

THE NZ JOURNAL OF RESPIRATORY HEALTH

AUGUST 2014



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References: 1. Gillies J et al. New Zealand Med J. 2005, 118 No 1220. 2. Ventolin Data Sheet, GSK New Zealand.

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CONTENTS

ISSN 1176-7847

PUBLISHER
Asthma New Zealand
– The Lung Association
581 Mt Eden Road, Mt Eden
Auckland 1024
PO Box 67066
Mt Eden, Auckland 1349

CONTACT
Phone: 09 623 0236
Fax: 09 623 0774
Email: anz@asthma.org.nz

PRODUCTION & ADVERTISING
Asthma New Zealand
Editor: Linda Thompson
Email: editor@asthma.org.nz



ON THE COVER
Kali Meehan – Last Man Standing!
(Jason Oxenham Photography Ltd.)



Message to Readers	5
Beta ₂ -Agonists	6
“Step Into My Shoes”	7
Dear Nurse	9
Asthma & Spring Allergies	10
Cannabis (Marijuana)	12
A guide to buying bacon for people with asthma	15
Giving asthma the knockout blow	16
North & South	18
Kid's Page	20
The direct relationship between smoking and Chronic Obstructive Pulmonary Disease (COPD)	24
Is anxiety and depression more common in people with COPD?	26
COPD in flight	28
Newstream	30

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DISTANCE LEARNING ASTHMA/COPD NURSING COURSE INFORMATION

Dear Nurse

Applications are now invited from nurses wanting to enrol on the Asthma Nursing Course in February 2015 and COPD Nursing Course in April 2015. The programmes are offered by distance learning. Not everyone has the same pace of learning. Some students pick up things fast, others need time to grasp a concept. One of the biggest advantages of distance learning is that you can study at a pace that is comfortable for you. The primary aim of Asthma/COPD Nursing Courses are to provide nursing health professionals with a high level of Asthma/COPD knowledge that promotes best practice, based on available evidence, and is consistent with national policy.

Since the commencement of the Asthma and COPD Nursing Courses, over 1000 nurses have enrolled over 46 intakes. Many applicants had not undertaken any additional study since completing their nursing training, which may have been years before. However, most find the courses to be challenging but thoroughly enjoyable learning experience that is within the grasp of any competent nurse practitioner. Asthma Nursing Course and COPD Nursing Course are accredited with 15 credits each, which can be used towards gaining your Bachelor of Nursing degree.

If possible would you be able to pin-up the following Asthma and COPD Nursing Course information on your work place notice board. Also feel free to circulate, make photocopies if you like.

Could you please phone/fax or email for an enrolment form.

Asthma Nursing Course closing date – 10 February 2015
COPD Nursing Course closing date – 10 April 2015

For information contact: Ann/Swarna
Phone: Ann on 09 623 4777 or Swarna on 09 623 4771
Fax: 09 623 0774

Email: annw@asthma-nz.org.nz or swarnah@asthma-nz.org.nz
Asthma New Zealand/The Lung Association
P O Box 67066, Mt Eden, Auckland 1349

Upcoming events and courses



ASTHMA NEAT COURSE

17 September 2014
18 March 2015
17 June 2015

HALF DAY COPD COURSE

15 October 2014
15 April 2015
15 July 2015



November 19 2014

Further enquiries for any of these events phone **09 630 2293** or www.asthma.org.nz



MESSAGE TO READERS

It's been a busy few months for Asthma New Zealand. Since the last issue of O₂, we've been in a whirlwind of activity.

World Asthma Day raised awareness of the issues those with asthma face daily. We had our nurses out in their communities offering advice and information to families. We're looking to employ more nurses to meet the demands of the community, and offer ongoing education and support to the one in five New Zealanders who are affected by asthma. Asthma-related health problems are an ongoing issue for New Zealand, and the solution starts with knowledge.

In response to Health Minister, Tony Ryall's statement that New Zealand's public health services will reach a record \$15.6 billion next year I would have to say it is extremely positive that young people will be offered free GP visits and prescriptions. As asthma is the leading cause of childhood hospitalisation, more budget and resources need to be put towards preventative care and asthma medication."

"Access to free care for those under the age of 13 should hopefully begin to help with preventing more severe respiratory conditions, those that require hospitalisation. Removing the cost barriers to seeking medical assistance for children will hopefully mean that less go untreated until they are at crisis point and require treatment in hospital."

"While we did hope to see more resource being directed specifically towards asthma education, overall the budget is heading in a positive direction. I still believe that asthma needs to be seen as a priority for the government if they are wanting to address long-term conditions. It needs to be given some specific resource if we're to really start seeing a difference in the lives of people who experience asthma."

Kiwi kayaker Scott Donaldson spent a tough 83 days at sea, in a brave attempt to cross the Tasman alone. Scott

teamed up with Asthma New Zealand to raise awareness of the importance of aerobic exercise for health, and we're immensely proud of his efforts. Scott didn't quite make it across but got close to the Taranaki coast, unfortunately his kayak was damaged due to rough weather conditions, which resulted in him being injured resulting in a rescue. A successful crossing would have been a world first, but even so, we are thrilled to have the support of such a brave and determined man. Scott's now resting and reuniting with his family. We're wishing him a swift recovery and have extended our thanks to his family for their enthusiasm in advocating on behalf of those with asthma.

We've been lucky enough to team up with several notable New Zealanders recently, and are proud to announce a new addition to the Asthma New Zealand team. Long-time favourite Kiwi actor Temuera Morrison has recently come on board as our new patron and kiwi kayaker Scott Donaldson as an ambassador. We're looking forward to working with him to raise awareness of our services, so watch this space.

I've also had some great news. As of June 2014, I am now Asthma New Zealand's Executive Director. Accepting this role was an honour for me, and I'm excited to continue to be involved with Asthma New Zealand as we grow and develop. We're continually looking for ways to improve our services to offer better care, education and support to Kiwis with asthma – something that I am incredibly proud to be a part of.

