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Cancer Services Bulletin: May 2015

This bulletin brings together key cancer related research, news reports and journal articles to appear in March, April and May 2015.

In the News

[Health apps: a note of caution](#)

There's a running joke that if you check your symptoms on the Internet, it will probably diagnose you with cancer.

But there seems to be a growing trend that we are starting to rely more and more on digital technology to help us with our health. For example, WebMD last reported an average of 156 million unique users per month – a 33 per cent increase from the previous year.

Health apps (applications that offer health-related services on your mobile phone or tablet) are flooding the market. And the same goes for wearable technology, or 'wearables', like the Fitbit, JawBone and most recently the Apple Watch.

One recent study *in JAMA Dermatology*, which looked at various skin cancer apps, found that three out of the four apps they examined incorrectly classified at least 30 per cent of melanomas as 'unconcerning'.

The only one that was accurate wasn't a diagnostic app at all – it helped people with suspected skin cancer by sending a picture directly to a certified dermatologist.

Another study, this time *published in the British Journal of Dermatology*, examined 39 skin cancer-focused apps and found that none of them had been validated for diagnostic accuracy or usefulness by any established research methods.

[Obesity and cancer – report highlights three things the Government could do](#)

Obesity – and the nation's expanding waistlines – are never far from the headlines. And when it comes to cancer, weight is important: carrying excess weight is *an established risk factor* for the disease. In fact, after smoking, statistics show it's the *second-most important* lifestyle-related cause of cancer.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

This week, *new evidence from the World Cancer Research Fund* – an organisation with substantial expertise in cancer prevention – has concluded that as well as these types, carrying extra weight can also cause liver cancer. And what makes this report so important is that it concluded that there is the same high level of evidence for the link between liver cancer and bodyweight as there is for well-established obesity-linked cancers like breast and bowel cancer. But as well as this new evidence, in the last year research has established being overweight as a probable cause of ovarian and advanced prostate cancers.

There are no quick fixes when it comes to tackling obesity. But there is growing evidence about what works. A *recent report from management consultants McKinsey* highlighted that Governments should not seek the single ‘best’ intervention but aim ‘to do as much as possible, as soon as possible.’ The report reviewed 44 different interventions, all were found to be cost-effective in reducing obesity, and that implementing all of them together could reduce the number of people who are overweight or obese by a fifth, saving the NHS over £800m a year. However the three highlighted interventions were:

1. Helping people to stay active in their communities
2. Cut consumption of high-sugar drinks
3. Better food labelling

[The challenges of diagnosing cancers earlier: a GP’s perspective](#)

Dr Richard Roope, a practising GP and Clinical Lead for Cancer at Cancer Research UK and the Royal College of General Practice, shares his thoughts on challenges and opportunities in diagnosing cancer earlier.

“As GPs, we know that too many of our patients worry about wasting our time – a point underlined by a recent Cancer Research UK-funded study. We also know that patients in this country are more likely to worry about seeing us when they have symptoms, and perhaps put off seeing us for longer, than elsewhere. And this is felt to be one of the many factors that contribute to the UK’s relatively poor cancer outcomes, compared against similar health systems both in Europe and further afield.

Diagnosing patients earlier has a big impact on their outcomes. For example more than 9 out of ten patients (93 per cent) diagnosed with bowel cancer at the earliest stage survive for 5 years or more, compared with below one in ten (7 per cent) in the most advanced stage of the condition.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

On top of this, for the four cancer types where we have data, the financial cost of treating at an early stage early is nearly two-and-a-half times lower of that of treatment at the later stages.

[Dioxins and cancer – another piece of the chemical puzzle](#)

Dioxins have been debated extensively by the media. And a new study, published today in the journal *Breast Cancer Research*, looks at dioxins in our diet and breast cancer risk. The team analysed the women's diets, estimating their dioxin intake and following them for 15 years on average to look for differences in the amount of dietary dioxins in those who developed breast cancer. Overall, 97 per cent of women were well within the safety limits for dioxin exposure set by the WHO and the European Food Safety Authority (EFSA). And even in women whose diets had the highest levels of exposure, there wasn't an increased risk of breast cancer.

