

# Challenging cancer: past, present and future

The Sixth WA State Cancer Conference  
Thursday 23 October 2008  
Hyatt Regency, Perth

## Highlights

### International keynote speakers:

- Professor Elio Riboli, Chair in Cancer Epidemiology and Prevention, Imperial College London
- Professor Jim Cassidy, Cancer Research UK Professor of Oncology, Glasgow University

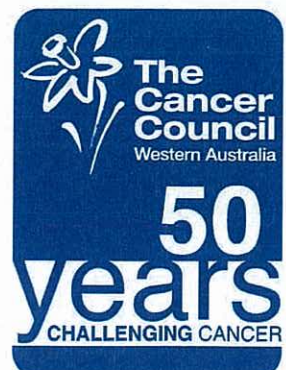
### National speakers:

- Professor Phyllis Butow, Chair in Psychology, University of Sydney
- Professor Don Iverson, Executive Dean, Faculty of Health and Behavioural Sciences, University of Wollongong
- Professor Ian Olver, CEO, Cancer Council Australia
- Professor Bruce Armstrong, Chair, Cancer Research Network, University of Sydney

Morning and afternoon concurrent sessions showcasing current work from many of WA's best researchers.

Two workshops aimed at improving counselling for cancer patients and providing health professionals, from all areas of practice, with the latest evidence on nutrition and exercise recommendations for cancer survivors.

(Limited numbers so please sign up at registration desk)





## CANCER RISK FACTORS

## 49. Western Australian adults' perceptions of cancer risk factors

Terry Slevin<sup>1</sup>, Geoffrey Jalleh<sup>2</sup>, Rob Donovan<sup>2</sup> & Chad Lin<sup>2</sup>,  
<sup>1</sup>Cancer Council WA; <sup>2</sup>Centre for Behavioural Research in Cancer Control, Curtin University

**Introduction:** Data were collected to assess Western Australian adults' cancer risk perceptions of dietary and non dietary factors.

**Methods:** Cross-sectional, computer-assisted telephone surveys of Western Australian adults conducted in 2006-2008 (N = 2,482). Respondents were read a list of 16 factors and asked whether each factor increased, decreased or had no effect on cancer risk (response categories: increase a lot; increase a little; decrease a little; decrease a lot; no effect).

**Outcomes:** Besides a substantial increase in the perceived risk of solarium use following media coverage of Clare Oliver's story in August 2007, the data were very consistent in each year. The 2008 data showed a very high level of awareness of dietary and non dietary cancer risk factors. Foods thought to be protective against cancer (% decrease 'a lot') were vegetables (63%), fruit (55%), high fibre food (54%) and fish (48%). High fat food (44%), food additives and preservatives (33%) and artificial sweeteners (20%) were perceived to increase cancer risk 'a lot'. Interestingly, 21% of respondents perceived alcohol as increasing cancer risk 'a lot', while the corresponding figure for red wine was 2%.

For non dietary factors, asbestos (88%), solariums (77%), chemical fumes (53%), car exhaust fumes (32%) and being overweight or obese (36%) were perceived to increase cancer risk 'a lot'.

**Conclusion:** For cancer agencies to influence the community's cancer risk we must understand the perception held about what contributes to cancer risk. This data informs us about those areas where community perception is in line with scientific data and highlights those areas where community perceptions and scientific evidence is at odds. From this we can invest effort in those areas where perception and evidence are at substantial variance.

## 50. Dietary Intakes of Mushrooms and Green Tea Combine to Reduce the Risk of Breast Cancer

Min Zhang<sup>1</sup>, D'Arcy J Holman<sup>1</sup>, Jian Huang<sup>2</sup> & Xing Xie<sup>2</sup>,

<sup>1</sup>School of Population Health, UWA; <sup>2</sup>School of Medicine, Zhejiang University, China

**Introduction:** Separately emerging bodies of evidence on the possible cancer-protective properties of mushrooms and green tea in experimental studies. However, limited epidemiologic evidence is available on association between cancer risk and mushrooms or green tea and results have been inconclusive. There is no literature available in investigation whether the joint effect of mushrooms and green tea is synergistic on breast cancer.

**Methods:** A case-control study was conducted in southeast China, 2004-2005. Incident cases were 1,009 female patients aged 20-87 years with histologically confirmed breast cancer. Controls were 1,009 age-matched healthy women randomly selected from outpatient breast clinics. Information on frequency and quantity of dietary intake of mushrooms and tea consumption, usual diet, and lifestyle were collected by face-to-face interview using a validated and reliable questionnaire. Logistic regression models were used to obtain odds ratios.