Linda Thompson
Executive Director
Asthma New Zealand

BETA₂-AGONISTS

by Janet Delooze RN
Asthma Nurse Educator

When asthma is initially diagnosed, one of the first medications to be prescribed is usually a reliever inhaler. These are generally blue and include Ventolin, Respigen and Salamol metered-dose inhalers, which all contain the drug, salbutamol, and Bricanyl turbuhaler which is a dry-powdered device containing terbutaline. They are also known as short-acting beta₂-agonists (SABAs), or bronchodilators.

Salbutamol, which is a selective beta₂-agonists, binds onto the beta₂-adrenoceptors of airway smooth muscle cells to bring about rapid opening of the airways (bronchodilation) which may last for about four to six hours. Serevent (salmeterol), Oxis (efomedoterol fumarate dehydrate) and Foradil (formoterol fumarate) are also beta₂-agonists but are long-acting (LABAs) or symptom controllers, and last for approximately 12 hours.¹

When are short-acting beta₂-agonists used?

- They can be used four-hourly with symptoms of cough, wheeze, breathlessness and tight chest.
- They can also be used prior to exercise, and at the first sign of a cold and for the duration of that cold to reduce bronchospasm.
- An action plan should be completed for everyone with asthma as a guide to increasing the amount of reliever used if symptoms worsen and breathing becomes more difficult.
- In an emergency, six puffs every six minutes can be used whilst waiting for an ambulance.

Short-acting beta₂-agonists Long-acting beta₂-agonists

- Ventolin, Respigen, Salamol, Bricanyl
- Serevent, Oxis, Foradil



How do beta₂-agonists work?

Beta-adrenergic receptors (adrenoceptors) are distributed throughout the body, including blood vessels, heart, gastrointestinal tract, smooth and skeletal muscle. They are part of the sympathetic nervous system, which is concerned with 'fight or flight' responses. Beta₁-adrenoceptors are found mainly in the heart; beta₂-adrenoceptors are found in the airways. In normal physiology, adrenaline is released in response to stress and binds to the adrenergic receptor sites causing rapid heartbeat (tachycardia), bronchodilation, constriction of the blood vessels (vasoconstriction) and increased blood pressure – preparing the body for fight or flight.²

Medication particles reach the bronchial smooth muscle quickly after inhalation by metered dose inhaler (MDI) and start to have a therapeutic effect in about five minutes.¹ However, only about 10% of a 100mcg dose will reach the airways; the rest will be lost in the mouth and back of the throat, swallowed into the stomach or left behind in the

inhaler. **If a spacer is used, the lung deposition of inhaled particles can be up to 40%.³** They also act as mast cell stabilisers so can be used preventatively in the short-term prior to known triggers, such as exercise.⁴

Risks and benefits

Salbutamol is a selective beta₂-agonist acting mainly on the beta₂-adrenoceptors. However, it is not 100% specific to the beta₂-adrenoceptors; beta₁-adrenoceptors are affected to a lesser extent even with inhaled salbutamol.² There are also some beta₂ receptor sites in the heart muscle (myocardium) and blood vessels so stimulation of these receptors by salbutamol can commonly cause tremors, rapid heartbeat, headache and hyperactivity.^{1,5}

Beta-blockers (beta-antagonists) have the opposite effect and may cause bronchoconstriction. They are not usually prescribed in asthma unless directed by a specialist.¹

Long term overuse of salbutamol can lead to reduced therapeutic effect as a bronchodilator⁵, and is consistent with poor asthma control and increased hospitalisation.⁶ Therefore, it is crucial to have regular GP reviews to make sure asthma is being well-managed.

Using reliever medication more than twice weekly is a sign of poor control and preventer medication should be discussed with the doctor.

Long-acting beta₂-agonists (LABAs) are used for long-term regular treatment of reversible airways obstruction in asthma for adults and children who are receiving inhaled or oral corticosteroids. They should be used **only in conjunction with inhaled steroids** in the management of asthma.¹

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“STEP INTO MY SHOES”

by Sarah Martin
Unitec third-year-student – BHSc (Nurs)

If you've never had the opportunity to meet the team at Asthma Auckland, you're missing out. As a student nurse nearing the end of her bachelor's degree, I have been welcomed by the asthma-specialist nurses with open arms. They have not only taught and guided me through the basics of asthma, but laughed with me, valued me and instilled in me a sense of confidence. The Asthma Auckland team have revived in me a hope of becoming a nurse that cares for the welfare of her patients, team and the upcoming generation of nurses. If you are a student nurse reading this, you will know that this isn't always the norm, as many nursing teams have a culture of overwhelming schedules that groan under the burden of teaching a nursing student.

So what have I learnt?

As my previous placements have been within a hospital, the biggest learning curve for me has come with the change in environment. Having the time to talk, assess and educate people in their own homes is definitely not the same as the interaction between nurses and patients within hospitals. In this aspect, I think community nurses have the upper-hand in providing holistic care. I say this because when the nurses step into each home, they can get a glimpse of the daily life of their clients and the environmental factors that play an important role in affecting health. Thin curtains, a bed next to the window, gas heating or an ancient and therefore inefficient vacuum cleaner are examples of the environmental aspects the asthma nurses look at. They can clearly pinpoint potential health hazards for people with asthma from what they see, smell, touch or hear and work with clients towards a better state of health. In comparison, the ward nurse can only get a picture from what a patient tells her in hospital. If important environmental issues are missed, reaching a state of optimal health could be impossible.

I also argue (based on my short stint in the Asthma Auckland team) that learning occurs best in the client's own environment. Would you rather learn in a room filled with constant chimes from patient bells, glaring fluorescent lights and a lingering antiseptic smell or in your own, familiar living room? Chances are that other family members will also be home during the time the asthma nurses call in, providing an opportunity for those who support them to learn about asthma too. Being at home during a visit from an asthma nurse means you don't have to be learning about strange medication devices while adapting to a new (perhaps scary) environment. Thus, the home is a better environment for nurses to meet clients to provide education and support in managing their asthma.

Further, learning about the needs of clients has also been interesting. If you have asthma yourself, you would have probably been prescribed an inhaler of some kind. Using a



metered dose inhaler (with or without a spacer) is first and foremost a real skill. It takes time to learn the proper inhaler technique, which is essential as this determines the amount of medication that actually enters the small airways of our lungs. It is this skill that I have found to be what clients often need support with. I have heard of a lady who aimed her inhaler at her cat when dispensing the medication from her inhaler. She rationalised that her cat was the reason for her asthma symptoms, thus the cat was the one who needed medicating. Though it is true that around 40% of asthmatics have cat allergies, this illustration is an extreme example of how inhalers are misused.

