



HealthWatch

Registered Charity no. 1003392

Established 1992

for treatment that works

Newsletter 86 July 2012

“GAGGING” OF INDEPENDENT EXPERTS OVERTURNED IN FRANCE

TWO FRENCH public health experts are celebrating triumphs in the courts after devastating decisions were overturned recently. Both have fearlessly taken high profile and controversial stands on several public health issues, and look set to continue to do so.

Alain Braillon was a tenured senior consultant who had written or spoken publicly on several topics including prostate cancer screening and the power of the tobacco and alcohol lobbies. In December 2009 he was sacked from his post at Amiens University Hospital by a few members voting through an unscheduled agenda item at the hospital board. To his horror, the National Management Centre (France’s counterpart to the UK’s Department of Health) then supported the sacking, despite the fact that 70% of the health officials voted against his dismissal. Braillon was not given the opportunity to be present nor to defend himself at this appeal meeting.^{1,2} Regional programmes he had been conducting, including work helping smoking cessation for pregnant women, the prevention of perinatal transmission of hepatitis B virus infection and the management of suicide attempts were suddenly stopped.³

For two years Braillon fought the decision. Finally, on May 10, 2012, the Paris Administrative Court cancelled the decision of the Ministry of Health which had fired him. The judgment notes that the abolition of his post had been illegal.

Dr Braillon is delighted that his name has been cleared, and is ready for his new life. However, he says, “My team and the programs I ran for the patients are all destroyed. As for my grants of more than €75,000, it is impossible to obtain information about where the money is now.”

Meanwhile his more senior colleague Gérard Dubois, a professor of public health at Amiens University Hospital and a past recipient of his country’s Legion d’Honneur for his work with anti-smoking legislation, has also enjoyed satisfaction. In an unrelated action, in November 2009 he was sued for libel by the French tobaccoists’

union because he had stated on TV that cigarettes kill two smokers a year for every tobaccoist.¹ Denied support from his own university, he was supported in his fight by a non-governmental organisation, “Comité National Contre le Tabagisme”. The French tobaccoists lost the case. When the tobaccoists went before the Court of Appeal in November 2011 their claim for damages was rejected.

According to Braillon, the tobacco industry’s influence on Sarkozy’s government and French administration has been deadly, with tobacco sales levelling off between 2004 and 2011 and prevalence of daily smoking rising from 27.1 % in 2005 to 29.1 in 2010.⁴ Such trends are an exception among developed countries, where sales and use of tobacco are falling steadily.

“There is a constant need to put pressure on governments to adopt or scale up appropriate policies. Tobacco control needs public health experts who are independent of commercial interests,” says Braillon.

Mandy Payne

References

1. Braillon A, Dubois G. Whistleblowing and the abuse of libel law: a view from France. *Healthwatch Newsletter* October 2010, issue 79.
2. Lee SS. The power of one and saving private Braillon. *Liver Int* 2012;**32**(1):1.
3. Benkimoun P. Dr’s sacking is a setback for French public health, supporters say. *BMJ* 2010;**340**:c711.
4. Braillon A, Mereau AS, Dubois G.[Tobacco control in France: Effects of public policy on mortality.] *Presse Med* 2012;**41**(7-8):679-81.

DIARY DATE: The 2012 HealthWatch Annual General Meeting will take place on the evening of Tuesday 23rd October at the Medical Society of London, Chandos Street

Contents

NEWS	<i>France courts clear experts; Extending the research project; News in Brief</i>	1, 2
EVIDENCE	<i>Roger Fiskens responds to reports questioning the true value of “evidence-based medicine”</i>	3, 8
NUTRITION	<i>Vitamin supplements:kill, cure or completely pointless? David Bender reviews the evidence</i>	4, 5
MEDIA	<i>Fears that dental x-rays could cause cancer are examined by Keith Isaacson</i>	6
BOOK REVIEWS	<i>John Illman takes on two new books about subjects that really matter</i>	7
LAST WORD	<i>A hypnotists’ claims for treating hypertension raise James May’s blood pressure</i>	8

news

EXTENDING THE RESEARCH PROJECT

MOST OF YOU will be aware that the HealthWatch-sponsored study of the regulation of health claims* attracted considerable media attention. The study leader Les Rose has been heavily involved in discussions since the study was published, and we now have a much better understanding of how the law works—or rather doesn't work. So now is the time for a follow-up study. We intend this to be much bigger, and with a more rigorous design. To achieve the former, we need more people to participate. The first study was very successful with only 12 people fully active. What could we achieve with 50 people? Yet that is less than half our current membership.

The next study is likely to target "alternative" therapies and diagnostic practices that can't be deemed to be foods or food supplements. The aim is to constrain Trading Standards against diverting complaints to older, less effective legislation. We consider that the primary legislation comprises the Consumer Protection Regulations 2008, and the Enterprise Act. We should also try to avoid targeting

traders who have "home authority" deals with Trading Standards, so that we get a better assessment of the consistency of enforcement across the UK. But this will be a participative project, and we are avidly interested in suggestions from the team that we intend to build.

But of course, there is much more that we could do than this further study. HealthWatch could be a powerful force for better health outcomes, and the reform of the NHS presents an opportunity. Therefore we want to form a group of active members, who would like to do more than simply attend the AGM and read the newsletter. This is our invitation to you to join that group. If you care about the cause of evidence based health care, please email the secretary David Bender (david.bender@btinternet.com), and he will add you to the list. We very much look forward to working with you.

