



nature publishing group

**nature**  
REVIEWS

CANCER

REPRESSIVE NATURE  
How do Polycomb genes contribute to cancer?

An apple a day...  
Will chemoprevention keep the doctor away?

► COVER: 'Silent patches and patterns' by Manuel Enriquez, inspired by the review on p846.



EZZIE HUTCHINSON



NICOLA MCCARTHY



SARAH SETON-ROGERS



GEMMA ALDERTON

# A

lthough many new targeted drugs have made it as far as the clinic and hold promise for the treatment of people already diagnosed with cancer, preventing the development of cancer makes both economic and clinical sense.

Early detection, where possible, is certainly a valid approach, but many chemopreventative agents have not proven their worth. Why is this? Epidemiological evidence has guided us towards quitting smoking, exercising, losing weight and eating 5 portions of fruit and vegetables a day in order to reduce our chances of developing cancer. But epidemiology alone is not always a good enough guide to judge the use of chemopreventative agents, including those that are contained in our daily fruit and vegetable intake. This, and related aspects, are reviewed on page 867, by Eva Szabo, who asks: where next for cancer chemoprevention trials?

Although some trials have shown the efficacy of chemopreventative agents in high-risk individuals (for example, the use of tamoxifen to prevent breast cancer), many others have shown no benefit and a few have even identified harm (the acceleration of lung cancer incidence in smokers that took β-carotene). Other agents seem to be effective, but their side effects look likely to restrict their use in all but the highest risk patients. We need, argues Szabo, a much clearer biological and clinical insight into how a potential chemopreventative agent works before we attempt to evaluate its effect on suppressing tumour development.

Will we ever find chemopreventative agents that are available to all, irrespective of cancer risk? No seems the most likely answer. Any side effects will always be a barrier to use in an otherwise healthy individual, but with careful planning we should be able to identify chemicals that reduce the risk of cancer development in patients with precancerous lesions.

#### EDITORIAL OFFICES

**LONDON** [NatureReviews@nature.com](mailto:NatureReviews@nature.com)  
The Macmillan Building, 4 Crinan Street,  
London N1 9XW, UK  
Tel: +44 (0)20 7843 3620;  
Fax: +44 (0)20 7843 3629

**CHIEF EDITOR:** Ezzie Hutchinson  
**SENIOR EDITOR:** Nicola McCarthy  
**ASSOCIATE EDITORS:** Sarah Seton-Rogers,  
Gemma Alderton  
**ASSISTANT EDITOR:** Francesca Pentimalli  
**COPY EDITOR:** David Holmes  
**ART EDITOR:** Manuel Enriquez  
**EDITORIAL SUPPORT MANAGER:**  
Meg Fitzpatrick  
**ART CONTROLLER:** Susanne Harris  
**SENIOR ART EDITOR:** Vicki Askew  
**SENIOR ART EDITOR/CARTOONIST:** Neil Smith  
**MANAGING PRODUCTION EDITOR:**  
Judith Shadwell  
**DEPUTY PRODUCTION EDITOR:** Simon Fenwick  
**PRODUCTION CONTROLLER:** Natalie Smith

**EDITORIAL ASSISTANTS:** Eilliann Fairbairn,  
Laura Firman

**WEB PRODUCTION EDITORS:**  
Deborah Anthony, Angela Bird, Jasmine Myer,  
Amy Wagner

**WEB PRODUCTION MANAGER:**

Alexander Thurrell

**MARKETING MANAGER:** Kellie Lane

#### MANAGEMENT OFFICES

**LONDON** [nature@nature.com](mailto:nature@nature.com)  
The Macmillan Building, 4 Crinan Street,  
London N1 9XW, UK  
Tel: +44 (0)20 7843 4000;  
Fax: +44 (0)20 7843 4596/7

**OFFICE MANAGER:** Sheryl Ocampo

**PUBLISHER:** Hugh Blackbourn

**MANAGING DIRECTOR:**

Annette Thomas

**EDITOR-IN-CHIEF, NATURE PUBLICATIONS:**

Philip Campbell

**ASSOCIATE DIRECTORS:**

Jenny Henderson, Tony Rudland

#### EDITORIAL PRODUCTION DIRECTOR:

James McQuat

**PRODUCTION MANAGER:** Yvonne Strong

**WEB PRODUCTION MANAGER, UK:**

Amanda Ward

**DIRECTOR, WEB PUBLISHING:**

Timo Hannay

**HEAD OF WEB PRODUCTION:**

Jeremy Macdonald

**NEW YORK** [nature@natureny.com](mailto:nature@natureny.com)

Nature Publishing Group, 75 Varick Street,  
9th floor, New York, NY 10013-1917, USA  
Tel: +1 212 726 9200;  
Fax: +1 212 696 9006

**CHIEF TECHNOLOGY OFFICER:**

Howard Ratner

**DIRECTOR OF NEW TECHNOLOGY:**

Greg Suprock

**HEAD OF WEB SERVICES:** Anthony Barrera

**NATUREJOBS PUBLISHER:** Ben Crowe

**HEAD OF NATURE RESEARCH & REVIEWS**

**MARKETING:** Sara Girard

**TOKYO** [nature@natureasia.com](mailto:nature@natureasia.com)

Chiyoda Building 5F, 2-37-1 Ichigayatamachi,  
Shinjuku-ku, Tokyo 162-0843, Japan  
Tel: +81 3 3267 8751;  
Fax: +81 3 3267 8746

**ASIA-PACIFIC PUBLISHER:**

Antoine E Bocquet

**MANAGER:** Koichi Nakamura

**ASIA-PACIFIC SALES DIRECTOR:**

Kate Yoneyama

**SENIOR MARKETING MANAGER:**

Peter Yoshihara

**MARKETING/PRODUCTION MANAGER:**

Takeshi Murakami

**INDIA** 5A/12 Ansari Road, Daryaganj,

New Delhi 110 002, India

Tel/Fax: +91 11 2324 4186

**SALES AND MARKETING MANAGER, INDIA:**

Harpal Singh Gill

Copyright © 2006 Nature Publishing Group  
Printed in Wales by Cambrian Printers  
on acid-free paper