Why is the Asthma Auckland team such a good one?

I have heard people say that nurses are simply glorified maids. Obviously, these people have never experienced being part of a nursing team, let alone a primary healthcare team. The Asthma Auckland team enable and empower people to make their own decisions and will encourage any effort toward asthma control, big or small. When nurses are able to put the benefit of the clients first, function well in a small space and enjoy what they do, they have what I consider 'the essence' of any good nursing team. On top of this, the nurses respect the health needs that stand outside of asthma, as asthma (though it is a serious, chronic condition) can be part of an array of other health issues affecting an individual.

My brief yet eventful experience as part of the Asthma Auckland team has left me with a considerably heightened respect for primary healthcare nurses. Each asthma nurse specialist within the team has shown me how they reach out to people with asthma in our communities every day; older adults, school children and families alike. It is these brief community encounters that have shown me wisdom as precious as gold. I take away a learning experience, a new perspective on nursing and a deepened respect for the nurses driving the brightly coloured buses around Auckland.

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DEAR NURSE



Dear Nurse, I have been an asthmatic for many years. I also smoke. I have always used my orange preventer inhaler every day but I have noticed I need to use my blue reliever more and more as I am getting very short of breathe all of the time.

Asthmatics who continue to smoke have an increased risk of developing chronic obstructive pulmonary disease (COPD) when they get older therefore you need to make an appointment to see your doctor and discuss:

- 1 Having a spirometry test done to assess your lung function
- 2 Review of your medications
- 3 Discuss smoking cessation
- 4 Referral to an asthma nurse educator to check inhaler technique, provide education and advice.

Dear Nurse, my son of five has been taking Flixotide for two years and he hardly ever gets asthma symptoms now. Can I stop giving him his Flixotide?

It is good to hear that your son's asthma is under control. This is because he has been taking his medication correctly every morning and night. Flixotide should not be stopped without the approval of your GP. If he was on two puffs of Flixotide twice a day, your GP may suggest it would be best to reduce it to one puff twice a day in the first instance, and then continue to monitor symptoms and monitor how often he is requiring his blue reliever. If he requires his blue inhaler more than twice a week when he does not have a cold, this signifies that asthma is not well controlled and the dosage would need to be reviewed again.

Dear Nurse, my three-year-old daughter has been started on an orange inhaler, Flixotide, for her asthma. I have heard that this is a steroid and am worried there will be long term side effects if I give this to her.

Long term use of oral steroids does have side effects. However, the medicine that has been prescribed for your daughter is quite different. Corticosteroids are produced by our body to fight inflammation, and the inhaler your daughter has been prescribed contains a synthetic form of this, to fight the inflammation that is occurring in her bronchioles (small breathing passages). Because this medicine is being inhaled, it is going directly to the lungs, where it is needed, and not going throughout her entire body. The dosage of the medication in an inhaler is also in micrograms, meaning that it is a very small amount, compared to having oral steroids. By taking this small amount of inhaled corticosteroids, severe asthma attacks are more likely to be prevented, therefore reducing the need for oral steroids. If oral steroids are needed, usually only a short course is prescribed. The known side effects of inhaled corticosteroids are sore throat, husky voice, and thrush in the mouth, therefore, it is important that anyone taking this medication rinses their mouth out after

use. It is important for your daughter to take this medication morning and night, even when she has no asthma symptoms, to keep her well.

Dear nurse, the doctor gave me a new purple puffer called Seretide. Am I supposed to keep taking my orange puffer as well?

Your Seretide is a combination therapy which means that it has two medications inside it; the orange puffer (Flixotide) and a green puffer (Serevent). If you have been taking the orange or green puffer, you should stop taking them once you start taking the purple puffer. Remember to rinse your mouth out as the orange puffer can cause sore throat, hoarse voice or very occasionally oral thrush.

Dear Nurse, my daughter finds that when she is exercising she starts to cough and become very wheezy. We have been told that she can use her reliever medication prior to exercise. Is this correct?

Yes it is correct that you can use your reliever medication prior to exercise so long as it is only two times a week and she is not using the reliever at any time. The recommendations are that reliever medication should only be used less than twice a week when well and this also included exercise. As you did not say how often your daughter is exercising each week, it is important that if she is requiring the reliever more than twice a week then she needs to see her doctor for review of medication. If she is only using the reliever then she may need to go onto a preventer medication such as Flixotide or Beclazone, but if she is already using these regularly then she may need to go onto a combination medication such as Seretide or Symbicort.

Dear Nurse, I am a 25-year-old woman and I have had asthma for many years and I use Flixotide 125mcg MDI two puffs every day morning and night. Can I reduce the amount of preventer I am using?

The simple answer is yes – **but** is your asthma well controlled? Firstly do the Asthma Control Test (ACT), it is a quick test to find out your present level of asthma control. Secondly, what is your peak flow? Is it close to your personal best? I suggest that in the first instance you take one puff every day morning and night but please discuss this with your doctor first. You must also continue to monitor your symptoms, your peak flow and how often you may need to use your reliever medication. If you find that your symptoms return and your peak flow is lower than expected and you are using the reliever more often, then this suggests that two puffs of the preventer is the right dose for you to be on.

IF YOU HAVE A QUESTION PLEASE EMAIL OR POST TO:
editor@asthma.org.nz or Dear Nurse, Asthma New Zealand,
 PO Box 67066, Mt Eden, Auckland 1349.

Errata: A typesetting error in the last issue of our O₂ magazine (April 2014) on bronchial thermoplasty, page 6 reported 'a prespecified temperature of 650C to the airway walls'. It should have read 65 degrees C. Apologies for this misinformation.

ASTHMA & SPRING ALLERGIES

Compiled by Adie Riddell RN
Asthma Nurse Educator

Have you been enjoying a respite during the cooler months from allergies that impact on your breathing?