One of the most persistent myths surrounding dioxins is that they leach from plastic water bottles, causing cancer and other health issues. There is something which may seem logical in the argument that plastics give off chemicals that are detrimental to our health. The arguments are also often put forward using very emotive language, and are falsely attributed to credible sources like Johns Hopkins University in the US – all of which seem to add to its credibility. But in fact, Johns Hopkins have *refuted the claims* saying that there's no good evidence that dioxins are even present in the plastic used in water bottles, and there's no convincing scientific evidence to back up a link between using them and developing cancer.

Reference: Danjou, A., et al. (2015). [Estimated dietary dioxin exposure and breast cancer risk among women from the French E3N prospective cohort](#) *Breast Cancer Research*, 17 (1)

[Report highlights progress slowdown in cancer services](#)

The Department of Health and NHS England have "lost momentum" in improving cancer services in the last two years, *MPs have warned*. While survival continues to improve, nearly a third of people still die within a year of being diagnosed and around half do not survive for five years. This places the UK in a poor position compared to the rest of Europe, the Commons Public Accounts Committee (PAC) said. Survival and access to treatment are poor for older people in particular, which is especially concerning as three in five cancers are diagnosed in people aged over 65, the *report* said. It criticised NHS England for not understanding what lies behind the variations and not using the available data to hold poorly performing local areas to account.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

[NHS Stop Smoking Services continue to save lives](#)

Stop Smoking Services run by the NHS in England saved as many as 18,000 lives in a year, a [new report](#) suggests. The University of Stirling analysis found that Stop Smoking Services (are succeeding at reducing premature deaths. More than 724,247 people in England used the NHS services between April 2012 and March 2013 - including support and counselling, and medications. Following an evaluation of 3,000 smokers using these services, researchers found that eight in every 100 (eight per cent) people surveyed still hadn't smoked a year after giving up.

It also suggested those who took specialist one-to-one or group behavioural support were three times more likely to quit than those who only accessed GP practice or pharmacy-based help.

Linda Bauld, Stirling Professor of health policy and lead author of the study, said the findings demonstrated the need for continued financial support for NHS Stop Smoking Services.

[Low public awareness of concept of 'over diagnosis'](#)

People's awareness of the idea of 'overdiagnosis' in cancer screening is low, and they have varying opinions of how much is acceptable, according to a new study published in [The BMJ](#)

Overdiagnosis, or overdetection, of the disease is when cancers are picked up that would never have gone on to cause any harm in a person's lifetime. Researchers from the University of Oxford's Nuffield Department of Primary Care Health Sciences carried out a survey of 1,000 people in the UK to examine their views on overdetection. While only one in three (29 per cent) people had heard of overdetection before the study began, results indicated that people were more accepting of it when the potential benefit perceived from screening was higher.

The researchers looked at three hypothetical cancer screening scenarios: breast (for women), prostate (for men) and bowel (for men and women). Online respondents were given the total number of annual cases in the UK and a description of the treatment - including any adverse effects - for each type of cancer. They were also presented with two different screening scenarios: one indicated a 10 per cent reduction in cancer-specific deaths and the second, a 50 per cent reduction. On average, people accepted between 113 to 150 people being overdetected per 1000 people screened. But up to seven per cent of those polled wouldn't accept any overdetection, while as many as 14 per cent would accept overdetection of the entire screened population.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

[England smoking ban cuts children hospital admissions](#)

Thousands of children may have been spared serious illness and admission to hospital by the smoking ban in England, research has shown. The law making it illegal to smoke in public indoor places saw 11,000 fewer children being admitted to hospital each year with lung infections, the study found.

