# Why a randomized melanoma screening trial may be a good idea (Letter)


## Author

Cust, AE, Aitken, JF, Baade, PD, Whiteman, DC, Soyer, HP, Janda, M



## Published

2018

## Journal Title

British Journal of Dermatology

## Version

Accepted Manuscript (AM)

## DOI

10.1111/bjd.17089

DR ANNE CUST (Orcid ID : 0000-0002-5331-6370)

DR MONIKA JANDA (Orcid ID : 0000-0002-1728-8085)

Article type : Letter to the Editor

# Why a randomised melanoma screening trial may be a good idea

A.E. Cust[1,2], J. Aitken[3,4], P. Baade[3,5], D. Whiteman[6], H.P. Soyer[7,8], M. Janda[9]

[1]Cancer Epidemiology and Prevention Research, Sydney School of Public Health, The University of Sydney, Sydney, Australia

[2]Melanoma Institute Australia, The University of Sydney, Sydney, Australia

[3]Cancer Council Queensland, Brisbane, Australia

[4]Menzies Health Institute, Griffith University

[5]School of Mathematical Sciences, Queensland University of Technology

[6]QIMR-Berghofer Medical Research Institute, Brisbane, Australia

[7]Dermatology Research Centre, The University of Queensland, The University of Queensland Diamantina Institute, Brisbane, Australia

[8]Dermatology Department, Princess Alexandra Hospital, Brisbane, Australia

[9]Centre for Health Services Research, Faculty of Medicine, The University of Queensland, Princess Alexandra Hospital, Brisbane, Australia

Corresponding author

Professor Monika Janda, PhD

Centre for Health Services Research, The University of Queensland, Brisbane, Australia.

E-mail: m.janda@uq.edu.au

Phone: +61 7 31754569

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/bjd.17089

We read with interest the letter by Halvorsen *et al.*[1] These authors demonstrated in Table 1[1] that the number needed to invite to prevent one melanoma death is inversely proportional to the mortality rate in the cohort. Whether or not a screening trial is feasible depends on this and many other factors, including the primary outcome, incidence, the screening test's accuracy, and contamination of the control group (in the case of a melanoma screening by opportunistic skin checks).

The US Preventive Services Task Force suggested to "…focus on evaluating the effectiveness of targeted screening in those considered to be at higher risk for skin cancer", but Halvorsen *et al.*[1] considered it "unrealistic" to identify high-risk individuals. Improvements in risk prediction,[2] online risk calculators,[3] risk factor information available in ongoing cohort studies or sampling from national health insurance records may enable a risk-stratified approach. This would reduce the required trial sample size, and overdiagnosis compared with age-based screening.[4] New technologies such as total-body photography plus dermoscopy, and artificial intelligence,[5] rather than making a trial "obsolete", could be incorporated into the trial design and lead to improvements in sensitivity, specificity, and benign to malignant excision ratio, thus making screening more cost-effective and also assisting to overcome the risk of contamination of the control group. We agree that detection of keratinocyte cancers as part of a screening program "adds to the costs and high workload" but excluding the impact they have on quality of life would underestimate the benefits gained from their improved diagnosis and early excision.[6,7]

In summary, we believe a trial may be feasible with a different design or conducted in other regions of the world where melanoma is more common. By providing stringent quality control, follow-up and reminder procedures, systematic screening could overcome many of the downfalls of opportunistic screening that exacerbate socio-demographic inequities in melanoma outcomes, and lead to many, potentially avoidable, excisions in worried-well population subgroups. Given that most melanomas are visible on the skin, and morbidity and mortality directly correlate with the extent of local invasion of the tumour at diagnosis, early detection is feasible and crucial. From an economic perspective, recent developments in immunotherapy treatment for late-stage disease are placing an increasingly unsustainable burden on the health care system. The feasibility of a randomised trial to assess the benefits, costs, and harms of a targeted melanoma screening program remains worthy of further consideration.

**References**


1. Halvorsen JA, Løberg M, Gjersvik P, *et al.* Why a randomized melanoma screening trial is not a good idea. *Br J Dermatol*. 2018 Jun 12.
2. Cust AE, Drummond M, Kanetsky PA, *et al*. Assessing the incremental contribution of common genomic variants to melanoma risk prediction in two population-based studies. *J Invest Dermatol* 2018.
3. Olsen CM, Pandeya N, Thompson BS, *et al*. Risk Stratification for Melanoma: Models Derived and Validated in a Purpose-Designed Prospective Cohort. *J Natl Cancer Inst* 2018
4. Pashayan N, Morris S, Gilbert FJ, et al: Cost-effectiveness and Benefit-to-Harm Ratio of Risk-Stratified Screening for Breast Cancer: A Life-Table Model. JAMA Oncol 2018.
5. Janda M, Soyer HP. Automated diagnosis of melanoma. *Med J Aust* 2017; **207**:361–62.
6. Johnson MM, Leachman SA, Aspinwall LG, *et al.* Skin cancer screening: recommendations for data-driven screening guidelines and a review of the US Preventive Services Task Force controversy. Melanoma Manag 2017; **4**:13–37.
7. Gordon LG, Elliott TM, Olsen CM, *et al*. Multiplicity of skin cancers in Queensland and their cost burden to government and patients. *Aust N Z J Public Health* 2018; **42**:86–91.