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*Cancer Services Bulletin: April 2014*

## Lung

### [Discovery to help predict who will benefit from lung cancer treatment](#)

Cancer Research UK scientists have discovered the structure of an abnormal protein which causes an aggressive type of lung cancer, according to new research published in the [Proceedings of the National Academy of Science](#)

Unveiling the structure of this protein – formed by a genetic fault – could enable doctors to predict who will benefit from a specific lung cancer treatment, while saving other patients from receiving it unnecessarily.

### [Lung cancer rates climb by three quarters in women while halving in men](#)

Lung cancer rates in women have risen by a staggering three quarters (73 per cent) over the last forty years according to new [Cancer Research UK figures](#)

"These figures provide a stark reminder that lung cancer remains one of the biggest challenges in cancer research. The disease kills more than twice as many people as the second most common cancer killer – bowel cancer – and this looks set to continue unless we all do more." - Dr Harpal Kumar, Cancer Research UK's chief executive

But while the rate for women has continued to climb, the figures show lung cancer rates have fallen by nearly half (47 per cent) in men over the same period and by a fifth (20 per cent) for people overall.

Around 87 per cent of lung cancers are caused by tobacco, with the remaining 13 per cent of cases not related to tobacco. Lung cancer can take many years to develop, so these figures largely mirror changes in previous smoking rates.

The lung cancer rate in women is now 41 per 100,000, up from 23 in 1975. For men, it is now 59 per 100,000, down from 112 in 1975.



## Lung

### [A multicentre randomised controlled trial of reciprocal lung cancer peer review and supported quality improvement: results from the improving lung cancer outcomes project.](#)

Results from the National Lung Cancer Audit demonstrate unexplained variation in outcomes. Peer review with supported quality improvement has been shown to reduce variation in other areas of health care but has not been formally tested in cancer multidisciplinary teams. The aim of the current study is to assess the impact of reciprocal peer-to-peer review visits with supported quality improvement and collaborative working on lung cancer process and outcome measures.

*British Journal of Cancer* 110, 1936-1942 (15 April 2014)

### [Recent Clinical Advances in Lung Cancer Management](#)

Progress has been made in the treatment of lung cancer over the past 40 years, albeit at a modest pace. Cytotoxic chemotherapy has improved 5-year survival rates when added to surgery in early-stage non-small-cell lung cancer (NSCLC) and when delivered concurrently with chest radiotherapy in stage III NSCLC and small-cell lung cancer (SCLC). Chemotherapy can prolong survival in patients with stage IV NSCLC and SCLC, and, with newer supportive care measures, with less toxicity. Nonetheless, the improvements are modest, leading to only 4% to 5% improvements in 5-year survival rates for stage I-III and prolongation of only months for stage IV. New advances include the discovery of oncogenic drivers and therapies specific for these drivers, new ways to improve the response and new ways to detect and diagnose lung cancer earlier. This review will summarize the advances and current controversies in the management of lung cancers, many of which have figured prominently in American Society of Clinical Oncology's history.

*JCO* April 1, 2014 vol. 32 no. 10 973-982



## *Cancer Services Bulletin: April 2014*

### Skin

#### [Skin cancer rates five times higher than in 70s](#)

The rates of people diagnosed with malignant melanoma, the most serious form of skin cancer, are now five times higher than 40 years ago, according to figures announced by Cancer Research UK.

More than 13,000 people are now developing the disease every year compared with around 1,800 in 1975.

The latest incidence rates show around 17 people in every 100,000 are diagnosed with malignant melanoma in Great Britain every year. This is compared to just over 3 per 100,000 in the mid 70s.

The dramatic rise is partly down to an explosion in package holidays to Europe dating from the late 60s and the increasing popularity of the “must-have” tan often achieved only after damaging sunburn. The boom in sunbed use has also helped to fuel the increase in skin cancer.

Better detection methods may also have contributed to increasing rates.