Researchers analysed more than 1.6 million hospital admissions of children aged 14 and under across England between 2001 to 2012.

They found that the introduction of the smoking ban in 2007 was followed by an immediate reduction of 13.8 per cent in the number of admissions for lower respiratory tract infections.

Admissions for upper respiratory tract infections also decreased but at a more gradual rate. The sharpest falls were seen in the most deprived children.

Reference: Been, Jasper et al. [Smoke-Free Legislation And Childhood Hospitalisations For Respiratory Tract Infections](#) European Respiratory Journal (2015): ERJ-00146-2015. 29 May 2015.

[Cancer and equality groups: key metrics 2014 \(June 2014\)](#)

In 2013, the National Cancer Equality Initiative (NCEI) and the National Cancer Intelligence Network (NCIN) published a baseline report on cancer and equality groups. The purpose was to establish a series of metrics relating to equality groups and cancer that would provide a basis to measure change, whether positive or negative. The rationale was simple: it is impossible to tackle inequalities without data to inform activity and scrutinise progress. This follow up [report](#) brings together updated information and intelligence, and highlights where differences by equality groups exist so that we can work to reduce inequalities. It also shows what improved data quality will allow us to do in the future to improve our understanding further.

[Discovery may change cancer treatment](#)

A discovery has been made that may change the principles for treating certain types of cancer. The discovery relates to the so-called telomeres that constitute the ends of human chromosomes. Short telomeres are related to unhealthy lifestyles, old age and the male gender -- all of which are risk factors in terms of high mortality. Up until now, the assumption has been that short telomeres are related to ill health. The challenge for researchers worldwide has therefore been to



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

find out whether or not the short telomeres were indeed a signifier or an indirect cause of increased mortality.

By studying more than 64,000 Danes from the Oesterbro Study and the Herlev/&Oesterbro Study -- the largest telomere-study ever conducted -- the researchers have reached the conclusion that the genetically determined length of telomeres has no influence on mortality in general. However, humans with genetically long telomeres have an increased risk of dying from cancer -- which is the exact opposite of what the researchers expected to find. And this new knowledge may thus influence future cancer treatments.

[Cancer rates among patients with hepatitis C are increased compared to those not infected](#)

New results show that cancer rates in patients with the hepatitis C virus (HCV) were significantly increased compared to the non-HCV cohort. The researchers suggest an extrahepatic manifestation of HCV may be an increased risk of cancer.

In the HCV cohort there were 2,213 cancer diagnoses (1,524/100,000) during the 5-year period and 1,654 cancer diagnoses when liver cancer was excluded (1,139/100,000). In the non-HCV cohort there were 84,419 cancer diagnoses (605/100,000) during the same 5-year period and 83,795 (601/100,000) when liver cancer was excluded. When all cancers are considered the rate is 2.5 times higher in the HCV cohort; when liver cancers are excluded, the rate is still almost 2 times higher.

[Childhood cancer survivors more likely to claim social security support as adults](#)

Childhood cancer survivors are five times more likely to have enrolled in a Social Security disability assistance program than other citizens, a new American study concludes. "The long-term impact of cancer can affect other issues besides health outcomes," said the lead author on the study. "We need to do a better job of helping people function throughout their lives, not just when they're finishing their cancer therapy."

The study looked at health insurance surveys completed in 2011-2012 by a random sample of 698 childhood cancer survivors that were diagnosed between the ages of 0-20--today they range in age from their 20s to early 60s. The patients are part of a National Cancer Institute initiative, called the Childhood Cancer Survivor Study, which has followed more than 14,000 children and



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

adolescents since 1994 who were diagnosed with cancer and survived for at least five years after diagnosis. A comparison group of 210 siblings without cancer also responded to the survey and were used as a control for the study.

Kirchhoff said they looked at current or former enrollment on two federal disability programs: SSI for people with limited income who have no prior work history, and Social Security Disability Insurance (SSDI), which pays disability benefits to adults ages 18 years and older who have worked and paid social security taxes.