The HealthWatch Committee

*abstract available at:

<http://mlj.rsmjournals.com/content/80/1/13.abstract>

ASA's "high volume" of homeopathy complaints

THE ADVERTISING Standards Authority have asked not to receive any more complaints about claims on homeopathy websites pending the results of their investigations currently under way. On their homepage "Hot Topics" section they announce, "The high volume of complaints and the number of marketers we need to work with means we've taken a different approach to our normal investigation process ... We've contacted marketers of homeopathic treatments and services about whom we've received a com-

plaint and advised them to avoid making efficacy claims for treatments where robust evidence is not held to back them up. Specifically, we have told them to remove marketing claims that refer to, or imply, the efficacy of homeopathy for treating or helping specific health conditions."

Mandy Payne

See: <http://www.asa.org.uk/Resource-Centre/Hot-Topics/Homeopathy-complaints.aspx>

NEWS IN BRIEF

AFTER SERVING 19 years in the post of professor of complementary medicine at the Peninsula Medical School, Exeter, Edzard Ernst retired to become emeritus professor, on 12 June. Critics who expect him to fall silent will be disappointed, as he wrote in his blog recently, "I will continue to write and lecture; if anything, I will become more outspoken regarding the truth about certain issues."

See: <http://www.pulsetoday.co.uk/comment-blogs-/blogs/14087591/i-m-retiring-so-critics-should-watch-out>

A MEDICAL director of the Breakspear Medical Group, a private day clinic in Hemel Hempstead that claims to treat allergy and environmental illnesses, has been disciplined by a British Medical Council Fitness to Practice Panel. The panel concluded that Dr Jean Monro had administered inappropriate and potentially harmful chelation therapy unnecessarily after diagnosing lead toxicity using a urine test that has no demonstrated benefit in such a diagnosis. The formal warning bars Monro from doing the test or chelation therapy. In a separate case, in May the Advertising Standards Authority advised the Breakspear clinic to stop implying in their advertisements that chelation was effective against cerebrovascular disease, chronic fatigue syndrome, autism and ageing.

See: <http://www.bmj.com/content/344/bmj.e2993> and http://asa.org.uk/ASA-action/Adjudications/2012/5/Breakspear-Medical-Group-Ltd/SHP_ADJ_175882.aspx

SINCE THEIR inception, America's National Center for Complementary and Alternative Medicine and its predecessor agencies have spent \$1.6 billion, but it has not all been well spent, writes Paul Offit in JAMA. Many studies it sponsored lacked a

sound biological underpinning, which should be an important requirement for funding. He calls on NCCAM to either refrain from funding studies of therapies that border on mysticism; redefine its mission to take account of the physiology of the placebo response; or shift its resources to other NIH institutes.

Offit P. Studying complementary and alternative therapies. JAMA 307:1803-1804, 2012.

See: <http://jama.ama-assn.org/content/307/17/1803.extract>

FRIENDS OF Science in Medicine continue to improve their new website and have produced a second newsletter with updates on media coverage and actions to promote evidence-based teaching in Australian universities.

<http://www.scienceinmedicine.org.au/>

A MEDICAL professor at the University of California-Davis was threatened with cuts in title and funding, and possible legal action, after he wrote an article criticizing a campus event promoting prostate cancer screening. In a 2010 co-written opinion piece in the San Francisco Chronicle, Michael Wilkes had explained research showing that PSA blood tests for prostate cancer may lead to unnecessary treatments that cause negative side effects, and suggested that doctors involved in the screening could have a conflict of interest. This June, the faculty's governing panel called for medical school executives behind the threatening communications to apologize and to, "take concrete steps to prevent future violations of rights of academic freedom."

Los Angeles Times June 14, 2012.

See: <http://articles.latimes.com/2012/jun/14/local/la-me-ucdavis-20120614>

DO WE KNOW WHAT WE MEAN BY EVIDENCE-BASED MEDICINE?

“EVIDENCE-BASED MEDICINE: scientific teaching or belief-based preaching?” This rather provocative title from a recent article in the *Journal of Evaluation in Clinical Practice*¹ highlights the need, when discussing evidence-based medicine (EBM), to remain vigilant as to its true meaning. A widely-cited definition of EBM, and one that is still offered on the website of the Centre for Evidence-Based Medicine in Oxford, is that of Sackett *et al* in their *BMJ* editorial of 1996:² “... the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients”. Naturally enough, the ideas behind EBM have been employed beyond the sphere of individual patient care, for example to try and improve the practice of population screening, immunisation, diagnostic testing or various aspects of public health policy.

From an early stage EBM has been criticised for being too narrow or too rigid, for ignoring patient preferences, for downplaying “clinical judgement” or for encouraging the use of “cookbook medicine”. Indeed, Sackett and colleagues were aware of these criticisms and sought to counter them: in their 1996 article² they say, “The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research.” And also, “Without clinical expertise, practice risks becoming tyrannised by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient. [On the other hand], without current best evidence, practice risks becoming rapidly out of date, to the detriment of patients.”

“... some critics assert that there is, ‘a lack of good evidence that teaching EBM improves the quality of medical education or the subsequent care of patients’.⁵ If this is true, it is a serious problem.”