Malignant melanoma is now the fifth most common cancer in the UK and more than 2,000 people die from the disease each year.

### Bowel

#### [World-first clinical trial launches for advanced bowel cancer](#)

Patients with advanced **bowel cancer** are set to benefit from the launch of a revolutionary new clinical trial targeting treatments to their specific cancer type as well as rapidly adapting to include new drugs and new biomarkers as they become available.

"We hope this approach could be a game changing moment for the treatment of bowel cancer and for how we run clinical trials to tailor treatments to each individual" - Professor Tim Maughan



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The first trial of its kind in solid tumours, [FOCUS4](#) will divide around 2,400 patients into different, smaller groups depending on specific biomarkers found in their tumour. These biomarkers will then be used to predict the targeted treatments that patients are most likely to benefit from.

The trial is jointly funded by the [National Institute for Health Research](#) (NIHR) and Cancer Research UK, through its partnership with [Stand up to Cancer](#) and Channel 4.

### [Bowel cancer linked to fine-tuning 'microRNA'](#)

A tiny genetic 'fine-tuner' called a microRNA could play an important role in the development of [bowel cancer](#), an international team of scientists suggest.

"If a drug can be developed against this target it offers the appealing prospect of shutting down multiple pathways of bowel cancer growth" - *Dr Samuel Godfrey, Cancer Research UK*

The molecule, known as microRNA 135b, was linked to several important cancer genes that are involved in the progression of the disease.

And the study, published in the journal [Cancer Cell](#), could lead to new ways to target bowel cancer and shut down the effects of these cancer-causing genes in one hit

Researchers based at The Institute of Cancer Research in London, the University of Glasgow and Ohio State University, USA tested for microRNA 135b in 485 patients with bowel cancer and found that levels were around four times higher in tumours than in healthy tissue.

Patients with the highest levels of microRNA 135b also survived the least long, opening up the possibility of using the molecule to identify patients with more aggressive forms of bowel cancer.

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## Bowel

### [Study paves way for tailored bowel cancer prevention with aspirin](#)

US researchers are a step closer to identifying who may benefit most from taking [aspirin](#) to prevent bowel cancer.

“The findings of this study are interesting but we’re still some way off from being able to tell who might benefit from using aspirin” - *Dr David Adams, Cancer Research UK*

Previous [studies](#) have shown that taking aspirin daily could help prevent the disease, but the drug’s side effects have caused concern over prescribing it widely, as has uncertainty over the optimum dose.

Now a team of researchers, including experts from Case Western Reserve University School of Medicine, the Dana Farber Cancer Institute, Harvard University, Massachusetts General Hospital, and University Hospitals Case Medical Center, have found a molecule in the bowel lining whose levels could identify those people who may benefit.

The results also suggest the mechanism by which the drug exerts its protective effect - something that has remained elusive despite years of research.

## Breast

### [Radiotherapy after mastectomy could benefit more women with breast cancer](#)

Women whose breast cancer has spread to just a few lymph nodes under the arm could benefit from radiotherapy treatment following mastectomy, according to [UK scientists](#).

“This study suggests that more women than previously thought could potentially benefit from radiotherapy following a mastectomy” - *Martin Ledwick, Cancer Research UK*

Current NHS [guidelines](#) say that women should be offered radiotherapy if their breast cancer spread to four or more under arm lymph nodes.

But the [new study](#), funded by Cancer Research UK, shows that radiotherapy may also improve survival for women whose cancer has spread to between one and three lymph nodes, and also help prevent their disease from returning.



## Breast

### [New evidence links smoking to postmenopausal breast cancer risk](#)

Postmenopausal women who smoke or have smoked in the past may have an increased risk of breast cancer compared with women who have never smoked according to a new study published in the British Journal of Cancer.

Researchers from the U.S. National Cancer Institute in Bethesda, Maryland found that postmenopausal women who reported they smoke were 19 per cent more likely to develop breast cancer compared with women who never smoked.

