

Melanoma detection enhanced with blood biomarkers

May 13 2014, by Chris Thomas



More than 12,500 new cases of melanoma are diagnosed in Australia annually, making it the third most common form of cancer in Australian men and women. Credit: Ho John Lee

The need for invasive skin biopsies could be reduced extensively with Edith Cowan University researchers working on ways to detect melanoma in early stages, using a blood test in conjunction with visual scans.

A \$450,000 National Health and Medical Research Council development grant has enabled them to expand on a 2012 preliminary investigation of 40 people that identified eight blood biomarkers that indicated the early presence of melanoma tumour.

ECU School of Medical Sciences Professor Mel Ziman conducted the original investigation and is working with PhD student Pauline Zaenker and postdoctoral research fellow Dr Elin Gray on the latest study.

Melanoma causes 80 per cent of skin cancer-related deaths with Australia having the highest incidence of melanoma in the world, according to the Melanoma Institute Australia.

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Search for diagnostic markers turns to auto-antibodies

In 2012, Prof Zilman's investigation looked for circulating tumour cells as prognostic markers while the current research is assessing auto-antibodies as early diagnostic markers.

"No other researchers have looked for auto-antibodies in serum for diagnostic markers," she says.

"Using an array of more than 1600 protein antigens makes this particularly novel.

"Auto-antibodies are produced by the body in response to the presence of cancerous proteins.

"They were determined using serum from patients placed on an array of antigens extracted from cancerous cells and individually attached to an array."

Previously, increases in serum levels of certain auto-antibodies have been shown to precede the development of disease symptoms and correlate with the incidence of breast, lung, small cell lung, colon, ovary, prostate and head and neck cancers.

Survival rates high with early diagnosis

Prof Zilman says the chance of a patient surviving melanoma is as high as 98 per cent if caught and removed before it has a chance to spread.

"Early diagnosis is the key to improving survival rates," she says. "A reliable [blood test](#) could be used to screen at-risk patients annually, reducing the need for unnecessary surgical procedures."

The latest study will involve 300 people—and the research team is looking for volunteers.

Participants need to have been diagnosed with melanoma within the past three months. Healthy volunteers are also needed as age-matched controls (they could possibly be partners of those diagnosed with [melanoma](#)).

More information: "Serologic autoantibodies as diagnostic cancer biomarkers—a review." Zaenker P., et al. *Cancer Epidemiol Biomarkers Prev.* 2013 Dec;22(12):2161-81. [DOI: 10.1158/1055-9965.EPI-13-0621](https://doi.org/10.1158/1055-9965.EPI-13-0621). Epub 2013 Sep 20.

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