To most of us all of this sounds like simple common sense; however, criticisms of EBM have not gone away and have, in turn, led supporters of EBM to try and broaden its appeal (some might say dull its cutting edge) by attempting to include in its definition a number of other features of what might properly be termed “best practice” or “conscientious practice”. Sackett *et al* begin this process of dilution when they refer to, “integrating *individual clinical expertise* (my italics) with the best available external ... evidence”. This confusion between evidence-based practice and best practice has also affected nursing: in 2009 Scott & McSherry³ defined evidence-based nursing as, “an ongoing process by which evidence, nursing theory and the practitioners’ *clinical expertise* are critically evaluated and considered, in conjunction with *patient involvement* (my italics again), to provide delivery of optimum nursing care for the individual.” There seems to me to be a logical trap here: tradition-based, anecdote-based or opinion-based practice, with which EBM is appropriately contrasted, may well involve the use of “clinical expertise” and “patient involvement”; these items are neither inside nor outside EBM. Rather, it is the use of current best research evidence, and the fact that such use is explicit, which distinguishes the practice of EBM from other forms of healthcare practice.

Some critics go beyond merely saying that EBM is incomplete or too narrow and question the validity of prioritising evidence above other reasons to make a particular decision.⁵ I must say that I find this sort of approach both illogical and profoundly depressing: the whole history of western philosophy over the last four hundred years and of science in general is one of getting away from received authority, ancient tomes of wisdom and the teachings of “experts” in favour of going out and looking, by means of well planned studies and experiments, for the facts behind the problems that we face. To give a simple example, many doctors of my generation were

brought up to believe strongly in the value of applying Eusol (essentially a form of dilute bleach) to wounds in order to keep them clean and promote healing. This policy was based on observations made in the Napoleonic War and other conflicts and was maintained for many decades until it was shown beyond doubt that Eusol inhibited fibroblast growth and activity and therefore actually prevented wound healing.

One further complication is that EBM is, in essence, a tool for arriving at an optimised clinical decision, almost always about what will provide the best biomedical outcome (survival, relief of symptoms, etc.), but the decision can be confirmed and implemented in several ways, for example, 1) the doctor tells the patient that treatment X should be carried out and makes it clear that he (the doctor) is not inclined to brook any argument; 2) the doctor and patient assess and discuss the decision together in terms of what matters most to each of them; 3) the doctor provides information to the patient but makes no further attempt to influence the decision. Thus an EBM approach may generate an excellent decision which is clumsily or badly implemented; this is not the fault of EBM, though it remains a focus of criticism.

As far as the development of EBM is concerned, the belief that it needed to be improved by including such things as, “patients’ opinions and priorities” and “clinical experience and expertise” in the definition have led to the development of newer “models” of EBM, often including the use of Venn-diagram type illustrations,⁴ for which no explanation or justification is given. Such, frankly, rather woolly-minded developments of the idea of EBM should be viewed with considerable scepticism and Charles and colleagues are to be commended for highlighting this issue.

INTRIGUINGLY, it is implicit in the idea of EBM (or so it seems to me) that the very process of implementing and teaching EBM-based practice should itself be subject to evaluation and, indeed, some critics assert that there is, “a lack of good evidence that teaching EBM improves the quality of medical education or the subsequent care of patients”.⁵ If this is true, it is a serious problem.

In summary, I don’t think that I can improve on Sackett and colleagues’ definition of evidence-based medicine² and I would also commend their remarks about what EBM is not: it is not impossibly hard to practise, it is not “cookbook medicine” which ignores the needs and wishes of individual patients and it is not, or should not be, simply an excuse to cut costs. Nevertheless it is important for those of us who favour EBM to remember that it is only part of good clinical practice, that the development of best practice may involve the formal, critical appraisal of other aspects of clinical decision-making and, most important of all, that the promotion of both EBM-based practice and the teaching of EBM are areas which themselves require evaluation.

Roger Fiskien
Retired consultant physician
North Yorkshire

See page 8 for references

nutrition

“FIVE-A-DAY” versus THE SUPPLEMENTS THAT CAN KILL



THE EVIDENCE that eating five portions of fruit and vegetables a day protects against cancer and heart disease is very strong. In the greengrocery section of my local supermarket most packs of fruit and vegetables say how much of each constitutes one of your “five-a-day”. Most of the research on the beneficial effects of fruit and vegetable consumption has focussed on antioxidants because of the causative role of oxidative damage from free radicals in cancer and atherosclerosis. As a result, supplements of antioxidant nutrients such as vitamins C and E, β -carotene and selenium are widely available, commonly at much higher levels than reference intakes (RDA or DRV).

However, the results from randomised controlled trials (RCTs) of antioxidant supplements have generally been at best disappointing and in many cases have shown increased mortality among those taking the supposedly protective supplements. A recent commentary published in the *Journal of the National Cancer Institute*¹ drew attention to the many RCTs of vitamin and mineral supplements that have shown either no protective effect against cancer or increased mortality. Indeed, very few antioxidant intervention trials have shown a beneficial effect, and most of those were conducted in populations with low intakes of antioxidant (and other) nutrients.

Supplements that could kill

One of the first “disappointing” intervention trials that I remember was the 1996 Cambridge Heart and Antioxidant Study² (perhaps well abbreviated to CHAOS). I had been convinced by the epidemiology (e.g., from Professor Gey at the University of Berne³) that relatively high plasma concentrations of vitamin E, above what could be achieved from a normal diet, were protective against atherosclerosis and heart disease. I started to take vitamin E supplements. Then the CHAOS study results were published.² The good news was that vitamin E supplements led to a reduction in the number of non-fatal heart attacks (each of which causes irreversible damage to heart muscle), but the bad news was that there was a significant increase in fatal heart attacks among those taking vitamin E supplements. I stopped taking the supplements.