And those who said they were former smokers were seven per cent more likely to be diagnosed with the disease than women who had never smoked.

These results held true even after accounting for alcohol consumption, which is known to increase the risk of breast cancer, and is more common among smokers.

The researchers asked around 186,000 American women aged between 50 and 71 in the mid-1990s about their smoking and alcohol use, and their medical and reproductive history. They then tracked these women for around 10 years. Of these around 7,500 developed breast cancer in that time.

### [Antibiotics to prevent surgical site infection after breast cancer surgery \(Review\)](#)

Breast cancer accounts for one in 10 of all new cancer cases diagnosed and surgical removal of the breast is a common treatment approach. An infection of the surgical wound is often a complication of surgery and taking antibiotics just before the operation significantly reduces the chances of developing an infection. The review is not able to establish which antibiotic is most appropriate. No trials were found which considered the effect of antibiotics when the operation involved immediate breast reconstruction.

Cochrane Database Syst Rev. 2014 Mar 9;3.



## *Cancer Services Bulletin: April 2014*

### Breast

#### [Randomized, Controlled Trial of Yoga in Women With Breast Cancer Undergoing Radiotherapy](#)

**Purpose** Previous research incorporating yoga (YG) into radiotherapy (XRT) for women with breast cancer finds improved quality of life (QOL). However, shortcomings in this research limit the findings.

**Patients and Methods** Patients with stages 0 to III breast cancer were recruited before starting XRT and were randomly assigned to YG (n = 53) or stretching (ST; n = 56) three times a week for 6 weeks during XRT or waitlist (WL; n = 54) control. Self-report measures of QOL (Medical Outcomes Study 36-item short-form survey; primary outcomes), fatigue, depression, and sleep quality, and five saliva samples per day for 3 consecutive days were collected at baseline, end of treatment, and 1, 3, and 6 months later.

**Results** The YG group had significantly greater increases in physical component scale scores compared with the WL group at 1 and 3 months after XRT ( $P = .01$  and  $P = .01$ ). At 1, 3, and 6 months, the YG group had greater increases in physical functioning compared with both ST and WL groups ( $P < .05$ ), with ST and WL differences at only 3 months ( $P < .02$ ). The group differences were similar for general health reports. By the end of XRT, the YG and ST groups also had a reduction in fatigue ( $P < .05$ ). There were no group differences for mental health and sleep quality. Cortisol slope was steepest for the YG group compared with the ST and WL groups at the end ( $P = .023$  and  $P = .008$ ) and 1 month after XRT ( $P = .05$  and  $P = .04$ ).

**Conclusion** YG improved QOL and physiological changes associated with XRT beyond the benefits of simple ST exercises, and these benefits appear to have long-term durability.

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## Breast

### [Yoga's Impact on Inflammation, Mood, and Fatigue in Breast Cancer Survivors: A Randomized Controlled Trial](#)

**Purpose** To evaluate yoga's impact on inflammation, mood, and fatigue.

**Patients and Methods** A randomized controlled 3-month trial was conducted with two post-treatment assessments of 200 breast cancer survivors assigned to either 12 weeks of 90-minute twice per week hatha yoga classes or a wait-list control. The main outcome measures were lipopolysaccharide-stimulated production of proinflammatory cytokines interleukin-6 (IL-6), tumor necrosis factor alpha (TNF- $\alpha$ ), and interleukin-1 $\beta$  (IL-1 $\beta$ ), and scores on the Multidimensional Fatigue Symptom Inventory-Short Form (MFSI-SF), the vitality scale from the Medical Outcomes Study 36-item Short Form (SF-36), and the Center for Epidemiological Studies-Depression (CES-D) scale.