They found that a total of 13.5 percent of survivors had ever been enrolled on SSI, while 10 percent had ever been enrolled on SSDI. This was significantly higher than was found for the comparison group, 2.6 percent on SSI and 5.4 percent on SSDI. Survivors were also currently enrolled in SSI more frequently than the U.S. population, 7.3 percent versus 2.5 percent, respectively.

Lung

[No association between lung cancer risk in women, reproductive history or hormone use](#)

The Women's Health Initiative Studies, a large prospective study of lung cancer, found no strong associations between lung cancer risk and a wide range of reproductive history variables and only revealed weak support for a role of hormone use in the incidence of lung cancer.

In the United States 40% of the 160,000 deaths from lung cancer are women. In men 90% of lung cancer deaths are associated with tobacco usage; however in women this number is around 75-80%. Female never-smokers are more likely to develop lung cancer than male never-smokers and the histological subtype of lung cancer is different between men and women. Women have a better prognosis with a 5-year survival rate of 20% compared to 15.4% for men. Given these gender differences there is a need to understand the potential role of reproductive factors and hormone use in determining lung cancer risk in women.

The Women's Health Initiative Observational Study and Clinical Trials enrolled a geographically and ethnically diverse cohort of 161,808 postmenopausal women age 50-79 years between 1993 and 1998 at 40 centers across the United States. Reproductive history, oral contraceptive use, and hormone therapy replacement was evaluated in the 160,855 women eligible to be included in the analysis. Incident lung cancer was observed in 2,467 and the median follow-up was 14 years.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

Schwartz, A.G. et al. (2015) [Hormone Use, Reproductive History and Risk of Lung Cancer: The Women's Health Initiative Studies](#). *Journal of Thoracic Oncology*. [Post Acceptance: April 3, 2015]

Breast

[Gene mapping reveals soy's dynamic, differing roles in breast cancer](#)

Scientists have mapped genes affected by phytonutrients in soy, and have found that minimally processed soy flour suppresses breast cancer, while purified isoflavones stimulate genes that accelerate tumor growth, raising questions about soy supplements' safety for postmenopausal women.

Scope - Soy flour diet (MS) prevented isoflavones from stimulating MCF-7 tumor growth in athymic nude mice, indicating that other bioactive compounds in soy can negate the estrogenic properties of isoflavones. The underlying signal transduction pathways to explain the protective effects of soy flour consumption were studied here.

Methods and results - Ovariectomized athymic nude mice inoculated with MCF-7 human breast cancer cells were fed either MS or purified isoflavone mix (MI), both with equivalent amounts of genistein. Positive controls received estradiol pellets and negative controls received sham pellets. GeneChip-Human-Genome-U133-Plus-2.0 Array platform was used to evaluate gene expressions, and results were analyzed using bioinformatics approaches. Tumors in MS-fed mice exhibited higher expression of tumor-growth-suppressing genes *ATP2A3* and *BLNK*, and lower expression of oncogene *MYC*. Tumors in MI-fed mice expressed higher level of oncogene *MYB* and lower level of *MHC-I* and *MHC-II*, allowing tumor cells to escape immunosurveillance. MS-induced gene expression alterations were predictive of prolonged survival among estrogen-receptor-positive breast cancer patients, whilst MI-induced gene changes were predictive of shortened survival.

Conclusion - Our findings suggest dietary soy flour affects gene expression differently than purified isoflavones, which may explain why soy foods prevent isoflavones-induced stimulation of MCF-7 tumor growth in athymic nude mice.

Liu, Y. et al. [Isoflavones in soy flour diet have different effects on whole-genome expression patterns than purified isoflavone mix in human MCF-7 breast tumors in ovariectomized athymic nude mice](#). *Molecular Nutrition & Food Research*, 2015



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

[Men with high oestrogen levels could be at greater risk of breast cancer](#)

Men with naturally high levels of the female hormone oestrogen may have a greater risk of developing breast cancer, according to research by an international collaboration including Cancer Research UK published recently in the [Journal of Clinical Oncology](#).

