

An ounce of cancer prevention is worth a moment of your attention

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What if you could visit the doctor for a blood test that predicted your personal cancer risk - then got a simple prescription that reduced that risk? The scenario isn't so far off - and bringing it closer is the goal of cancer prevention.

The global [cancer](#) burden cannot be borne by treatment alone. Prevention at every level - from diet to education, from screening to vaccination - is the key to sustainable cancer control. Now, the latest Special Issue in *ecancermedicalscience* hones in the three moving pieces in the above scenario - biomarkers, screening and prevention.

Screening: the combination of awareness and availability that brought you to the doctor. Biomarkers: the clues to cancer that would be present in the blood sample. And prevention: whatever that might mean for you - perhaps health, freedom, relief, time...

This Special Issue collects seven original research articles in these areas, which intersect in the underdeveloped field of cancer prevention using pharmaceutical agents. The collection is centred on broad themes, allowing the lessons within to apply beyond any particular cancer or specific agent.

Featuring an editorial from Guest Editor Prof Jack Cuzick of the Wolfson Institute of Preventive Medicine, London, UK, this unique collection of articles will provide healthcare professionals at every level with the latest in chemoprevention.

"This special issue provides an excellent focus as to where we are in the field of cancer prevention with therapeutic agents - and what needs to be done for this to have a major impact on cancer control," says Prof Cuzick.

Dr Eva Szabo of the National Cancer Institute (NCI), USA reviews the NCI programme on early stage trials to evaluate new cancer agents, and discusses the need for validated biomarkers. Her article offers an excellent and thorough review from an American perspective.

Dr Andrea DeCensi of the Ospedali Galliera, Genova, Italy and colleagues offer a perspective on breast [cancer prevention](#) - where the greatest progress in prevention research has been made, but where uptake has been limited. Both professionals and the public seem to think that [preventive medicine](#) for breast cancer isn't worth the risk of toxicity. Is this true? And can their minds be changed with evidence?

Prof Phillipe Autier of the International Agency for Research on Cancer, Lyon, France defines and addresses the risk factors and biomarkers of life-threatening cancers - after all, these are the cancers that society would most like to prevent.

ecancer editorial board member Dr Giulia Veronesi (Humanitas Research Hospital, Rozzano, Italy) and colleagues explore this topic more deeply for lung cancer - where prevention could potentially avoid progression and the need for surgery.

Dr Fabrizio Bianchi of the European Institute of Oncology, Milan, Italy develops this theme further and discusses the potential role of circulating free-micro RNAs and circulating tumour DNA as biomarkers for early lung cancer and response to treatment.

Prof Adriana Albini of IRCCS Multimedica, Milan, Italy and colleagues

focus on the role of angiogenesis in the development of cancer and introduce the concept of "angioprevention." Drawing parallels between cancer and the cardiovascular system, Albini further reminds us that we can learn many lessons from the effectiveness of prevention efforts in heart disease. How can these be applied to cancer?

Prof Karen Brown and Dr Alessandro Rufini of the University of Leicester, Leicester, UK further develop this theme with a nod to chemopreventive chemicals developed or derived from dietary sources. They explore the challenges associated with translating laboratory findings to the clinic and the importance of pharmacodynamic, or predictive biomarkers for identifying candidate therapies worth taking forward into large scale randomised controlled trials.

The papers are pulled together by their united interest in identifying and overcoming barriers to acceptance of chemoprevention.

An ounce of prevention is famously said to be worth a pound of cure. It's already true in heart disease and strokes, where prevention is widely recognised - and now it's time to apply it to cancer.

More information: Karen Brown. New concepts and challenges in the clinical translation of cancer preventive therapies: the role of pharmacodynamic biomarkers, *ecancermedalscience* (2015). [DOI: 10.3332/ecancer.2015.601](https://doi.org/10.3332/ecancer.2015.601)

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