**Results** Immediately post-treatment, fatigue was not lower ( $P > .05$ ) but vitality was higher ( $P = .01$ ) in the yoga group compared with the control group. At 3 months post-treatment, fatigue was lower in the yoga group ( $P = .002$ ), vitality was higher ( $P = .01$ ), and IL-6 ( $P = .027$ ), TNF- $\alpha$  ( $P = .027$ ), and IL-1 $\beta$  ( $P = .037$ ) were lower for yoga participants compared with the control group. Groups did not differ on depression at either time ( $P > .2$ ). Planned secondary analyses showed that the frequency of yoga practice had stronger associations with fatigue at both post-treatment visits ( $P = .019$ ;  $P < .001$ ), as well as vitality ( $P = .016$ ;  $P = .0045$ ), but not depression ( $P > .05$ ) than simple group assignment; more frequent practice produced larger changes. At 3 months post-treatment, increasing yoga practice also led to a decrease in IL-6 ( $P = .01$ ) and IL-1 $\beta$  ( $P = .03$ ) production but not in TNF- $\alpha$  production ( $P > .05$ ).

**Conclusion** Chronic inflammation may fuel declines in physical function leading to frailty and disability. If yoga dampens or limits both fatigue and inflammation, then regular practice could have substantial health benefits.

JCO April 1, 2014 vol. 32 no. 10 1040-1049



## Prostate

### [Study finds prostate cancer tests underestimate disease in half of cases](#)

Tests to grade and stage prostate cancer underestimated the severity of the disease in half of men whose cancers would have been classified as 'slow growing' in a study published in the *British Journal of Cancer*.

"Our results show that the severity of up to half of men's prostate cancers may be underestimated when relying on tests before they have surgery." - Mr Greg Shaw, study author

Cancer Research UK scientists from the University of Cambridge compared the staging and grading of over 800 men's cancers before and after they had surgery to remove their prostate.

They found that in the 415 men whose prostate cancer was classified as slow growing and confined to just the prostate after an initial biopsy, half (209) – when assessed again after surgery – had more aggressive cancer than originally thought. And almost a third (131) had cancers that had spread beyond the prostate.

### [Cholesterol unlocks clues to prostate cancer spread](#)

Scientists have uncovered a link between cholesterol and prostate cancer's ability to spread to the bones in a study published in the *British Journal of Cancer*.

"Understanding this process will provide vital clues as to how drugs like statins might benefit certain groups of prostate cancer patients who are more at risk of their cancer spreading." - Study author, Professor Noel Clarke

The findings could help explain why taking statins – commonly used cholesterol-lowering drugs – is thought to slow the progress of the disease in some cases.

The scientists, from [The University of Manchester](#), made the discovery by combining prostate cancer cells in the lab with arachidonic acid (AA), an omega-6 fatty acid that has been shown to attract prostate cancer cells to the bone marrow, where it is found naturally in high concentrations.



When the prostate cancer cells were exposed to AA the researchers found that they changed shape, becoming rounder and also sprouting projections that helped them to squeeze through the gaps in the surrounding tissues and become established in the bone marrow.

But the researchers found they were able to stop the cells developing these characteristics by treating them with statins, which disrupted their ability to manufacture cholesterol.

## Other

### ['Early access' scheme unveiled for innovative medicines](#)

People with advanced cancer and other serious illnesses like dementia could soon benefit from early access to [innovative and promising treatments](#).

"Time is of the essence for many cancer patients, particularly those with more advanced disease. It can mean the difference between life and death" - *Dr Harpal Kumar, Cancer Research UK*

The Early Access to Medicines scheme would enable safe and promising drugs to be "fast tracked" into the NHS before they have even been granted a licence for use.

The new scheme will allow patients without other treatment options to be given experimental drugs that have not yet been licensed but that have been deemed safe and effective through clinical trials.

Experts will carry out a rapid analysis of the treatment before labelling it a "promising innovative medicine".

The Medicines and Healthcare products Regulatory Agency (MHRA) will then offer a scientific opinion based on a medicine's risks and benefits. If the benefits are found to outweigh the risks, doctors will be given the green light to offer the drug to patients.