After a long, cold winter, most of us look forward to rising temperatures, blooming plants and more hours of daylight. But if you have asthma, allergies, or both (as about 50% of people with asthma do), the pollen that comes with the season can take a toll. Before you know it you're sneezing, wheezing, and coughing. Weather conditions have a significant effect on the levels of pollen and mould in the air, which in turn can affect the severity of allergy symptoms. Typically, the common allergens that cause allergic rhinitis ("hay fever") flourish when the weather is warm.

Each season comes with its own set of potential asthma and allergy triggers. It is really helpful if you can identify those triggers. Triggers can be something in the environment like pollen, a chemical that you are exposed to, stress or emotions. In order to control your asthma, it is important to know what may trigger your asthma symptoms and how to limit your exposure to that trigger.

Some allergies and asthma will affect us year round, because they are triggered by substances found in our everyday living environment. But if your symptoms are worse in spring they are usually the outdoor type of allergy



– meaning the triggers are commonly found outdoors, rather than indoors.

With the warmer weather, come increased outdoor activity and the threat of new seasonal triggers. As flowers begin to bloom, pollen and air quality may play a role in your efforts to control asthma and allergy symptoms. Common springtime triggers found outside may include: pollen, flowers, weeds, trees, grass, pollution, and even temperature change. Seasonal pollens in the spring can result in airway inflammation and worsen underlying asthma.

The most common spring allergens are tree pollens. Pollens are tiny, egg shaped male cells found in flowering plants. The size of a typical pollen spore is smaller in diameter than a human hair, and there are many different kinds of trees that can produce pollen that triggers allergy. The pollen is very lightweight airborne powder and is easily spread far and wide on windy days. Pollen blows for up to 70 kilometres, so you don't have to have a tree in your back yard to be affected.

The experts tell us that the best way to fend off an asthma attack is to stay indoors, but that's not always fun or practical. Here are things you can do to help keep your asthma in check while still enjoying the change in season.

- Avoid the outdoors when pollen levels are high, usually between 5 a.m. and 10 a.m. There are apps that can tell you the local pollen count.
- After being outside, take a shower and wash your clothes. Pollens stick to your body, so if you don't do this, you'll transfer pollens inside your home.
- Dry your sheets and clothes indoors. Outdoor clotheslines can leave your laundry coated with pollen. Or finish your clothes off in a hot drier for 5-10 minutes to remove the pollen.
- In your home and your car, opt for air conditioning instead of open windows. Set your unit to recirculate so it doesn't bring in air from outside.
- When choosing ground cover for your yard, pick something that doesn't produce much pollen, like thyme or Mercury Bay Weed. Or consider pavers or decking.
- Keep your grass short. If possible, find someone to mow your lawn, fertilise, and do the gardening. If you do it yourself, wear a mask.
- Choose insect repellent lotions that are unscented instead of aerosol sprays.
- Do most of your working out indoors. If you exercise outside, take your asthma medications before you go. An antihistamine and two puffs of your asthma pump before exercise can prevent an asthma attack.

Spring Cleaning

Regular house (especially kitchen) cleaning, indoor humidity levels kept below 50 percent and the use of dust-mite resistant pillow and mattress covers may eliminate the breeding grounds for dust mite. Dusting, vacuuming and cleaning indoor surfaces can help to



eliminate many potential asthma and allergy triggers, but can also introduce new ones into the home environment.

Beware of cleaning products. While cleaning the home is important and can eliminate triggers such as mould, ingredients in cleaning products can cause asthma and allergy symptoms. Help to reduce the impact of these chemicals by ensuring that there is good ventilation i.e. open the windows when cleaning.

Review your asthma (and allergy) medications

If you haven't been using your asthma medication because you've been feeling fine, get back on track before things start blooming. Refill your prescriptions, and have quick-relief medicine available for flare-ups. Stay ahead of the pollen.

If you have allergies, make sure you are following that treatment plan as well. Use medications as prescribed. While limiting exposure to triggers can be helpful, you can never eliminate contact from all potential items that cause asthma and allergy symptoms. Always be sure to use your preventer medications as prescribed, even if you are feeling well. Remember to keep your quick-relief medicine (i.e. Respigen, Ventolin) close at hand in case of a flare-up. Other tools, such as a Peak Flow Meter and a written Asthma Action Plan, can complement your medications and help to guide your outdoor plans.

Asthma and allergies shouldn't keep you from enjoying springtime weather.

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- Spring Allergy Advice | ACAAI – American College of Allergy, Asthma ... <http://www.acaaai.org/allergist/allergies/seasonal/Pages/spring.aspx>
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CANNABIS (MARIJUANA)

by Elaine Murray RN
Asthma Nurse Educator

As an asthma nurse educator I always ask a client about their smoking status – current or former smoker, or is there anyone in the house that smokes whereby they are exposed to second hand smoke. I have had a client admit to smoking cannabis.



On reflection I wondered what effects this may be having on his airways in the long term.

Effects of cannabis

The effects of any drug vary from person to person. How cannabis affects a person depends on many things including their size, weight and health, whether they are accustomed to taking the drug, whether other drugs are present in their body, and the amount taken. Inhaled drugs reach the bloodstream quicker than those that are taken orally. This means that the effects can be felt more rapidly when cannabis is smoked rather than eaten.

There is no safe level of drug use. Use of any drug carries some risks – even prescribed medications can produce unwanted side effects.⁵

Broader health effects include dependence on the drug, increased risk of motor vehicle or work related accidents, cardiovascular disease and mental health problems.

The impact of cannabis on your lungs

Cannabis (marijuana) is not only the most widely used illegal drug in the western world but, after tobacco, also the most commonly smoked substance. The so-called recreational use of cannabis became more widespread during the golden period of jazz in the 1920's and 1930's and later became part of the youth culture in the 1960's. Although cannabis can be prepared for consumption in several forms (beverages, cakes, oils), the most usual intake is by inhalation through the

lungs. Cannabis can be smoked in cigarettes (joints), pipes or in special devices such as bong or chillum. Irrespective of the device, the technique of smoking cannabis differs from smoking regular tobacco with larger puffs, deeper inhalation and greater breath holding time. This smoking technique results in a far greater deposition of toxic substances in the lungs than regular tobacco smoking.¹

Gates et al² state that this inhalation technique results in an approximately fivefold increase in carboxyhaemoglobin concentration, fourfold greater amount of tar inhaled and the retention of one third more tar in the lower airway. Cannabis smoke contains various chemicals, including tetrahydrocannabinol (THC), carbon monoxide and carcinogens (substances that cause cancer).³

Some studies have shown that with each puff, the components of cannabis smoke become stronger and stronger towards the end.³ Another difference is that most tobacco cigarettes are filter-tipped, cannabis cigarettes are not.

