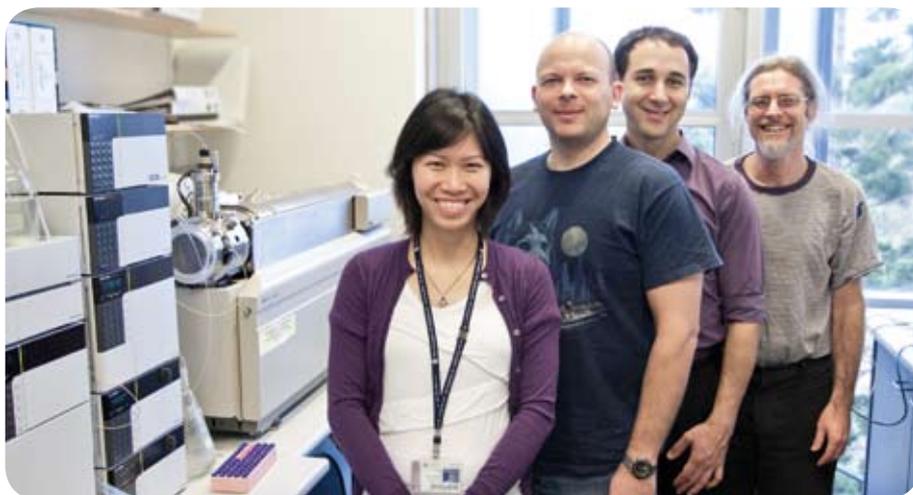


Ground-breaking technique could shed light on the health benefits of vitamin D



Associate Professor Darryl Eyles from the University of Queensland has developed a test to measure the vitamin D concentration in spots of dried blood. This technique has allowed Health 2020 researchers to study whether the amount of vitamin D in someone's blood affects their risk of developing cancer, diabetes and heart disease.



Assoc Prof Eyles and his team from the University of Queensland, pose alongside the AB Sciex tandem mass spectrometer. Standing (L to R) Pauline Ko, Henry Simila, David Kvaskoff and Darryl Eyles. Photo Dee McGrath.

Vitamin D is a hormone essential for healthy bones and avoiding osteoporosis. It may also reduce the risk of common diseases such as diabetes, heart disease and certain types of cancer.

Most vitamin D is made in our skin when we are in the sunlight. Ultraviolet B (UVB), which is thought to be the part of sunlight that causes skin cancer, also produces vitamin D. As excessive sunlight exposure is the cause of Australia's high rates of skin cancer, it is important to know about any potential benefits of vitamin D.

Most of the research on vitamin D and outcomes such as cancer and diabetes has been carried out in North America and Europe, where

levels of UVB in sunlight are lower. It isn't clear how relevant this research is to Australia; Health 2020 is one of a few studies that may be able to shed light on this.

When you joined the study, you donated a small amount of blood. We have been using this blood for various studies and unfortunately stores are now running out. Luckily at the time some of this blood was spotted onto cards (Guthrie cards) and this dried blood was saved for future research.

Excitingly Assoc Prof Eyles has developed an innovative method allowing us to measure the concentration of vitamin D in these dried blood spots, instead of using whole blood as previously required.

We are now working with Assoc Prof Eyles and his team to examine whether vitamin D protects against diabetes, heart disease and different types of cancer. The measurement of vitamin D is carried out using a highly sensitive system (liquid chromatography-tandem mass spectrometry), as shown in the picture opposite.

We selected samples from 6500 participants for this study, which included people who:

- had been diagnosed with breast, bowel or prostate cancer; or
- had diabetes; or
- had died.

A random sample of all Health 2020 participants was also selected. We are now in the process of sending these blood spots to Queensland for testing.

Before sending, we give each spot a unique number so the Queensland team cannot identify anyone. When the results are returned, we match them back to our main identification numbers to perform the analysis.

This NHMRC funded study brings together prominent researchers in the fields of epidemiology (Prof Dallas English and Dr Laura Baglietto), endocrinology (Prof Peter Ebeling) and neuroscience (Assoc Prof Darryl Eyles). The study is expected to be completed in 2013.

More support for a Mediterranean diet



Recent findings from a Health 2020 study¹ support recommendations for the consumption of a Mediterranean style diet to help protect against chronic diseases such as heart disease and diabetes.



Researchers have already shown that following a traditional Mediterranean diet is associated with a reduced risk of developing and dying from a range of conditions, including cardiovascular disease² (CVD). CVD refers to conditions affecting the heart and blood vessels, such as heart attack and stroke.

We also know that having diabetes significantly increases someone's chance of developing CVD. Yet compared to people born in Australia,

A typical Mediterranean diet consists of:

- plenty of fruit, vegetables, fish, whole grains, olive oil and legumes;
- few meat and dairy products; and
- moderate amounts of alcohol.