This is the first time a link between oestrogen levels in the blood and male breast cancer has been identified, despite its connection to breast, womb and ovarian cancers in women.

Men with the highest levels of oestrogen were two and a half times more likely to develop breast cancer than men with the lowest levels of the hormone.

Reference: Brinton et al. [Prediagnostic sex steroid hormones in relation to male breast cancer risk](#). *Journal of Clinical Oncology*.

[Researchers uncover how breast cancer can spread to bone](#)

Breast cancer cells can release a chemical that alters the structure of bones, making it easier for the cancer to spread, according to new laboratory research.

If confirmed in patients with breast cancer, it could lead to new ways to prevent the disease from spreading.

[Building on previous findings](#), the scientists, based at the University of Sheffield, found that when breast cancer cells release a chemical called lysyl oxidase (LOX), it makes bone tissue a fertile ground for cancer cells to spread or metastasis.

An estimated 85 per cent of secondary breast cancers spread to the bone, and this can impact the success of treatment.

Reference: Cox, Thomas et al. [The Hypoxic Cancer Secretome Induces Pre-Metastatic Bone Lesions Through Lysyl Oxidase](#). *Nature* (2015)



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

Prostate

['Targeted' ovarian cancer drug could also help certain men with prostate cancer](#)

Olaparib was licensed in December for women with ovarian cancer and inherited BRCA mutations, but the new research suggests it could also benefit men with genomic faults within their tumours.

Researchers told the American Association of Cancer Research (AACR) conference in Philadelphia that up to 30 per cent of men with advanced prostate cancer had tumours with defects in repairing DNA -- and these responded particularly well to olaparib. The men most likely to benefit could be identified by genetic testing to look for mutations in genes responsible for DNA repair -- including the BRCA genes and the gene ATM.

Link to the research: [Mateo et al, DNA repair defects and antitumor activity with PARP inhibition: TOPARP, a phase II trial of olaparib in metastatic castration resistant prostate cancer, AACR conference 2015](#)

[Earlier chemotherapy extends lives of men with advanced prostate cancer](#)

A [UK-led trial](#) has found that combining a chemotherapy drug with hormone treatment extended the lives of men with advanced prostate cancer.

The drug, called docetaxel, is typically only offered if standard hormone treatment has failed. But these findings, that will be presented at the American Society of Clinical Oncology (ASCO) conference show treating patients whose cancer has already spread earlier extended survival by almost two years.

Experts say the results provide sufficient evidence to suggest that the treatment should be offered to newly diagnosed men whose disease has already spread.

In the study of 2,962 men, those who received docetaxel plus standard hormone therapy at the start of their treatment lived an average of 10 months longer than those who received only hormone treatment.

For patients whose cancer had already spread beyond the pelvis, the average increase in life expectancy was 22 months.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

The results form part of the [STAMPEDE trial](#) (Systemic Therapy in Advancing or Metastatic Prostate Cancer: Evaluation of Drug Efficacy), the largest trial of its kind for men with prostate cancer.

More detail at [Cancer Research UK](#)

Bowel

[Advice on being active should be routine in bowel cancer care](#)

It's well established that leading an active lifestyle can reduce your risk of developing bowel cancer, as well as a range of other cancers. But what about *after* diagnosis? Intuitively, you might think that 'rest is best' for cancer patients recovering from treatments that can be both mentally and physically exhausting. Over years the evidence has begun to build that being active *after* cancer treatment can significantly [reduce fatigue, boost physical health and well-being, and improve quality of life](#). And there's even promising new evidence that being active might improve a person's chances of surviving the disease, and [cut the risk of the cancer coming back](#).