Current evidence shows that cannabis smoking poses a substantial hazard to our lungs, although we know far less about the effects of cannabis smoke than that of tobacco smoke. However, there is evidence that smoking cannabis is linked to many adverse effects including chronic cough, wheezing, sputum production, acute bronchitis, airway obstruction, and lung cancer. Some published research shows a link between smoking cannabis

and tuberculosis, Legionnaires disease and collapsed lung or pneumothorax.³

In a study by Aldington et al. (2007) it was found that one joint of cannabis was similar to 2.5-5 tobacco cigarettes in terms of causing airflow obstruction and hyperinflation which are a consequence of the large airways impairment, probably due to the inflammation and oedema that occurs in the tracheobronchial mucosa of cannabis smokers, as well as mucous hypersecretion.⁴

Chronic obstructive pulmonary disease (COPD) and lung function

The constituents of cannabis smoke are similar to those of tobacco smoke except THC is only found in cannabis, and nicotine is only found in tobacco. Given the fact that they are very similar, there is concern that regular cannabis smoking could have similar health risks as regular tobacco smoking. As COPD is a risk in long term tobacco smokers, it's possible that cannabis smokers are also at risk of developing the disease.

Smoking a mixture of cannabis and tobacco was associated with a greater risk of COPD than smoking only tobacco.³

There is conflicting evidence about the effect smoking cannabis on its own has on lung function and the risk of developing COPD but there is evidence that the risk of airway obstruction increases with the number of joint-years of cannabis smoking, and an increased risk of COPD from smoking cannabis with tobacco regularly.³

Lung Cancer

Lung cancer develops when cells in the lungs become abnormal and grow out of control and over time this becomes a lump or tumour.

There is conflicting evidence that smoking cannabis causes lung cancer, but due to the fact that cannabis smoke has higher concentrations of cancer-causing polyaromatic hydrocarbons, cannabis smoker's inhale more deeply, don't use a filter, and hold their breath for longer, there will be a higher level of carcinogenic products deposited in the lower airways. This evidence shows that smoking cannabis may have a greater potential to cause lung cancer than smoking tobacco.³

Respiratory infections and immune effects

Researchers are starting to understand more about how the components of cannabis smoke affect the immune system. Smoking cannabis is likely to result in airway inflammation and infection. Studies suggest that THC suppresses several cells in the immune system including macrophages, natural killer cells and T cells.³

Current evidence shows that cannabis smokers are at risk of developing a range of infective lung conditions such as Legionnaires disease, tuberculosis and pulmonary aspergillosis, related to the mould that grows on the cannabis plants.³ Adlington et al.⁴ report that the predominant effects of cannabis on pulmonary structure, function and symptoms are in causing the symptoms of wheezing, cough, chest tightness and sputum production, large airways obstruction and hyperinflation, but not emphysema. The dose

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equivalence of 1:2.5-5 between cannabis joints and tobacco cigarettes in causing airflow obstruction is of major public health significance.

Second-hand smoke (inhalation of another person's cannabis smoke) can cause serious health problems, especially in infants and children or anyone with a chronic lung condition.⁶

On the basis of currently available information, health care professionals should consider whether cannabis smoking is contributing to their patient's respiratory complications, and advise their patients regarding the potential impact of this behaviour on their health.

References

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A GUIDE TO BUYING BACON FOR PEOPLE WITH ASTHMA

For many asthmatics food can be both a source of pleasure and a pain in the puku!

Time shortage and the need to store food have caused an explosion of preservatives and additives.

I first became aware of the problem for asthmatics when I heard a leading asthma specialist advise to select the more expensive wines. His rationale was simple – some preservatives in cheap wines may lead to wheezing.

Choose fresh food whenever you can. Frozen food requires less or no preservative, but you should still check for other additives. Your own body is a good indicator. What did you eat before you wheezed? Food diaries are a great tool.

Traditionally grown and preserved food is usually free of chemicals. Smaller boutique companies often make little batches of chemical free food, while larger companies do the opposite.

As an example, let's look at bacon. Bacon is made of pork, and traditionally was preserved with only two ingredients, sugar and salt, as natural preservatives. In addition, smoking was also used to kill bacteria and to add flavour.

Almost all bacon in supermarkets today is preserved using Sodium Nitrite or code 250. Even the expensive free range bacon often contains it. Sodium nitrate has been the topic of debate and several studies have looked at a possible link to cancer.* Nitrites and Nitrates are also listed by the Asthma and Allergy Foundation of America on their website in a list of the top eight food additives that may cause reactions.** In addition there can be colour, flavour enhancers, thickeners, starch and other additives in the bacon.

There is, however, a traditionally cured, chemical free bacon on the market – Hendersons bacon, produced in Auckland.

The owner, Martin Cambden, is an asthmatic. For years he noticed he wheezed after a cafe breakfast. It wasn't until he purchased the bacon company that he realised the link could be with preservatives and/or additives. Many of his customers reported that they could only eat his chemical free bacon as other brands triggered their allergies. Customers also asked



why his bacon was pale when bacon is typically bright pink. Simply the answer is because pork, without added nitrite preservative, is a pale meat. The flavour without preservatives is also remarkably different.

As an asthmatic, be aware of what is in your food. Not all number codes are bad, but be aware. Don't be afraid to call product managers and ask. Regarding bacon and ham, Martin from Hendersons Fine Foods is available to answer your questions on 09 443 2980. Email: info@hendersonsfoods.co.nz

Jann-Marie Ross BSc

*"The epidemiological enigma of gastric cancer rates in the US: was grandmother's sausage the cause?", International Journal of Epidemiology (2000) accessdate 2000-08-01

**SOURCE: This information should not substitute for seeking responsible, professional medical care. First created 1995; fully updated 1998; most recently updated 2005. © Asthma and Allergy Foundation of America (AAFA)

This is the link to the Asthma and Allergy Foundation of America report on Food Additives <http://www.aafa.org/display.cfm?id=9&sub=20&cont=285>



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SUPER 8

8 FIGHTERS, SEVEN FIGHTS, ONE CHAMPION

GIVING ASTHMA THE KNOCKOUT BLOW

On 4 June, Auckland hosted the world's richest boxing tournament! Super 8 brought together eight international heavyweight boxing champions, who fought it out at the unique event, held at Trusts Arena.

