# Evidence in Practice

**There are just not enough hours in the day to read all the research journals, even if you wanted to. This section of *BJPCN* – Evidence in Practice – will keep you on top of relevant research without having to spend hours in the library.**

**Each review gives you a bite-size summary of new research, pulling out key points for primary care and recommending the action that you might consider taking.**

## INSPIRE STUDY COMPARES SALMETEROL/FLUTICASONE VS TIOTROPIUM IN COPD

Patients with severe COPD may benefit more from therapy that combines salmeterol and fluticasone than treatment with tiotropium, according to results from the recent INSPIRE study. This is the first head-to-head prospective study comparing two main treatments for COPD (Seretide® 500 Accuhaler® (salmeterol 50 µg/ fluticasone propionate 500 µg twice-daily vs Handihaler® tiotropium bromide 18 µg once-daily).

The two-year European study randomised a total of 1,323 patients with an $FEV_1$<39% predicted. There was no difference between the two treatments in terms of the number of exacerbations which was the main study endpoint. However, salmeterol/fluticasone treatment was associated with better health status, fewer patient withdrawals and a lower mortality rate (although the study was not designed as a mortality trial).

Significantly more patients on tiotropium required oral steroids to treat exacerbations whereas patients on salmeterol/fluticasone required more antibiotics. Lead author of the study, Professor Wisia Wedzicha, commented, "These results suggest that the treatments do work in different ways as patients seemed to experience differences in the nature of their exacerbations." He added, "This difference warrants further study to determine the factors that affect therapeutic choice."

### ACTION

Salmeterol/fluticasone propionate and tiotropium reduce COPD exacerbations to the same level, but the combination therapy may have secondary benefits. These findings could have important implications for the choice of therapy to manage patients with COPD.

Wedzicha JA *et al.* *Am J Respir Crit Care Med* 2008; **177**: 19-26. First published online as doi:10.1164/rccm.200707-973OC.

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## ARE WE PREPARED FOR THE COPD NSF?

A recent national UK survey has found that a large proportion of practice nurses working at an advanced level in COPD do not have accredited training.

The survey sent questionnaires to 500 randomly selected COPD and asthma nurses at general practices around the country. It showed that the number of advanced role asthma nurses had increased to 66% from 49%, according to a similar survey in 1993. However, 19% of these nurses did not have accredited training (diploma or degree-level module recognised by a university) – a situation which has hardly improved since 1993.

In COPD the situation was even worse. Although 58% of the COPD nurses questioned held an advanced role in 2006, 52% did not have accredited training and 89% did not have accredited spirometry training.

The NSF for COPD will soon come into force yet many nurses working in an advanced role do not have accredited training. Nurses and practices need to be fully prepared for the implemention of the NSF by increasing the level of accredited training.

### ACTION

Although progress has been made in nurse-led care in asthma and COPD, there remains an urgent need for accredited training.

Upton J *et al. PCRJ* 2007; **16** (5): 284-90.

## PATIENTS REALLY DO WANT SIMPLE TREATMENT

A UK study shows that adults with moderate or severe asthma are prepared to trade some improvements in symptom relief in favour of simpler treatment regimens.

The study included 147 patients on Step 3 treatment or above in the British Asthma Guidelines from 15 general practices who returned questionnaires in a so-called 'discrete choice experiment' – a type of analysis that is increasingly being used to identify healthcare preferences. Questions were designed to assess the relative importance of features of asthma management from a patient's perspective.

Patients were very negative about increasing the number of inhalers and having a constantly high steroid dose and wanted as few medications and inhalers as possible to achieve symptom control. Sadly, although they felt that use of a written personalised asthma action plan was important, only 8% of respondents had these. Use of written plans is strongly recommended in asthma guidelines as they improve outcomes, increase compliance and are cost-effective. This study will help promote the development of personalised management strategies.

### ACTION

Patients with asthma want simple, effective treatment in terms of number of medications and inhalers. More patients need to have personalised asthma action plans.

Haughney J *et al. BMC Pulmonary Medicine* 2007; **7**: 16 published online at http://www.biomedcentral.com/1471-2466-7-16

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## NRT PROVES EFFECTIVE IN THE 'REAL WORLD'

Recent studies have raised doubts as to whether nicotine replacement therapy (NRT) is effective when used by smokers making quit attempts unsupervised outside clinical trials. However, a new study has shown that smokers making self-initiated attempts to quit using NRT can achieve long-term success.