In 1994 the Nutrition Society was excited that one of the lead authors of the large trial of supplementation with vitamin E and β -carotene as protection against lung cancer had agreed to speak at a symposium held in Cork. This was a multi-million dollar study conducted in Finland involving 10,000 smokers, who were randomly allocated to receive vitamin E, β -carotene, both or a placebo. The presentation was excellent, but unfortunately for the speaker, all of us in the audience had already seen at least reports in the press, if not the full paper.⁴ There was increased death from lung cancer among those taking β -carotene supplements, as well as increased death from a number of other cancers.

A second study of β -carotene (this time together with preformed vitamin A, the CARET trial in USA) involved two groups of people at risk of lung cancer: smokers and those exposed industrially to asbestos dust. According to the trial design, 18,000 people were to be followed for 6 years, a design that would have sufficient power to detect a 23% decrease in the incidence of lung cancer.⁵ After three years the trial was halted; the paper in *Journal of the National Cancer Institute*⁶ was headlined, “Beta carotene fails to prevent cancer in two major studies: CARET intervention stopped”. You do not halt a major (multi-million dollar) intervention trial because there are not yet any significant positive results. Reading the paper⁶ we learn that the trial was stopped because there was a 46% excess mortality from lung cancer in the active treatment group. This is certainly a valid (and indeed ethically imperative) reason to halt the

trial of a supposedly protective supplement.

I was invited to speak in a debate on antioxidants at the 2005 meeting of the Association of Clinical Biochemists, and had resigned myself to spending the whole of the Christmas 2004 vacation reading all the individual reports of intervention trials since the CHAOS study². To my immense relief (and moreso that of friends and family who did not relish spending time with a real “Grinch that spoiled Christmas”), the January 2005 issue of *Annals of Internal Medicine* was published in December, and included a meta-analysis of vitamin E intervention trials showing that most of them (and especially those involving relatively high doses of the vitamin) led to increased all-cause mortality.⁷ Two years later a meta-analysis of 47 low-bias antioxidant trials was published.⁸ This showed significantly increased mortality in trials involving β -carotene and vitamins A and E; vitamin C and selenium had no adverse effects in

“... the bad news was that there was a significant increase in fatal heart attacks among those taking vitamin E supplements. I stopped taking the supplements.”

these trials. The Forest plot in the published paper showed that while 6 trials favoured the antioxidant supplements, 14 trials favoured the placebo (i.e., there were more deaths in the active treatment group). The remaining trials showed no significant difference between placebo and antioxidant. Although vitamin C was reported not to have adverse effects, there is at least one paper reporting doubling of cardiovascular mortality in post-menopausal diabetic women taking high dose supplements.⁹ This is because, at relatively high concentrations, vitamin C can react with proteins in the same way as does high blood glucose in poorly controlled diabetes, and so can increase the development of atherosclerosis.

The antioxidant paradox

There is obviously a problem here. A large body of epidemiological evidence, both cross-sectional and prospective studies, shows that people with high blood concentrations of vitamin E and β -carotene are significantly less at risk of atherosclerosis, cardiovascular disease and various cancers. There is also a plausible biological mechanism to explain why these antioxidant nutrients are protective. However, most of the intervention trials show increased mortality among those taking the supposedly protective supplements.

It may well be that blood levels of β -carotene and vitamin E simply reflect a diet rich in fruits and vegetables, and there are many other potentially protective compounds in plant foods, so that the real protective factor(s) may not be these two nutrients. Certainly we know that people with a relatively high intake of fruit and vegetables are less at risk of cancer and cardiovascular disease—hence the

“five-a-day” message.

In the case of β -carotene there seems to be a different answer. Burton and Ingold published a paper in 1984 entitled “ β -carotene, an unusual type of lipid antioxidant”¹⁰ which was taken as providing the biological mechanism for a protective role of β -carotene. However, what the paper actually said was “...it exhibits good radical-trapping antioxidant behaviour only at partial pressures of oxygen significantly less than 150 torr, the partial pressure of oxygen in normal air. Such low oxygen partial pressures are found in most tissues under physiological conditions. At higher oxygen pressures, β -carotene loses its antioxidant activity and shows an autocatalytic, pro-oxidant, effect, particularly at relatively high concentrations.” In other words, while β -carotene may be an effective antioxidant in most tissues, in the lungs, where there is a concentration of oxygen, it is a pro-oxidant, and will therefore be likely to cause the kind of damage that can lead to cancer. It is sad, and somewhat surprising, that it appears that neither the principal investigators of the ATBC and CARET trials^{4,5} nor the expert panels that reviewed the research proposals and provided funding for the trials seem to have read the Burton and Ingold paper,⁹ but simply seem to have taken it as read that β -carotene is always an antioxidant.

IT IS LESS easy to explain the increased mortality in trials of vitamin E supplements. It may be that the trials involved specifically one form of vitamin E, α -tocopherol, which is the most potent, but dietary sources of vitamin E also provide other compounds that have vitamin E-like activity.