Asthma New Zealand were the recipient charity for the Super 8 event where 100% of funds raised from an online appeal and auction were given directly to asthma. Executive Director Linda Thompson is delighted with the amount raised, a grand total of around \$40,000. "Funds from Super 8 will allow Asthma New Zealand to implement future plans and projects that will greatly benefit people with asthma and their families," she says.

"Super 8 was the biggest card since the Tua vs. Cameron fight," says Sky Arena Director John McRae. "It was definitely the best matched card this country has seen and we're really happy to have attracted international attention from big names in heavyweight boxing."

The night itself was a knockout. Excitement mounted with top Kiwi entertainment and explosive quick-fire rounds. Super 8 is the biggest boxing event held in New Zealand since the infamous Tua vs. Cameron "Fight of the Century" in 2009.

"Super 8 was the biggest card since the Tua vs. Cameron

fight," says Sky Arena Director John McRae. "It was definitely the best matched card this country has seen and we're really happy to have attracted international attention from big names in heavyweight boxing."

Even with a wide variety of international talent, the Super 8 crown was won by veteran Kiwi boxer Kali Meehan; 44-year-old Meehan is based in Australia and has travelled extensively for work. He enjoyed the opportunity to fight in his hometown, defeating British Michael Sprott in the first knockout of the evening.

Supporting Asthma New Zealand and Super 8 was an online auction of money-can't-buy experiences, including a trip to Las Vegas to watch world-class boxing title fight. Charity auction producer Cathy Taylor collated an exciting range of auction items. "Super 8 was a once-in-a-lifetime opportunity," she says. "It's not often that there are so many big names all together at once."

"It was a privilege being involved in this event, in addition to the money raised it also gave us a chance to raise awareness of asthma which affects 20% of the population and with approximately one person in New Zealand dying every week from asthma we can't miss an opportunity like this. Our most grateful thanks to Sky Arena and their staff for their continued support," says Linda Thompson.

Sky Arena is poised for round two later in the year, turning their attention to which fighters will be welcomed back and which new talent can be brought on board. Perhaps if given the opportunity to work with Sky Arena again we can send our new Patron Temuera Morrison into the ring?



Asthma New Zealand Executive Director Linda Thompson with Irish boxer Martin Rogan.



Kali Meehan, event winner.



John McRae (Director) with George MacFarlane (CEO) Sky Arena.



Jono and Ben's Guy Williams messing with Hasim Rahman.



Shane Cameron.



Kali Meehan and Michael Sprott.



Introducing Cathy Gasparini

Personal profile of Cathy Gasparini

After 20 years of working in New Zealand and overseas as a Secretary, I decided to change careers and pursue the career that I had always wanted, which was nursing. I graduated from Auckland University of Technology in 2000 with a Bachelors of Health Science (Nursing), and have continued with Postgraduate study, working towards a Postgraduate Diploma in Health Sciences.

My nursing career started at North Shore Hospital, working in a busy medical ward, and then in 2001 I began working in the Coronary Care Unit at Auckland Hospital. In 2005 I moved over to Waitakere Hospital where a new Coronary Care Unit was opening and I was one of the start-up team of nurses in that unit. I worked there for nine years, during which time I developed a passion for education, and frequently worked with the Cardiac Rehabilitation Nurse Educators.

I am very excited to join the team of Asthma Nurse Educators at Asthma Auckland, and am enjoying working in a new

area of nursing. I look forward to developing new skills, and working within the community to effectively manage Asthma and COPD.

In my personal life, I have two teenage girls, and enjoy walking and camping. I have recently joined Karate with my daughter, which I am thoroughly enjoying – I believe it is never too late to try something new.



Scott Donaldson

Solo kayaker's journey across the Tasman was to be a world first for asthma

On the 19th of April, Scott Donaldson left Coffs Harbour, on a mission to be the first person to kayak across the Tasman Sea alone. In partnership with Asthma New Zealand, Scott's aim was to raise awareness of the importance of aerobic activity for health.

The journey was spectacular, not only for its enormity, but also due to Scott's own health. Both he and four year-old son Zac have asthma, a cause he and his family are passionate about supporting.

On the 11th of July, 83 days into his mission, Scott contacted the Maritime Rescue Coordination Centre for a rescue, while positioned halfway between Port Taranaki and the South Island.

Weather conditions over the last week of Scott's journey were particularly challenging, and on the night prior to his rescue, winds of up to 100 knots per hour churned the sea to such an extent that Scott's kayak rolled, causing injuries to his chest and neck.

Asthma New Zealand Executive Director, Linda Thompson said, "We are gutted to receive the heartbreaking news about Scott Donaldson's rescue so close to the end of his trans-tasman crossing. We can't imagine the emotional turmoil he's been going through in the recent weather conditions, but are pleased to hear he's OK and recuperating now with his family."

Both Linda Thompson and asthma Nurse Educator, Karen Little, were poised to make the trip down to Taranaki from Auckland to join Scott's friends and family in the welcome party. "We were going to head down in the asthma bus, our mobile clinic, to offer advice and information to the local community as they celebrate Scott's safe return," adds Linda.

Despite the unfortunate outcome, Asthma New Zealand is proud to be aligned with Scott's attempt. "We are delighted to have strong New Zealanders supporting and advocating on behalf of people with asthma," says Linda. "Scott's journey has been spectacular and we think he has still helped to raise huge awareness of the importance of aerobic activity, which was his aim."

While fit and healthy himself, Scott's asthma added another dimension to the trip. Kayaking is hard work, and he's had to keep an eye on his health throughout. It's unfortunate that events outside of Scott (or anyone's) control called short what was already a spectacular journey and would have been an incredible world-first. (Australian Andrew McAuley disappeared at sea in 2007, while attempting the same feat).