Please note that alcohol has been increasingly associated with a raised risk of cancer. To reduce your risk of cancer you should limit your intake to no more than 2 standard drinks per day.

migrants from southern Europe (mainly Greece and Italy), appear more likely to have diabetes and less likely to have CVD.

Health 2020 was able to investigate this further with 25% of our study made up of Greek and Italian migrants. We examined whether a Mediterranean diet was associated with fewer deaths from CVD and other causes in people with diabetes; previous research had not considered people with diabetes.

We calculated a Mediterranean Diet Score based on how closely participants followed a typical Mediterranean diet. The scale ranged from poor adherence (0) to maximal adherence (9).

The score was calculated from answers to the Food Frequency Questionnaire everyone completed

at the start of Health 2020. Results from 40,470 people remained after incomplete data were removed. Factors such as smoking, previous illness and family history were also controlled for.

Our results confirmed that people with diabetes were more likely to die from CVD than those with normal blood glucose levels. Notably a higher Mediterranean Diet Score was associated with a lower chance of dying for everyone, including people with diabetes.

We concluded that the consumption of a traditional Mediterranean diet could help explain the fewer than expected deaths from CVD that has been observed in southern European migrants with diabetes.

“There’s a good case for recommending a Mediterranean style diet for all, including people with type 2 diabetes.”

Dr Allison Hodge, Health 2020 researcher

1. Hodge, A.M., et al. Does a Mediterranean diet reduce the mortality risk associated with diabetes: Evidence from the Melbourne Collaborative Cohort Study. *Nutr Metab Cardiovasc Dis*, 2011. 21(9): p. 733–9.

2. Sofi, F., et al. Accruing evidence on benefits of adherence to the Mediterranean diet on health: an updated systematic review and meta-analysis. *Am J Clin Nutr*, 2010. 92(5): p. 1189–96.

Study update and thank you!



Study Coordinator Belal Khan would like to thank everyone who has taken the time to visit the Western Hospital in the last 2 years to participate in his study investigating the effects of calcium intake on heart and bone health.

Since January 2010 over 300 people have visited the clinic to complete scans, x-rays, blood tests and questionnaires. The research is in its

final stages and is planned to finish in early 2012. Watch for the results in next year's newsletter.

“Without the generous support of Health 2020 volunteers this study would not have been possible.”

Belal Khan, Study Coordinator

Hope for those with Forgotten Cancers



The Cancer Epidemiology Centre, which runs the Health 2020 program, recently launched another large-scale study which focuses on the causes of less commonly occurring cancers.

Over the past 2 to 3 decades, extensive research has been conducted on common cancers, increasing our understanding of their causes and improving survival rates. New statistics show that over half of all cancer deaths in Victoria are from less common cancers. The Cancer Epidemiology Centre is developing a major new study to investigate these cancers.

Around 30,000 people will be able to volunteer for the Forgotten Cancers Project. The aims of the study are to:

- understand the causes of less common and/or under-researched cancers;
- establish ways to detect these cancers earlier; and
- develop prevention campaigns to reduce people's risk.

Invited to participate in the study are Australians over 18 years of age, who have been diagnosed with one or more of the 15 targeted cancers: non-Hodgkin lymphoma, leukaemia, multiple myeloma, kidney, bladder, stomach, brain, liver, oesophagus, pancreas, uterus, thyroid, gallbladder, small intestine and bone cancer.

Participants will be asked to complete a questionnaire about topics such as lifestyle factors, family history of cancer and medical history. They will also be asked to give DNA from either saliva or blood samples.

Cancer Epidemiology Centre Deputy Director, Associate Professor Gianluca Severi, encourages people who have been diagnosed with one or more of these cancers to participate.

“Due to the very low incidence of some cancers, such as small intestine, we're really going to need as many people as possible with a diagnosis to come forward.”



Assoc Prof Gianluca Severi, the Cancer Epidemiology Centre's Deputy Director, is overseeing the Forgotten Cancers Project.

If someone you know has been diagnosed with one of the 15 cancers listed above and is interested in participating in the Forgotten Cancers Project they can visit www.forgottencancers.com.au or call Fiona on (03) 9635 5371 for more information.

Frequently asked questions



If I am no longer able to come to Carlton for clinic appointments, can I continue in the study?

We recognise that many of you may be unable to travel to us in Carlton and that some of you have moved interstate or overseas. With this in mind the majority of our research is now conducted over the telephone. Where possible we also offer alternatives, such as home visits, written questionnaires or local clinics, to make it easier for everyone to take part.

Am I too old to continue my participation in Health 2020?

Every single participant is vital to the success of Health 2020. We need as many people as possible to continue with the study, you are never too old.

If I don't have any health issues, am I of any value to the study?

Yes, you are very important to the study. We are studying why people develop certain health conditions. We need to look at data from those who have developed particular health conditions and compare them with those who have not. If too many people withdraw from either group, the accuracy of the results will be affected.

Whether you are sick or have remained well, we urge you to stay involved.