The multinational study collected data via the Internet on people aged 35-65 years who were smoking five cigarettes per day and who were intending to stop smoking within the next three months. Phase 1 began in spring 2003 and involved 2,009 smokers from the USA, UK, Canada and France. Phase 2 involved 3,645 smokers and included the same countries plus Spain.

Follow-up assessments were carried out every three months. 492 smokers who made a quit attempt without formal behavioural support or bupropion in the first three-month follow-up period were identified from phase 1, with 357 followed up for a further six months. The phase 2 sample involved 906 smokers making quit attempts, with 732 followed up.

Results showed that 35.6% of smokers followed up in phase 1 and 29.6% of those followed up in phase 2 used NRT. People using NRT were three times more likely to report abstinence at six months compared to those not using NRT in the phase 1 sample, and just over twice as likely in the phase 2 sample. The improved odds of success were not explicable in terms of motivation to use some form of aid to cessation or differential loss to follow-up.

### ACTION

It appears to be worth recommending use of NRT to smokers making self-initiated quit attempts without formal behavioural support, as this may be associated with improved long-term abstinence rates.

Shiffman S. *Thorax* 2007; **62**: 998-1002.

# Evidence in Practice

## CANNABIS USE INCREASES LUNG CANCER RISK

A study from New Zealand shows that long-term cannabis use increases the risk of lung cancer. The study showed that cannabis is at least as toxic as tobacco, and that the associated cancer risk is proportional to the intensity and length of cannabis use.

The study enrolled 102 younger patients (aged <55 years) with confirmed lung cancer of whom 79 completed detailed questionnaires on their smoking habits, including age of starting cannabis use, the amount, frequency and duration of use. Cannabis use was quantified in joint-years with one joint-year being equivalent to 1 joint per day for 1 year. For each joint-year of cannabis exposure the risk of lung cancer was estimated to increase by 8%. This compared with a 7% increase in lung cancer risk for each pack-year (one pack of 20 cigarettes per day for 1 year) of cigarette smoking, prompting the authors to say that one cannabis joint is as carcinogenic as a pack of cigarettes and that 5% of lung cancer in those aged under 55 years in New Zealand was attributable to cannabis smoking. The balance of evidence from a number of studies now suggests a positive link between cannabis and lung cancer.

### ACTION

These results have major public health implications. Practice nurses have a significant health prevention role and should educate patients on the risks of cannabis smoking.

Aldington S *et al. Eur Respir J* 2008; **31**: 280-286.

## POSSIBLE ALLERGY LINK TO IRRITABLE BOWEL SYNDROME

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Adults with allergy symptoms report a high incidence of irritable bowel syndrome (IBS), suggesting a link between atopic disorders and IBS, according to a recent study from the USA.

In a study of 125 adults using structured questionnaires, the likelihood of IBS was found to be significantly higher in patients with seasonal allergic rhinitis (2.67 times), patients with allergic eczema (3.85 times), and patients with depression (2.56 times). Asthma and IBS were reported by 29% of patients whereas IBS normally affects about 15% of the general population.

The study investigators noted: "In atopic disease, allergic dermatitis is the first step of the 'atopic march'. In early childhood, allergic eczema (AE) is frequently associated with gastrointestinal dysfunction and food allergy. A clinical history of AE may therefore be a useful marker for patients with gut hypersensitivity and atopic IBS."

### ACTION

A subgroup of patients with atopic IBS may benefit from specific therapeutic interventions.

Tobin MC *et al. Ann Allergy Asthma Immunol* 2008; **100**: 49-53.

# Evidence in Practice

## HOME CLEANING PRODUCTS INCREASE RISK OF ASTHMA

Cleaning work and professional use of cleaning products have been associated with asthma, but the respiratory effects of products used during home cleaning have not previously been studied. Now a European study has suggested that frequent use of common household cleaning sprays may be an important risk factor for adult asthma.

Researchers from the European Community Respiratory Health Survey, which covers 10 countries, identified 3,503 people who cleaned their homes and who were free of asthma at baseline. The frequency of use of 15 types of cleaning products was measured in face-to-face interviews.

Results showed that using cleaning sprays at least weekly (reported by 42% of participants) was associated with a nearly 50% increase in the incidence of asthma symptoms or medication (relative risk [RR] 1.49) and wheeze (RR 1.39). The incidence of doctor-diagnosed asthma was higher in people using sprays at least four days per week (RR 2.11). These associations were consistent for subgroups and not modified by atopy. Dose–response relationships were apparent for the frequency of use and the number of different sprays.