Scott credits his success to that point to his decision-making abilities and the support of those who have helped him. "It's really about ensuring you make the right decisions," he says.



"It's about making sure you know what you're doing and are able to keep things straight out there."

The Asthma New Zealand team send their well wishes for a speedy recovery to Scott, and remain proud to be aligned to what was nothing short of a heroic feat.

Note from Scott:

Thanks to everyone for your interest in this adventure.

I am recovering well and in good health. The combination of great clean salt air, fitness and great diet with very little sugar and fat assured an asthma free trip. It will take a few months to put the body back in shape but my lungs are in good shape. Only recently have I felt tight lungs with the re-introduction to pollens and a relaxing of the mental state. Being positive and motivated is half the battle!

I would like to give you what I consider important priorities for your attitude if you HAVE asthma.

That's the first point. I HAVE asthma or GET asthma. I do not SUFFER from it! I own the asthma it does not own me.

If you have asthma, you have a weakness in your physiology. The great thing about asthma compared to many other ailments, is that you can develop your lungs and turn them into strength. I hope I have proved that! It takes time and hard work but a better outcome is in your control.

There are many options and techniques some of which I hope to share soon. Your asthma needs to be managed as does your exercise. Embrace aerobic exercise as your long term tool.

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Temperature Changes

by Karen Little RN
Asthma Nurse Educator

Joe, for the first time, was not worried that he would get asthma this winter. His asthma nurse had asked his mother to check with his doctor to make sure that he started taking his orange puffer a month before the cold weather started. This is because it would take up to a month to start working. Joe always got horrible asthma when he caught a cold and often was away sick from school. In fact last winter he had 20 days off school and missed out on lots of things. The doctor had also given him a free flu shot so hopefully that would also stop him getting so sick. His mum had not known that because he was on the orange puffer it was free. Jo complained about having the small injection but really it didn't hurt at all.

"Cough, cough" Jo couldn't understand why his chest felt so tight and he was starting to wheeze. He didn't think he was getting a cold. It was four o'clock in the afternoon and he had been fine at school.

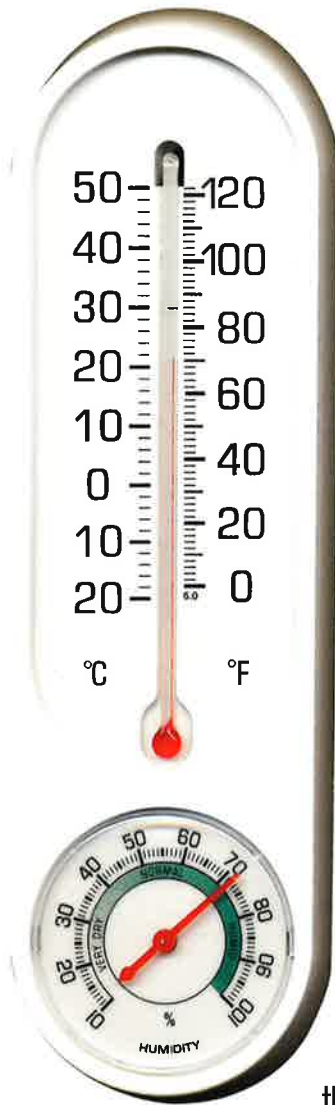
"Mum, mum, please help me I don't know where my blue puffer is," gasped Jo.

Mum started running around then remembered that the asthma nurse had given Jo a special bag to keep all his asthma puffers in. She helped Jo to have two puffs one at a time through his spacer.

Jo started to feel better right away. Mum couldn't understand why Jo had asthma. It was usually when he had a cold or playing sport that this happened. Just as well the asthma nurse was visiting tomorrow. She would ask her.

"Do you always keep the windows open at this time of night?" asked the nurse when she visited the next day after school.

"Yes I do as I like to have lots of air in the house so we have fresh air to breath and to let the wet on the windows dry out," mum replied. "The windows are not nearly as wet though, since we got the free insulation installed from WARM UP counties Manukau".



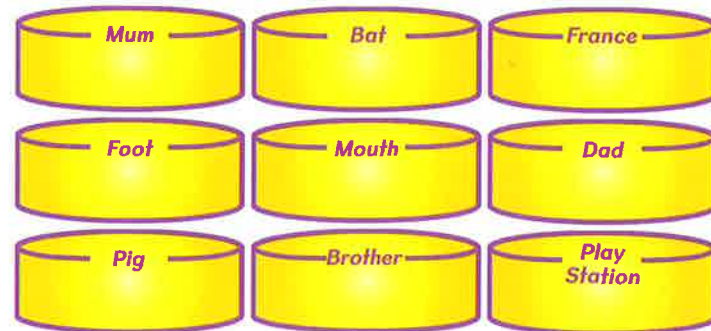
"You are quite right to try to dry the house out" the nurse agreed. "In the winter though the temperature drops a lot in the afternoon and it's a good idea to try to keep any warm air inside the house. It's the same at night, the temperature can drop about 3 degrees in the early morning". Jo started nodding as he had woken up last night about 3 am with a tight chest.

"Temperature changes can bring on asthma, especially at this time of year," explained the nurse. She noticed an oil fin heater that was behind the door. "You keep your living room lovely and warm at night" she praised Jo's mum, "but Jo's bedroom does seem very cold. It might be a good idea to put that oil fin heater in his bedroom so he is not going from being nice and warm into a cold bedroom. Just keep it on low to take the chill off; they do not use a lot of power. In fact they are one of the cheapest heaters to use".

Mum was pleased with this idea as she thought that the heater was too small and never seemed to get really hot. Jo was also pleased as he hated going to bed in his cold bedroom.

1 Read the clues below and cross out all the words on the shape that fall into the listed categories. You will be left with one word remaining on the shape. Can you find it?