Taking part in the study is, of course, entirely your decision. You can withdraw from Health 2020, or any aspect of the study, at any time by calling us on (03) 9635 5323 or emailing us at HEALTH2020@cancervic.org.au. Your choice will

not affect your health care or disadvantage you in any way.

Are my answers private?

The privacy of your information is of utmost importance. All information that you have provided, by answering questionnaires, is stored separately from your identifying information (such as your name and address).

All of your information is kept in highly secured files. Nothing that could identify you will be given to external researchers, or anyone else, without your consent.

“We appreciate your continued participation and are grateful for the information you have provided and the trust you have placed in us.”

Prof Graham Giles,
Chief Investigator Health 2020

Help us stay in touch

We would like to keep you posted on how the study is progressing and new activities that are underway.

Please tear off this strip and send it to us when you move, change your name, telephone number or email address.

You can also contact us via telephone or email to update your details.

First name Mr/Ms/Mrs/Miss

Middle name

Last name

Phone

Email

NEW ADDRESS

Suburb

State Postcode

OLD ADDRESS

Suburb

State Postcode

Mail to:

Health 2020, Cancer Council Victoria

Reply paid 83943

CARLTON VIC 3053

OR email your details to:

HEALTH2020@cancervic.org.au

OR phone your details to:

(03) 9635 5323



How your data is being used



The information you have generously provided has been invaluable for research into many conditions including cancer, arthritis, cardiovascular disease and eye disease.

Below is a selection of scientific papers that have recently been published using data from Health 2020 participants. Some of this research has involved researchers from across Australia and around the world.

Adams, M.K.M., et al. Abdominal Obesity and Age-related Macular Degeneration. *Am J Epidemiol*, 2011. 173(11): p. 1246–55.

Bassett J.K., et al. Dietary intake of B vitamins and methionine and risk of lung cancer. *Eur J Clin Nutr*, (31 August 2011) doi:10.1038/ejcn.2011.157

Beauchamp, A., et al. Associations among smoking status, lifestyle and lipoprotein subclasses. *J Clin Lipidol*, 2010. 4(6): p. 522–30.

Chionh, F., et al. Physical activity, body size and composition, and risk of ovarian cancer. *Cancer Causes Control*, 2010. 21(12): p. 2183–94.

Davies-Tuck, M., et al. Development of bone marrow lesions is associated with adverse effects on knee cartilage while resolution is associated with improvement – a potential target for prevention of knee osteoarthritis: a longitudinal study. *Arthritis Res Ther*, 2010. 12(1): p. R10.

Genkinger, J.M., et al. A pooled analysis of 14 cohort studies of anthropometric factors and pancreatic cancer risk. *Int J Cancer*, 2011. 129(7): p. 1708–17.

Hodge, A.M., et al. NMR-determined lipoprotein subclass profile is associated with dietary composition and body size. *Nutr Metab Cardiovasc Dis*, 2011. 21(8): p. 603–9.

Huggins, C.E., et al. Relationship of urinary sodium and sodium-to-potassium ratio to blood pressure in older adults in Australia. *Med J Aust*, 2011. 195(3): p. 128–32.

Key, T.J., et al. Circulating sex hormones and breast cancer risk factors in postmenopausal women: reanalysis of 13 studies. *Br J Cancer*, 2011. 105(5): p. 709–22.

Lam, E.K., et al. Associations of diabetes mellitus with site-specific cancer mortality in the Asia-Pacific region. *Ann Oncol*, 2011. 22(3): p. 730–8.

Muller, D.C., et al. Second to fourth digit ratio (2D:4D) and concentrations of circulating sex hormones in adulthood. *Reprod Biol Endocrinol*, 2011. 9(1): p. 57.

Muller, D.C., et al. Second to fourth digit ratio (2D:4D) and prostate cancer risk in the Melbourne Collaborative Cohort Study. *Br J Cancer*, 2011. 105(3): p. 438–40.

Parr, C.L., et al. Body-mass index and cancer mortality in the Asia-Pacific Cohort Studies Collaboration: pooled analyses of 424,519 participants. *Lancet Oncol*, 2010. 11(8): p. 741–52.

Wang, Y., et al. Meat consumption and risk of primary hip and knee joint replacement due to osteoarthritis: a prospective cohort study. *BMC Musculoskelet Disord*, 2011. 12: p. 17.

Wang, Y., et al. Is physical activity a risk factor for primary knee or hip replacement due to osteoarthritis? A prospective cohort study. *J Rheumatol*, 2011. 38(2): p. 350–7.

Yang, X.R., et al. Associations of breast cancer risk factors with tumor subtypes: a pooled analysis from the breast cancer association consortium studies. *J Natl Cancer Inst*, 2011. 103(3): p. 250–63.

Let us email your next newsletter

Would you like to receive your Health 2020 newsletter via email in the future?

Just type into your email subject line “e-news please” and include your name and Health 2020 ID number (if you know it).

Send to: HEALTH2020@cancervic.org.au