**Outcomes:** Compared with non-consumers, the ORs were 0.36 (95% CI = 0.25-0.51) and 0.53 (0.38-0.73) for daily intake of  $\geq 10g$  fresh mushrooms and  $\geq 4g$  dried mushrooms, based on multivariate logistic regression analysis adjusting for established and potential confounders. There were dose-response relationships with significant tests for trend ( $p < 0.001$ ). The inverse association was found in both pre- and post-menopausal women. Compared with those who consumed neither mushrooms nor green tea, the ORs were 0.11 (0.06-0.20) and 0.18 (0.11-0.29) for daily high intake of fresh and dried mushrooms combined with consuming beverages made from  $\geq 1.05g$  dried green tealeaves per day. The corresponding linear trends were statistically significant for joint effect ( $p < 0.001$ ).

**Conclusion and recommendations:** Higher dietary intake of mushrooms decreased breast cancer risk in pre- and post-menopausal Chinese women and an additional decreased risk of breast cancer from joint effect of mushrooms and green tea was observed. More research is warranted to examine the effects of dietary mushrooms and mechanism of joint effects of phytochemicals on breast cancer.

## 51. Do diesel emissions have impact on the urban air quality and potential cancer risk?

Le Jian, Dean Bertolatti, Krassi Rumchev  
 School of Public Health, Curtin University

**Introduction:** Diesel vehicles are the dominant vehicle type used in heavy transport activities. The pollutant of most concern from a diesel vehicle is particles in ultrafine (nanoparticle,  $\leq 0.1\mu m$ ) sizes. A few epidemiological studies from overseas showed some evidence that exposure to diesel exhausts may increase the risk of cancers. But evidence from human studies is insufficient. There is no national air quality standard available for nanoparticles or studies on nanoparticles from diesel emissions and related toxicities. Efforts have been made to control the emissions by promoting ultra low sulphur diesel, advanced engine, new technology and emission standard. Will diesel emissions have continuous impact on the urban air quality in the near future under this circumstance?

**Methods:** The atmospheric particulate samples were collected by using NanoMoudi Model 125 (MSP Corporation, MN, USA). Size and physico-chemical characteristics were determined by Scanning Electron Microscopy and undertaken by the CSIRO Air Particle Laboratory. Atomic Absorption spectroscopy was used to determine the elemental composition of nanoparticles. Measures were also taken by using the real time monitor TSI Model 8525 P Trak Ultrafine Particle Counter (TSI Incorporated, MN, USA) at various locations including heavy traffic roads, bus stations, inside buses and offices.

**Outcome:** Our preliminary data indicated that the level of nanoparticles exceed 100,000 particles/cm<sup>3</sup> inside a bus and 300,000 particles/cm<sup>3</sup> at a city bus port when compared with <10,000 particles/cm<sup>3</sup> in an office. Other data analysis is currently carried out.

**Conclusion & recommendations:** Diesel vehicles will continue to play a significant role in fleet emissions. It is important to establish state-of-the-art instruments and methodologies to examine the speciation of nanoparticles in the context of potential health risks including cancers.

52. Lifestyle factors and colorectal cancer: the WABOHs study  
 Dr Jane Heyworth, School of Population Health, UWA, Assoc Prof Lin Fritschj,

WA Institute of Medical Research and the WABOHs study team

Much attention has been focussed on identifying environmental risk factors for colorectal cancer (CRC) but there has been considerable inconsistency among the results of epidemiological studies. We investigated the broad hypothesis that CRCs arising at different subsites of the large bowel have different environmental risk factors. The factors hypothesised to increase the risk of right sided CRC were cigarette smoking, sedentary lifestyle and obesity, whereas alcohol was hypothesised to increase the risk of left-sided CRC.

We conducted a population-based case-control study of colorectal cancer, named The Western Australian Bowel Health Study (WABOHs). Cases were pathologically confirmed incident cases of CRC, aged 40-79 years, resident in Western Australia and notified to the Western Australian Cancer Registry between 1<sup>st</sup> June 2005 and 31<sup>st</sup> August 2007. Controls were persons without a diagnosis of CRC who were randomly selected from the Western Australian electoral roll and frequency matched to the case distribution on age and sex. Data on lifestyle were collected through self-administered questionnaires. The odds ratio for left- and righted colorectal cancer were estimated for each exposure with polytomous logistic regression using STATA.

Of the 912 cases; 615 (67%) were left-sided and 297 (33%) were right-sided CRC. The risk associated with alcohol, smoking and BMI did not differ by site. For sufficient levels of physical activity there was a significant difference between left and right sided cancers, suggestive of a protective left sided CRC and increased risk for right side CRC. For MET hours per week a similar but non significant difference was seen for the highest quartile. BMI was associated with a significantly increased risk of CRC as a whole.

These data suggest that there are no left - right differences in risk of CRC associated with smoking, alcohol or BMI but that physical activity may provide protection for left sided CRC but not right sided CRC.