## [Heat treatment effective against early precursor of oesophageal cancer](#)

A treatment that uses heat to kill abnormal cells lining the food pipe reduces the risk of an early form of a condition called [Barrett's oesophagus](#) from progressing to [oesophageal cancer](#), research from the Netherlands has shown.

"This study is important and shows that more people with Barrett's oesophagus could benefit from radiofrequency ablation than previously thought" - *Dr Rebecca Fitzgerald, Cancer Research UK*

The latest research, published in [Journal of the American Medical Association](#), shows that RFA may also benefit people with earlier 'low-grade' stages of Barrett's oesophagus that can progress more slowly.

## [The role of discharge co-ordinator in oncology](#)

**Aim** To explore, develop and support the role of discharge co-ordinator.

**Method** Data were collected from multiple sources in the framework of an action research study over two years from 2011/13.

**Findings** Five broad themes emerged: beneficial impact of the introduction of discharge co-ordinator for patients and all those involved in their care; demanding role and complexity of patients' needs; improved knowledge of the discharge process; communication skills, a personal approach; and the research process.

**Conclusion** Action research provided a clear framework to evaluate, develop and support a new role in clinical practice. It also provided evidence of the success and benefits of the role for patients and those involved in their care. The findings and approach used would be applicable to other healthcare settings seeking to improve their discharge services for patients or as a means to support the introduction of a new role.

Cancer Nursing Practice. 13, 3, 21-26



## *Cancer Services Bulletin: April 2014*

### [Improving quality of life for patients during and after cancer](#)

The annual Quality in Care Excellence in Oncology awards recognise, reward and share good practice in UK cancer management, education and care. This article explores the work of three initiatives that were recognised at the 2013 awards. Cancer team of the year was awarded to Leeds Teaching Hospitals NHS Trust's teenage and young adult cancer service – Yorkshire and Humber, which ensures that every patient has a choice in where he or she is treated. The team behind a nurse-led risk assessment tool, the use of which has cut the number of infections experienced by patients undergoing chemotherapy, was highly commended in the improving the quality of life and experience of care for people living with cancer category. And a service that seeks to lessen the effect of gastrointestinal and nutritional problems for cancer survivors was a finalist in the category for best innovation in service provision – partnership across the pathway.

### [Cancer patients diagnosed more quickly](#)

The time taken to diagnose some of the more common cancers – from the point when a patient first reports a possible symptom to their general practitioner (GP) – fell in adults by an average of five days in just under a decade. Researchers based found that the average time it took to be diagnosed for a range of common cancers combined fell from 125 days in 2001-2002 to 120 days in 2007-2008. And for kidney, head and neck, and bladder cancers, more than two weeks were shaved off the time between first reporting a possible symptom and receiving a diagnosis.

British Journal of Cancer. 5 February

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### Key Journals

British Journal of Cancer: <http://www.nature.com/bjc/index.html>

Journal of Clinical Oncology: <http://jco.ascopubs.org/>

The Cancer Journal: <http://journals.lww.com/journalppo/pages/default.aspx>

The Lancet Oncology: <http://www.thelancet.com/journals/lanonc/issue/current>

Cancer:  
<http://onlinelibrary.wiley.com/doi/10.1002/cncr.v120.4/issuetoc>

BMC Cancer: <http://www.biomedcentral.com/bmccancer/>

Breast Cancer Research and Treatment:  
<http://link.springer.com/journal/volumesAndIssues/10549>

Breast Cancer Research: <http://breast-cancer-research.com/>

Cancer Nursing Practice: <http://rcnpublishing.com/journal/cnp>

European Journal of Cancer: <http://www.ejcancer.com/>

Journal of Cancer Research and Clinical Oncology:  
<http://www.springer.com/medicine/oncology/journal/432>

Information within this bulletin covers February/March and April 2014 and draws from a number of sources including [Cancer Research UK](#), [NICE Evidence Search](#) and [Macmillan Cancer Support](#).

The full text of research referred to is available on request.

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