However, it is more likely that the problem lies in the way in which antioxidants act. The free radicals that cause tissue damage are extremely reactive molecules with a lone unpaired electron. When a radical collides with a stable molecule, it either gains or loses an electron, so it becomes chemically stable, but has created a new radical. This means that once a radical has been produced (for example by exposure to ultra-violet radiation, or as part of normal respiration), there is perpetuation of radical formation until two radicals collide, when the two lone electrons form a stable pair. This is normally unlikely to occur, since individual radicals have a lifespan of microseconds to nanoseconds, and are present in tissues at low concentrations. Compounds such as vitamin E and β -carotene act as antioxidants because they form relatively stable radicals that persist long enough to undergo reaction to non-radical products. This is because the unpaired electron can be in one of several different places in the molecule at any one time, so the radical is less reactive. However, the relative stability of the radicals formed from vitamin E and β -carotene means that they persist long enough to penetrate deeper into cells and cause damage in the nucleus, possibly leading to cancer.

Do we need a change in the regulation of nutritional supplements?

The commentary¹ that prompted me to write this makes a strong case for a change in the way in which nutritional supplements are regulated. At present they are treated as foods, not as medicines, so there is no need to provide evidence of either efficacy or safety.

A case can be made for regulating supplements by dividing them three groups:

- 1) Those that provide up to about 2 – 3 times the reference intake (RDA or DRV). These could be readily available over-the-counter.
- 2) Those that provide up to 10 – 20 times the reference intake. These should only be sold by a registered pharmacist, who can ask what other supplements you are taking and advise you on potential hazards of overdose.

- 3) Those that provide more than about 20 times the reference intake. These should only be available on prescription. Part of medical training is in risk/benefit analysis, and your doctor should be able to evaluate the potential benefits and hazards of high dose supplements for you.

The Food and Drug Administration in USA, Food Standards Agency in UK and similar bodies elsewhere all provide guidance on high intakes of vitamins and other nutritional supplements, with prudent upper levels of intake where there is any evidence of hazard. Responsible supplement manufacturers follow these guidelines and recommend doses below the upper limits. However, many people who take supplements will have the view that if one tablet or capsule is good, two must be better and three even better. They may also be taking several different supplements, and so could be at risk of an excessive intake of a nutrient that is present in more than one formulation.

Finally, of course, there is the problem of irresponsible supplement manufacturers, who may have little or no quality control in their factories, and sell supplements of possibly dubious safety or efficacy on-line, from off-shore sites that cannot be regulated in any satisfactory way at present.

David A Bender
Emeritus Professor of Nutritional Biochemistry
University College London

References

1. Martinez ME *et al.* Dietary supplements and cancer prevention: balancing potential benefits against proven harms. *J Natl Cancer Inst* 2012; **104**(10): 732-9.
2. Stephens NG *et al.* Randomised controlled trial of vitamin E in patients with coronary disease: Cambridge Heart Antioxidant Study (CHAOS). *Lancet* 1996; **347**(9004): 781-6.
3. Gey KF. Cardiovascular disease and vitamins. Concurrent correction of 'suboptimal' plasma antioxidant levels may, as important part of 'optimal' nutrition, help to prevent early stages of cardiovascular disease and cancer, respectively. *Bibl Nutr Dieta* 1995; **52**: 75-91.
4. Alpha-Tocopherol Beta-Carotene Cancer Prevention Study Group. The effect of vitamin E and beta carotene on the incidence of lung and other cancers in male smokers. *NEJM* 1994; **330**: 1029-35.
5. Thornquist MD *et al.* Statistical design and monitoring of the Carotene and Retinol Efficacy Trial (CARET). *Control Clin Trials* 1993; **14**(4): 308-24.
6. Smigel K. Beta carotene fails to prevent cancer in two major studies; CARET intervention stopped. *J Natl Cancer Inst* 1996; **88**(3-4): 145.
7. Miller ER 3rd *et al.* Meta-analysis: high-dosage vitamin E supplementation may increase all-cause mortality. *Ann Intern Med* 2005; **142**(1): 37-46.
8. Bjelakovic G *et al.* Mortality in randomized trials of antioxidant supplements for primary and secondary prevention: systematic review and meta-analysis. *JAMA*, 2007; **297**(8): 842-57.
9. Lee D-H *et al.* Does supplemental vitamin C increase cardiovascular disease risk in women with diabetes? *Am J Clin Nutr* 2004; **80**(5): 1194-1200.
10. Burton G and Ingold K. β -Carotene, an unusual type of lipid antioxidant. *Science* 1984; **224**: 569-73.

See also the HealthWatch position paper on multi-vitamin supplements, available at <http://www.healthwatch-uk.org>

media

COULD DENTAL X-RAYS CAUSE BRAIN TUMOURS?



DENTISTS MADE the news again in April with reports¹ suggesting that dental x-rays could be a cause of meningioma—a type of tumour which grows in the outer membrane covering the brain. Researchers from Yale University, writing in the journal *Cancer*, had reported that in a person’s lifetime dental X-rays could double or triple the chances of developing such a tumour, and suggested that some screening (panoramic) X-rays if used on children may give a fivefold increase in risk.²

Meningioma, wrote the researchers, is the most commonly reported primary brain tumour in the US and as dental X-rays are the most common source of ionising radiation they postulated that they were a potential risk factor for this brain tumour. In fact the overall likelihood of developing meningioma is very small—with a lifetime risk of between one and two people in every thousand. In this study, over 1000 meningioma patients were compared with a control group of a similar number of matched individuals without the disease. The researchers used telephone interviews to obtain each individuals’ X-ray exam history—actual dental histories were not seen. They found that over a lifetime the tumour patients were more likely to report having had bitewing X-rays (taken with a single “film” in the mouth), or panoramic X-rays (taken with a film outside the mouth) before the age of 10. But surprisingly, patients who reported having full mouth X-rays (taken with multiple films in the mouth, so receiving more radiation than with a bitewing X-ray—see table, centre) were no more frequent in the cancer group than in the controls. These mixed results suggest dental X-rays may be associated with brain tumours but do not prove a link.