The study looked at information from a large national questionnaire of bowel cancer patients, including information about how active they were, and whether they were given any advice about being active. Worryingly – despite all the evidence of its benefit – we found that the majority of bowel cancer patients didn't remember being given any information about being active.

Link to the research: [Lo et al. Fisher et al. Recall of PA advice was associated with higher levels of physical activity in colorectal cancer patients](#). BMJ Open DOI: 10.1136/bmjopen-2014-006853

[Aspirin's anti-cancer effects depend on a person's genetic make-up](#)

A person's genetic make-up might determine whether they could benefit from taking aspirin to prevent bowel cancer, according to a US study. The findings also suggest that the drug could even increase cancer risk in a minority of people – although experts cautioned that more research was needed to confirm this.

The team combined the results of several previous studies on aspirin and other similar drugs – collectively called non-steroidal anti-inflammatory drugs, or NSAIDs – comprising more than 8,600 people who went on to develop bowel cancer, and a similar number who remained healthy.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

They then analysed participants' DNA records, and looked at whether certain genetic variants, known as single-nucleotide polymorphisms, were more or less common in each group.

As well as confirming the overall benefits of aspirin in preventing the disease, they found that nearly one in 10 study participants (nine per cent) who had a particular genetic variation received no benefit from the drug.

And a further four per cent – one in 25 – who carried one of two other DNA variants appeared to have an increased likelihood of going on to develop bowel cancer after taking aspirin.

Link to the research: Nan H, Hutter CM, Lin Y, et al. [Association of Aspirin and NSAID Use With Risk of Colorectal Cancer According to Genetic Variants](#). *JAMA*. 2015;313(11):1133-1142. doi:10.1001/jama.2015.1815.

[A healthy lifestyle before diagnosis may improve bowel cancer survival](#)

UK researchers claim living a healthy lifestyle before diagnosis could improve a person's chances of surviving bowel cancer.

Findings from Imperial College London suggest eating a balanced diet, keeping physically active and maintaining a healthy weight were associated with an improved likelihood of survival.

The large European Prospective Investigation into Cancer and Nutrition (EPIC) study, published in *BMC Medicine*, analysed data from 520,000 men and women from 10 countries over six years. Of these men and women from the study, 3,292 were diagnosed with bowel cancer.

Lead researcher, Dora Romaguera, from Imperial College London wanted to investigate if the same healthy lifestyle choices that help prevent bowel cancer could also improve the survival rates of people diagnosed with the disease.

The study participants completed questionnaires about their medical history, diet and lifestyle at the start of the study, while height and weight measurements were also taken.

Having a healthy weight and high consumption of plant foods had the strongest associations with survival. There was also an association seen with women who breastfed and improved survival.

Reference: Romaguera et al. [Pre-diagnostic concordance with the WCRF/AICR guidelines and survival in European colorectal cancer patients: a cohort study](#) *BMC Medicine* (2015) 13:107



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

Skin

[Pensioners seven times more likely to get deadly skin cancer than 40 years ago](#)

People over 65 are around seven times more likely to develop malignant melanoma compared to 40 years ago, according to new figures released by Cancer Research UK today (Monday).

"Many cases of malignant melanoma, the most serious form of skin cancer, are preventable by taking precautions in the sun and making sure you don't burn." - Dr Julie Sharp

Older men in Great Britain are around 10 times more likely to be diagnosed with this kind of life-threatening skin cancer than their parents' generation while older women are around five times more likely to develop this disease.

The [most recent figures](#) show that on average around 5,700 pensioners are now diagnosed with melanoma each year compared with just 600 in the mid 1970s.

While age is one of the biggest risk factors for melanoma the huge increase in pensioners being diagnosed with the disease is likely to be linked to the cheap package holiday boom dating from the 1960s, and the desirability of having a tanned appearance even at the expense of painful sunburn.

Getting sunburnt just once every two years can triple your risk of developing malignant melanoma and even reddening of the skin is a sign of damage.

