafy green vegetables, and fortified grains and cereals. Apart from folate, a variety of phytochemicals carotenoids, and antioxidants found in natural foods may also be important in cancer prevention.



Left to right: Health Study height measurement training with volunteers Dorothy Makinson, Sandra Rains and Val Barrett.



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## Genes, Human Health and the Busselton Survey

By David Ravine

Although it has long been known that our family history is an important predictor of our future health, researchers involved in the Busselton Health Survey have only recently begun to examine the role that genes can play in the development of common illnesses. This is a key development for the Busselton Survey because the addition of gene-based research to the earlier strong research focus on finding the environmental causes of common illnesses is likely to teach us much more about the important things that allow us to remain healthy and well.

Already, we are beginning to understand some new things about the large number of interactions between our genes and the environment we live and work in. Although mention of genetic science causes some people to think of serious genetic conditions such as Huntington's diseases or hereditary cancer, it is fortunate that these conditions are very rare. Instead of these rare "single gene disorders", the genes that are of much greater importance to the Busselton Survey are the numerous genes that each contribute only a small amount to the development of common conditions such as asthma, blood pressure or cholesterol levels. Discovery of these genes is going to give us general, yet important information about raised or even reduced risks of illness in the future.

Although it is known that genes play a role in many common illnesses, very few have been pinpointed so far and, for those few that have been found, their role in causing disease is still poorly understood. For example, although the Busselton Genetic Iron Study showed that people with a particular gene variant have a raised risk of clinical disease (called haemochromatosis), it is still not possible to predict from the gene findings who will go onto develop serious iron overload that will need treatment.

The introduction of gene studies into the Busselton Survey is in its early days. However, they are an exciting addition to the Survey, which promises to teach us a great deal more about the factors essential for long-term health, particularly now that we can begin to study the nature of the finely-tuned balance between our genes and the environment we live in.



Left to right: Volunteer Peter Coates, Action Group member Dick Adams and local Study Coordinator Elspeth Inglis.



Left to right: Research Assistants Susan Loermans, Ryan Fleay and Michael Hunter.

## A Big "Thank You" to Busselton from the Research Staff and Volunteers

By Busselton Research Staff Michael Hunter, Ryan Fleay and Susan Loermans

Being part of one of the largest and longest running population health surveys in the world (40 years young and still going!) continues to be a fantastic experience for all the staff and volunteers involved in the Busselton study.

The current team of friendly research assistants Mike, Ryan, Susan and Belinda, survey manager Elspeth and the many volunteers, led by Val (who so generously give up their time to lend a hand) have enjoyed meeting the participants who have taken part so far. Many of those we have seen are familiar faces having attended many of the previous surveys and it's terrific to also now see their children and even their children's children taking part. For other participants who are newer arrivals to the region, participating in the health survey is a new experience and one that we hope will become an ongoing community tradition. We thank you all for being part of this important and world-renowned survey.

We all look forward to meeting each of the further 3500 participants invited to attend over the coming months. As many previous attendees can attest, taking part in the survey is not only an excellent opportunity for a free personal health check, but it is also satisfying to know your participation is contributing vital knowledge about the community's health now and for the future. It is also good to know you are in excellent hands during your visit. Each of the highly trained research assistants are science graduates and while enjoying the jetty, wineries and beautiful beaches which have been pleasant 'perks' of relocating to the region, meeting the locals and guiding them through the tests continues to be a highlight for the research staff.

We get a real thrill in seeing people taking an active interest in their health. So when we ask you to huff and puff and blow out as hard as you can during some of the tests, remember it is with your health and well-being we have in mind!



## Fundraising events for 2006

### Bush Poets & Yarn Spinners Bash 2006

The second Bush Poets and Yarn Spinners Bash, held on Sunday Feb 12 2006, was an outstanding success on all accounts.

With fine weather and a cool breeze the 150 strong crowd kicked back for the afternoon either in the main barn or under the shade of the trees and enjoyed the constant stream of performances. The wonderful line-up of talented bush comedians generated much laughter and applause from a very appreciative crowd, creating a great atmosphere in a relaxed setting for young and old!

With the support of the SWDC events grant, which was presented by Adele Farina MLC on the day, this small charity event raised in excess of \$3,000 in profits through ticket sales, raffle, Cullen magnum auction and cake stall. More importantly it raised the awareness of the Busselton Health Study and the ongoing need for community participation and financial support.

The event's success was made possible through the efforts and support of many people and businesses including event grant funding from the South West Development Commission.

### Langton's Great Wine Estates Auction Boosts Study Funding

Voyager Estate hosted the Langton's Great Wine Estates of Western Australia Auction V on Saturday November 12, 2005. Twelve Imperials were generously donated as Charity Lots for the Busselton Population Medical Research Foundation by the participating wineries and each bottle decorated by a local artist.

The 2005 collection of imperials from invited producers Cape Mentelle, Cullen, Devil's Lair, Houghton, Howard Park, Leeuwin Estate, Moss Wood, Pierro, Plantagenet, Vasse Felix, Voyager Estate and Xanadu raised more than \$30,000 at auction for the Foundation.

### Busselton Health Study Charity Golf Day 2006

Thanks to the overwhelming sponsorship from local businesses and the support of the 32 golfers and the 20 extra dinner guests the inaugural Busselton Health Study Charity Golf Day at Dunsborough Lakes Resort Golf Course raised over \$7,500!

Although the event only secured 8 teams in its first year this is a great result and organisers were thrilled with the positive feedback received from all those that participated. From the 18-hole quiz to the awesome prizes and superb cuisine - it was hailed a great success. Congratulations to the local Aspen Group team who won the event by 1/4 of a stroke!

The perpetual trophy will be engraved with the team name and put on display at the Dunsborough Lakes Golf Clubrooms to encourage a greater challenge on the course next year!



Event caterer, Steve Reagan of Newtown House took a swing for the cause but couldn't catch Team Aspen Group who took out the inaugural competition. (Photo courtesy of the BMR Times)

### Gala Charity Dinner and Auction

The inaugural Charity Dinner Dance and Auction held in November 2004 at the Geographe Bayview Resort was attended by 175 people and raised nearly \$30,000.

The next gala evening is set for Saturday September 9, 2006 at the UWA Club in Nedlands and it is hoped that by holding the event alternatively between Perth and Busselton it will help raise the profile beyond the local community and encourage greater financial support from the Perth medical industry.

The three course meal will again be complimented with the delightful range of Cullen wines and the auction will be hosted by the very entertaining auctioneer Neil Earl. Auction pieces will include exquisite jewellery by Nina's, artwork and prized collectable wines.

If you would like to attend or sponsor any of the Busselton Health Study fundraising events please contact Natalie Venosi 9756 8523. For updates please log onto <http://www.busseltonhealthstudy.com>



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