The fact that radiographs can cause cancer has been well known for many years. But the recent headlines are a good reason to reassess the public’s and practitioners’ attitudes to radiography. In the year 2000 the Ionising (Medical Exposure) Regulations IR(ME)R were published and became law.³ These were designed to reduce the usage of X-rays in a clinical situation. They clearly state that it is the practitioner’s responsibility to justify the need for a radiographic exposure. To do this it is essential that the patient has been clinically examined before the practitioner decides to request a radiograph.

Having been closely involved in writing guidelines for my speciality on the use of radiographs⁴ I am more conservative than most other practitioners. Unfortunately old habits die hard and there are still many dentists who routinely say, “we must have an X-ray of this”. Another unsatisfactory practice is to send patients for an X-ray that the clinician *thinks* they’re likely to need so that when the patient is seen by the clinician the X-ray is already to hand. While this facilitates the running of a clinic, it is no longer good practice and is in fact illegal.

Following the recent publicity I have not noticed any increase in the number of my patients questioning the need to have X-rays taken. In my experience the vast majority are quite prepared. A very small proportion will always question the reason for an X-ray and sometimes even refuse one. I have on occasion had to say, “without an X-ray I am afraid I cannot plan your treatment any further”.

The reverse problem is more common: when someone has had a recent radiograph taken but it has not arrived with the referral letter. It is unethical to take a further radiograph just because the first isn’t available. But patients often plead, “Take another X-ray now”, to avoid a wasted appointment. Increasing use of digital X-ray images which can be sent immediately by e-mail should resolve this problem.

Since the Yale study was carried out, a new generation of modified CT scanners have been developed to image the face and jaws—these are Cone Beam Computerised Tomogram (CBCT). They are mostly found in major hospitals but also increasingly in some dental practices. Unlike the conventional radiograph which is a shadow image, CBCT lets you view the skull in three-dimensions. CBCTs are useful for assessing the condition and amount of bone prior to placing an implant, and very useful in unusual pathologies of the bone, e.g., cancer. In my own field I use them very occasionally when I need to know the precise position of unerupted teeth.

The radiation dose with CBCT is considerably higher than that of a small bitewing radiograph. Some states in north America will not allow the Cone Beam machines to be installed without permission from the state authorities.

It is easy to see that a practitioner who has spent £30K on this, the latest “must-have” technology, might come under pressures other than clinical to use it. However, apart from the increased radiation another restraint to their use is that the practitioner is required by law to report on all aspects of the image—this may well require a radiologist’s report.

A recent, unrelated, report in the *Lancet* which concluded that conventional CT scans of the skull cause an increase in brain cancer and leukaemia, further emphasizes the need to be cautious in the use of medical ionising radiation. To put the radiation dose in perspective a conventional CT skull scan is equal to more than 200 bitewing X-rays (see table, centre). In this study the medical records of 180,000 patients under the age of 10 were examined, so the baseline data is clearly more reliable than the Yale questionnaire. For 10,000 children CT-scanned under the age of 10 there will be one extra case of leukaemia and one extra case of brain cancer. Given that the decision to take a CT scan of a child is unusual and only undertaken when there are potentially serious clinical conditions, the authors of the report point out that the advantages outweigh the disadvantages.

*Keith Isaacson
Orthodontic consultant, and chairman of HealthWatch*

Radiation doses in microsieverts

Bitewing X-ray (per exposure)	<8.3
Full mouth X-ray	35-388
Panoramic X-ray	9-26
Cone beam CT (CBCT)	68-599
Conventional CT scan of skull	2000
Radiation from natural sources	2400*

Source: www.dentaleconomics.com (from White SC. *Oral Radiology: Principles and Interpretation*. 6th Edition, Mosby, 2008.

*World average, per year (source: www.unscear.org)

References

1. *The Independent* 10th April 2012. See: <http://www.independent.co.uk/life-style/health-and-families/health-news/researchers-link-dental-xrays-to-brain-tumours-7630740.html?>
2. Claus EB, et al. Dental x-rays and risk of meningioma. *Cancer* 10 Apr 2012. See: <http://onlinelibrary.wiley.com/doi/10.1002/cncr.26625/pdf>
3. The Ionising (Medical Exposure) Regulations IR(ME)R London: HMSO; 2000. See: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007957
4. Isaacson KG et al. Orthodontic radiographs: guidelines, 3rd edition. UK: British Orthodontic Society; 2008.
5. Pearce MS, et al. Radiation exposure from CT scans in childhood and subsequent risk of leukaemia and brain tumours: a retrospective cohort study *Lancet* online 7 June 2012. See: <http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2812%2960815-0/abstract>

THE GEEK MANIFESTO: WHY SCIENCE MATTERS

by Mark Henderson

Hardcover: 336 pages **RRP:** £18.99 **Publisher:** Bantam Press (10 May 2012)
ISBN-10: 0593068238 **ISBN-13:** 978-0593068236

THIS CALL to scientific arms could have been sub-titled *The HealthWatch Manifesto*. It should be read by all scientists interested in communicating evidence based medicine to the wider world and by all undergraduates—because science is of fundamental importance to everyone. I make no apology for this trite statement because it needs saying time and time again. Henderson explains why, simply and succinctly. The surprising thing is that no-one has done so before in this way.