[Melanoma's 'safe haven' targeted for shut-down](#)

Around half of melanomas are caused by a mutation in a gene called BRAF. Drugs called BRAF inhibitors treat these melanomas by targeting the faulty gene. But these cancers can quickly develop resistance to these targeted treatments.

Scientists at the Francis Crick Institute, ([link is external](#)) funded by Cancer Research UK, and at the Cancer Research UK Manchester Institute ([link is external](#)) have discovered that a side effect of BRAF inhibitors is that they prompt healthy cells to form a 'safe haven' shielding melanoma cells from cancer drugs. So even if some cancer cells are destroyed, the protected cancer cells may survive – and the disease can recur in a form that is untreatable.

Carried out in cells in the laboratory, in mice and in samples from patients' tumours, the researchers showed this 'safe haven' lets melanoma cells turn on a parallel set of cell signals that



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

helps them survive. By adding a second experimental drug that blocks this alternative survival route by targeting a protein called FAK, the researchers discovered that resistance to BRAF inhibitors can be overcome. This combination of two drugs increased cell death and slowed growth in cell samples, and also stopped tumours from growing larger in mice.

Link to research: Hirata et al., [Intravital Imaging Reveals How BRAF Inhibition Generates Drug-Tolerant Microenvironments with High Integrin \$\beta\$ 1/FAK Signaling](#), *Cancer Cell* (2015)

Pancreatic

[Pancreatic cancer risk linked to weak sunlight: Harm may come from low vitamin D](#)

Researchers at University of California San Diego School of Medicine report pancreatic cancer rates are highest in countries with the least amount of sunlight. Low sunlight levels were due to a combination of heavy cloud cover and high latitude.

Researchers studied data from 107 countries, taking into account international differences and possible confounders, such as alcohol consumption, obesity and smoking. "While these other factors also contribute to risk, the strong inverse association with cloud-cover adjusted sunlight persisted even after they were accounted for," said Garland.

Link to research: Cedric F. Garland, et al., [Cloud cover-adjusted ultraviolet B irradiance and pancreatic cancer incidence in 172 countries](#). *The Journal of Steroid Biochemistry and Molecular Biology*, 2015;

[Identifying patients most at risk of developing pancreatic cancer](#)

When people learn they have a lesion in their pancreas that could become pancreatic cancer, they often request frequent CT scans and biopsies, or surgery. Often the lesion is nothing to worry about. A team of international physicians has developed a profile of the patient most at risk of developing lesions that are most likely to develop into cancer.

Link to research: Maria Moris, et al., [Risk factors for malignant progression of intraductal papillary mucinous neoplasms](#). *Digestive and Liver Disease*, 2015; DOI: 10.1016/j.dld.2015.03.007



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

Brain

[Tetanus shot improves patient survival with brain tumor immunotherapy](#)

An innovative approach using a tetanus booster to prime the immune system enhances the effect of a vaccine therapy for lethal brain tumors, dramatically improving patient survival, according to a study led by Duke Cancer Institute researchers.

In a small human study, they enrolled 12 brain tumor patients, with half randomly assigned to receive a tetanus booster and the other half a placebo injection. The next day, patients in both groups were then given the dendritic cell immunotherapy. Researchers did not know which therapies the patients received.

Patients randomized to get a tetanus shot showed a significant increase in survival from the time of pre-conditioning compared to patients receiving just the dendritic cell therapy, with half living from 51 to 101 months, compared to 11.6 months for the comparison group. One patient from the tetanus group continues to have no tumor growth and is still alive at eight years after the treatment.

Link to the research: Duane A. Mitchell, et al., [Tetanus toxoid and CCL3 improve dendritic cell vaccines in mice and glioblastoma patients](#). Nature, 2015; DOI: 10.1038/nature14320

Ovarian

[UK researchers improve ovarian cancer detection test](#)

Measuring changes in the level of a protein in the blood detects more cases of ovarian cancer than a single measurement on its own, according to the research team behind a [large screening trial](#).