Risks were predominantly found for commonly used glass-cleaning, furniture, and air-refreshing sprays. Cleaning products not applied in spray form were not associated with asthma.

### ACTION

In adults with new-onset asthma, it may be worth asking about use of home cleaning sprays, as part of taking their history and trying to identify triggers.

Zock J-P *et al. American Journal of Respiratory and Critical Care Medicine* 2007; **176**: 735-741.

## ADDING MONTELUKAST TO CHILDREN'S USUAL ASTHMA TREATMENT REDUCES DAYS WITH SYMPTOMS

The short-term addition of montelukast (Singulair) to children's usual asthma therapy after returning to school reduces days with asthma symptoms, according to a study.

The study randomised 194 children with asthma aged 2 to 14 to montelukast (at the age-specific dose) or placebo for 45 days after returning to school following the long summer holiday, in addition to their usual asthma therapy. Their parents were given a magnetic fridge calendar to record daily symptoms.

Results showed that the children given montelukast had half the number of days with worsened asthma symptoms compared to those given placebo (3.9% vs 8.3%, $p<0.02$). Those treated with montelukast were also four times less likely to require unscheduled medical visits or treatment for asthma symptoms (78% reduction; $p=0.011$).

### ACTION

This study suggests that adding montelukast to asthma therapy before children return to school in September may significantly reduce the morbidity they experience in the early autumn.

Johnston NW *et al. Pediatrics* 2007; **120**: 3: e702-e712.

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# Research Made Easy

## PEOPLE WITH ASTHMA FEEL BETTER AFTER PERFORMING BREATHING EXERCISES

A randomised trial of adding the Papworth technique (breathing and relaxation exercises designed in the 1960s to help people who hyperventilate) to usual asthma care in patients with mild asthma seems to give significant benefits.

A total of 85 patients were randomised to a group receiving five sessions of treatment with the Papworth method or to a control group receiving usual medical care. After treatment those in the actively managed group had a statistically significant improvement in their symptoms, anxiety and depression scores, and their responses to the St George's Respiratory Symptoms Questionnaire (21.8 vs 32.8 in the control group, p=0.001). These benefits were maintained at 12 months follow-up (24.9 vs 33.5, p=0.007).

Commenting on the study, Dr Mike Thomas, Senior Research Fellow at Asthma UK said, "It is also consistent with other studies from Australia and the UK which show that breathing exercises can help to reduce the need for reliever medication and can improve the quality of life of people with asthma. It is, however, vital that people with asthma continue to take their prescribed medication alongside any additional breathing training."

### ACTION

The Papworth method improves respiratory symptoms, dysfunctional breathing and adverse mood compared with usual care of asthma. Further controlled trials are needed.

Holloway EA *et al.* *Thorax* 2007; **62**: 1039-42.

**We previously explored how the double-blind randomised controlled trial (RCT) design was developed to reduce the extent to which patients' beliefs and researchers' behaviour affect research findings. This article will help you to understand a further source of bias: differences between groups at baseline.**

Jane Upton
Research Project Manager, Education for Health

### EXAMPLE

Imagine an RCT in which subjects were allocated either to eat lots of chocolate plus their normal meals (the intervention) or just their normal meals (the control). If you love chocolate and the abstract of the paper stated that subjects who frequently ate chocolate lost significantly more weight than the control group, you might be tempted to accept this finding at face value!

### HOW MIGHT THE STUDY BE BIASED?

To assess if the abstract findings are truthful and correct you need to read the full article. In this example, you might have found from the table of baseline subject characteristics that the intervention group did more exercise than the control group. As this would affect weight loss, it is reasonable to conclude that the findings were biased by the differences between groups at baseline rather than frequent chocolate intake being an effective weight loss programme!

### HOW MIGHT THIS TYPE OF BIAS HAVE BEEN AVOIDED?

- By ensuring that randomisation is properly conducted. This will increase the likelihood of baseline subject characteristics being evenly divided between the intervention and control groups.
- By identifying subject characteristics that might affect the findings and ensuring that these are equally divided between the intervention and control groups. Subjects could have been categorised by exercise level and then randomised so that an equal number of exercisers and non-exercisers were in the intervention and control groups. This is called 'stratification' and is particularly useful in small RCTs.
- Lastly, the data can be statistically analysed to adjust for baseline differences between groups. This should be clearly stated in the analysis of results section.

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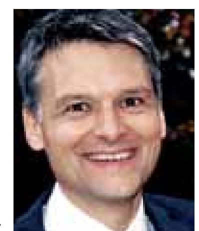

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