His book underlines the shortcomings of Ben Goldacre's otherwise brilliant *Bad Science* which laments how hopeless many journalists are. This, I fear, was a public relations disaster for science. This might sound like heresy, but we need to build new bridges, not knock down the old ones without putting anything in their place.

The Geek Manifesto is a giant of a bridge. Henderson writes, for example, that adversarial approaches to bad science reporting are important weapons in the "geek arsenal". But they shouldn't be the first to be deployed, he advises. Start attacking a journalist in an abrasive fashion, he adds, and he is as likely to become defensive and deaf to criticism as he is to change.

Formerly Science Editor on *The Times*, Henderson underlines this point by recalling a dodgy piece he once wrote. He says: "That I recognized my error was largely down to an Oxford University physicist called Tony Weidberg. He would have been well within his rights to rant and rave at my sensationalist misinterpretation, but he took a different tack. In a calm and friendly fashion, he told me that I'd made some mistakes in my copy, but that wasn't altogether rare or surprising

in such a difficult and technical field."

Weidberg invited Henderson to Oxford to meet him and his colleagues. This was, Henderson explains, a textbook example of how to turn bad media reporting to your advantage.

A great strength of *The Geek Manifesto* is that it looks at science in the round. Take, for example, politics. Henderson reports that just one MP—Julian Huppert, Liberal Democrat member for Cambridge—worked as a research scientist before turning to politics. A scientific education and political career are often incompatible. Student politics, in which many aspiring leaders cut their teeth and begin networking, tends to be the preserve of those reading humanities and social sciences, partly because they have more time.

Crossing from the scientific to the political domain is difficult because of fundamental cultural differences. Henderson tells a story by Richard Dawkins about an elderly professor with a hypothesis that was disproved by a visiting researcher. The old man reportedly stood up, went to the rostrum and shook his hand and said, "My dear fellow. I wish to thank you. I have been wrong these 15 years." The audience clapped their hands to the raw. This kind of U-turn reflects intellectual honesty, but Henderson believes that in Westminster and Washington, it is seen as, "the stuff of the gaffe".

I could cite many examples explaining what makes this book so strong, but far better that you read it yourself and enlist in the geek army. Get more directly involved. Too few geeks, Henderson believes, join political parties.

John Illman

Medical author and journalist, London

BIOETHICS: ALL THAT MATTERS by Donna Dickenson

Paperback: 160 pages **RRP:** £7.99 **Publisher:** Hodder Education (29 Jun 2012)
ISBN-10: 1444155806 **ISBN-13:** 978-1444155808

Reviewed by John Illman

DONNA DICKENSON argues that the bioethics debate has been ambushed by the idea that religion is the biggest enemy of scientific progress and by puerile fantasies about "enhancement" technologies to extend human ability beyond natural capacity—for example through designer babies.

But it's not *Opus Dei*, she points out, that controls over 70 per cent of US drug trials: it's for-profit companies. One in five human genes is now the subject of a patent, mostly held by private firms. This can prevent researchers from getting access to genetic material and force patients to pay inflated prices for tests and treatments.

So far so good. Moreover Dickenson has form. She is emeritus professor of Medical Ethics and Humanities at the University of London and the author of 20 books, including the best selling *Body Shopping: Converting Body Parts to Profit*. In 2006 she became the first woman to win the international Spinoza Lens Award for her contribution to the public debate on ethics.

Bioethics: All That Matters is one of a series in which authors, both academics and "public intellectuals" (yes, this is what the publishers say), compress their specialist subject into just 25,000 words and present 100 ideas to take readers further forward. Dickenson selects 20 books, ten landmark

court decisions, ten literary works, ten films, ten websites, ten think-tanks and activist organizations, ten key concepts, ten key thinkers and ten key individuals who have shaped the field, for better or worse.

All this adds up to an ideal introductory guide to topics such as stem cell technology, reproductive tourism, patent law and cognitive enhancement. There are chapters on the global egg trade, genes and sacrificial lambs and professional guinea pigs and should we do whatever science lets us do?

But what I really wanted to know is missing. Dickenson says that unless biomedicine aims to serve the common good and not the bank accounts of the scientists, researchers, drug firms and other institutions involved, it will betray its original purpose of alleviating human suffering and improving living conditions.

The big unanswered question is, what should we do about it? I would have liked to hear how Dickenson would reconcile capitalism, which, like it or not, is the lubricant of the world economy, with the many conflicting concerns of bioethics. This is an issue that extends way beyond healthcare into international economics and how (through investments) our pensions, among other things, are funded.

Donna, over to you. We know about the problems; we want solutions.

John Illman

last word

CONFUSED OVER HYPNOSIS FOR HIGH BP? YOU SHOULD BE...

ON THEIR WEBSITE*, hypnotherapists Andy Bryce and Maxine Henk-Bryce (“a certified hypnotherapist”) claim that Essential Hypertension is a term which means that there is no clear medical cause, and that therefore, “doctors can only manage the symptoms, as they don’t have the time or resources to manage the underlying emotional and lifestyle factors. The consequences are a lifetime of medication, constant uncertainty and worry.”