The new method, detailed in the [Journal of Clinical Oncology](#), appears to be able to detect twice as many women with the disease than existing techniques, and could ultimately lead to routine ovarian screening.

But experts cautioned that the overall results of the trial need analysing before they will know for sure whether screening can reduce deaths from ovarian cancer.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

Levels of the CA125 protein have long been used to test for ovarian cancer, but converting this knowledge into a reliable screening test has proved elusive.

The team, led by researchers at University College London (UCL), developed a calculation of ovarian cancer risk based on changing levels of the protein in women's blood.

They used the method on samples taken from women on the [UK Collaborative Trial of Ovarian Cancer Screening](#) (UKCTOCS) – a 14-year-long trial of more than 200,000 UK women.

The test correctly identified more than eight out of 10 (86 per cent) women with ovarian cancer.

The conventional test, which relies on a fixed cut-off point for CA125 levels to detect the disease, generally only identifies about four in 10 women, the researchers say.

Reference: [Risk Algorithm Using Serial Biomarker Measurements Doubles the Number of Screen-Detected Cancers Compared With a Single-Threshold Rule in the United Kingdom Collaborative Trial of Ovarian Cancer Screening](#) *Journal of Clinical Oncology* Published online before print May 11, 2015

[Chemotherapy before surgery benefits patients with advanced ovarian cancer](#)

Women with advanced ovarian cancer have fewer side effects and tend to have a better quality of life if given chemotherapy before surgery, according to a Cancer Research UK study published in *The Lancet*.

The CHORUS trial, conducted at the Medical Research Council Clinical Trials Unit at University College London, challenged the international standard for treating advanced ovarian cancer.

550 women with the disease took part in the trial, with 276 given the standard treatment of surgery followed by six cycles of chemotherapy, and 274 had surgery after three cycles of chemotherapy.

The Cancer Research UK funded trial found that post-surgery complications and death within 28 days of surgery was most common among women given surgery first. Women who received delayed surgery suffered fewer symptoms, a reduction in overall side effects and had a lower death rate.

Delaying surgery also reduced the amount of time the patient spent in the hospital after surgery – a benefit to both the patient and NHS resources.



A library & knowledge service for all NHS staff in Rotherham

Cancer Services Bulletin: May 2015

The CHORUS trial is the largest surgical trial of its kind in the UK and second largest in the world. It aimed to see if this new treatment strategy was a good alternative to the traditional approach.

Reference: Kehoe et al. [Primary chemotherapy versus primary surgery for newly diagnosed advanced ovarian cancer \(CHORUS\): an open-label, randomised, controlled, non-inferiority trial](#). The Lancet.

Womb

[Eating a Mediterranean diet could cut womb cancer risk](#)

Women who eat a Mediterranean diet could cut their risk of womb cancer by more than half (57 per cent), according to a study published recently in the [British Journal of Cancer](#).

The Italian researchers looked at the diets of over 5,000 Italian women to see how closely they stuck to a Mediterranean diet and whether they went on to develop womb cancer.

The team broke the Mediterranean diet down into nine different components and measured how closely women stuck to them. The diet includes eating lots of vegetables, fruits and nuts, pulses, cereals and potatoes, fish, monounsaturated fats but little meat, milk and other dairy products and moderate alcohol intake.

Researchers found that women who adhered to the Mediterranean diet most closely by eating between seven and nine of the beneficial food groups lowered their risk of womb cancer by more than half (57 per cent).

Those who stuck to six elements of the diet's components reduced their risk of womb cancer by 46 per cent and those who stuck to five reduced their risk by a third (34 per cent).

But those women whose diet included fewer than five of the components did not lower their risk of womb cancer significantly.

Reference: Filomeno et al. [Mediterranean diet and risk of endometrial cancer: a pooled analysis of three Italian case-control studies](#). British Journal of Cancer 2015.153



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 October and November 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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The evidence you need