Later on they refer to NICE guidance, which acknowledges the role of lifestyle factors in hypertension, in order to justify their focus on emotional issues. Confusing that.

The reality is that doctors are very aware that stress can increase blood pressure, but then so does smoking, obesity, lack of exercise, high salt in the diet and genetics amongst other things. NICE also is very clear that if addressing lifestyle factors does not bring down blood pressure, then medication is recommended in order to reduce the associated risks of stroke, renal failure and heart attacks.

Medication is a last resort to reduce the risk of dire consequences, it is not because of doctors’ ignorance or lack of time or resources as claimed. Perhaps the consequences of following their advice of avoiding a lifetime of medication would not be so desirable. They do not hesitate to define high blood pressure, “specifically it’s a

blood pressure reading that’s consistently in excess of 140/90 mm/Hg”. All anyone would need to make the diagnosis, then, would be a reliable method of recording blood pressure.

It is strange then that at the bottom of their home page they write this waiver, “we are not psychologists, psychotherapists, physicians or other licensed health care providers...” and the information they provide is, “not intended to diagnose, cure, treat or prevent any medical condition or psychological disorder.”

Ok, that’s cleared up any confusion.

James May
GP Principal, London

*Website:

<http://www.simplydivinerelationshiptraining.com/pages/hypertension-whatis-highbloodpressure-reduce/>

GARDEN TALK

IN AN EARLIER issue (*HealthWatch Newsletter* 76, January 2012) I reported on University College London Hospital’s proposed new cancer centre, which was planned to have a team of ten complementary therapists and a “healing garden”. I e-mailed my oncologist saying, among other things, that although I love gardening and gardens, the idea of a “healing garden” would give me such a pain in the bullshit detector than I would probably find myself unable to set foot in it.

Well, the new centre is open and running. I have a leaflet about it. The garden is now called simply the roof garden, and there is no mention of the quack therapists, though they are probably still there.

Caroline Richmond
Medical Journalist, London

References to WHAT DO WE MEAN BY EVIDENCE-BASED MEDICINE?

from page 3

1. Charles C, Gafni A and Freeman E. The evidence-based medicine model of clinical practice: scientific teaching or belief-based preaching? *J Eval Clin Pract* 2011;**17**:597–605.
2. Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB & Richardson WS. (1996) Evidence based medicine: what it is and what it isn’t. *BMJ* 1996;**312**(7023):71–72.
3. Scott K and McSherry R. Evidence Based Nursing: clarifying the concepts for nurses in practice. *J Clin Nursing* 2009;**18**(8):1085-95.
4. DiCenso A, Ciliska D and Guyatt G. (2005) Introduction to evidence-based nursing. In *Evidence-Based Nursing: A Guide to Clinical Practice* (eds A DiCenso, G Guyatt and D Ciliska), pp 4–17. London: Mosby.
5. Tonelli MR. Integrating evidence into clinical practice: an alternative to evidence-based approaches. *J Eval Clin Pract* 2006;**12**(3):248–256.

Published by HealthWatch www.healthwatch-uk.org

Press enquiries please e-mail enquiries@healthwatch-uk.org

PLEASE NOTE THE OLD PRESS ENQUIRY LINE IS NOW CLOSED

President: Nick Ross
Chairman: Keith Isaacson
Vice-Chairman: James May
Secretary: David Bender
Treasurer: Anne Raikes
Newsletter Editor: Mandy Payne

Committee: Susan Bewley, Debra Bick, Walli Bounds, Diana Brahams, Malcolm Brahams, John Illman, Gillian Robinson and Les Rose. William Townsend and Larisa Corda are Trainee Doctor Representatives and Kenneth Chan and Derek Ho are Student Representatives.

Opinions expressed in letters and articles published in the HealthWatch Newsletter belong to the authors and do not necessarily reflect the views of HealthWatch. Authors are responsible for the factual accuracy of their own articles; the editor reserves the right to amend text if necessary but will, where possible, consult the author to ensure accuracy is maintained.

Letters and articles for publication are welcomed and should be sent to the Editor at: newsletter1@healthwatch-uk.org or by post to her at: HealthWatch Newsletter, 8 Eagle Close, Amersham, Bucks HP6 6TD

Unless otherwise indicated, all web addresses referenced in this issue were accessed on or after 27 June 2012

HealthWatch promotes:

1. The assessment and testing of treatments, whether “orthodox” or “alternative”;
2. Consumer protection of all forms of health care, both by thorough testing of all products and procedures, and better regulation of all practitioners;
3. Better understanding by the public and the media that valid clinical trials are the best way of ensuring protection.

HealthWatch welcomes membership enquiries from those who share its aims. Membership costs £30.00 per year, including hard copy newsletter sent by post (£40.00 for members outside Europe); or £25.00 for members anywhere in the world who agree to receive the newsletter only in pdf form by e-mail. Student membership, which includes the newsletter by e-mail only, is free. Questions about membership should be sent to membership secretary Kenneth Bodman, at kenneth.bodman@btinternet.com

Extra newsletter copies are available at £5.00 each.



Patrons:
Lord Dick Taverne QC
Sir Michael Rawlins
Professor Steve Jones FRS

Registered Charity no. 1003392
Established 1992