- 1 Relative
- 2 Animal
- 3 Countries
- 4 Body parts



Kid's Page

2 Follow the lines from the UFO's to the squares and write down the letters. Once all the letters are in the squares, they will spell a word. (Hint: An asthma medication)

3 Keep clean
There are some asthma triggers in the list too. Can you find them?

P	D	B	K	D	U	S	T	O	S	G	J	H	L	B
D	W	A	S	H	W	U	W	I	J	N	S	O	A	P
E	O	W	L	G	R	O	O	M	A	I	R	I	N	G
S	W	S	O	L	B	M	K	O	L	P	T	D	P	Y
D	E	C	O	R	A	T	E	O	E	P	N	P	E	T
D	D	I	T	H	E	U	P	R	S	O	E	J	E	T
E	N	V	C	P	T	F	N	B	N	M	G	G	W	U
R	E	P	A	I	R	F	T	D	I	I	R	M	S	P
M	M	R	P	C	T	U	S	W	R	U	E	J	W	W
H	C	H	H	N	U	B	B	Y	P	Y	T	R	A	E
S	P	C	I	Z	M	U	S	O	L	V	E	N	T	E
U	W	A	X	I	N	G	M	L	F	H	D	V	N	U
R	P	E	T	P	B	V	K	I	T	U	S	I	T	K
B	X	L	N	C	X	O	R	A	G	S	H	C	Y	I
W	Y	B	O	R	H	F	L	P	H	S	C	O	U	R

- Airing
- Bleach
- Broom
- Brush
- Buff
- Detergent
- Dust
- Groom
- Laundry
- Mend
- Mopping
- Pail
- Paint
- Patch
- Polish
- Rags
- Repair
- Scour
- Soap
- Solvent
- Sweep
- Vacuum
- Wash
- Waxing

- Waxing
- Wash
- Vacuum
- Sweep
- Solvent
- Soap
- Scour
- Repair
- Laundry
- Mend
- Mopping
- Pail
- Polish
- Patch
- Polish
- Rags
- Groom
- Dust
- Detergent
- Buff
- Brush
- Broom
- Mopping
- Bleach
- Airing

There are some asthma triggers in the list too. Can you find them?

W	Y	B	O	R	H	F	L	P	H	S	C	O	U	R
B	X	L	N	C	X	O	R	A	G	S	H	C	Y	I
R	P	E	T	P	B	V	K	I	T	U	S	I	T	K
U	W	A	X	I	N	G	M	L	F	H	D	V	N	U
S	P	C	I	Z	M	U	S	O	L	V	E	N	T	E
H	C	H	H	N	U	B	B	Y	P	Y	T	R	A	E
M	M	R	P	C	T	U	S	W	R	U	E	J	W	W
R	E	P	A	I	R	F	T	D	I	I	R	M	S	P
E	N	V	C	P	T	F	N	B	N	M	G	G	W	U
D	D	I	T	H	E	U	P	R	S	O	E	J	E	T
D	E	C	O	R	A	T	E	O	E	P	N	P	E	T
S	W	S	O	L	B	M	K	O	L	P	T	D	P	Y
D	E	C	O	R	A	T	E	O	E	P	N	P	E	T
D	D	I	T	H	E	U	P	R	S	O	E	J	E	T
E	N	V	C	P	T	F	N	B	N	M	G	G	W	U
R	E	P	A	I	R	F	T	D	I	I	R	M	S	P
M	M	R	P	C	T	U	S	W	R	U	E	J	W	W
H	C	H	H	N	U	B	B	Y	P	Y	T	R	A	E
S	P	C	I	Z	M	U	S	O	L	V	E	N	T	E
U	W	A	X	I	N	G	M	L	F	H	D	V	N	U
R	P	E	T	P	B	V	K	I	T	U	S	I	T	K
B	X	L	N	C	X	O	R	A	G	S	H	C	Y	I
W	Y	B	O	R	H	F	L	P	H	S	C	O	U	R

- Read the clues
- (1) Play Station
 - (2) Ventolin

Answers:

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Email editor@asthma.org.nz

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THE DIRECT RELATIONSHIP BETWEEN SMOKING AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Karen Little RN
Asthma Nurse Educator

We need to prevent young people from starting to smoke and prevent those who already smoke to stop.

If advice about smoking cessation is to reach those who need it, doctors and nurses must accept that it is their responsibility to give this advice and to acquire the knowledge they need to do so effectively. We often see patients with asthma who continue to smoke, or parents and relatives of children with asthma, smoking in the house, car or outside. The nursing staff at Asthma Auckland have attended a two-day stop smoking training programme run by the Heart Foundation.

Under our services at Asthma Auckland we also access and see people with chronic obstructive pulmonary disease (COPD). I often wish I could take people who are unable to give up smoking to meet some of our COPD clients. For many active smokers, investment now in smoking cessation will reduce suffering many years down the line. Many people have COPD but are unaware of its full name as they think they have Emphysema, chronic bronchitis, breathlessness or an occasional wheeze. The nurses at Asthma Auckland can help aid the diagnosis by careful assessment and if necessary perform a spirometry test.

COPD is a preventable and treatable disease. Its pulmonary component is characterised by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily attributed to cigarette smoke.¹

Internationally, COPD is the fourth most common cause of death and cigarette smoking is the primary cause of COPD. The need to research the link between smoking and COPD is unnecessary as it already has been exhaustively researched and documented.

- 15% of all smokers will develop clinically significant COPD
- 50% will develop chronic bronchitis
- 50% will never develop any symptomatic physiological deficit
- All smokers have increased risks of developing vascular disease and cancer

This means all smokers have a 50% risk of developing COPD.²

It used to be thought that women were protected in some way from tobacco-related disorders. It is now apparent that if anything, women are more susceptible to COPD than are men, given the same levels of tobacco exposure. As yet there is no evidence of race-specific differences which could not have been the result of exposure to tobacco or other causal agents.³

Hospitalisations from COPD peak for non-Maori in the 80-84 year old age group, yet Maori reach similar rates at 60-64 years. Maori rates then continue to increase, beyond rates seen in non-Maori of any age group. A similar age pattern



was found in a recent audit of COPD admissions in Waikato which found the mean age of COPD admission for Maori was 57 years compared to 72 years for New Zealand European patients with COPD.⁴

In New Zealand, it is estimated that at least 65% of female deaths and 79% of male deaths from COPD are due to tobacco smoking. Whether or not increasing use of loose tobacco impacts upon rates of morbidity or mortality is not yet known.⁵

Direct health care costs of COPD in New Zealand exceed \$102 million annually, and are possibly almost twice that. On average, direct costs per year for each patient are likely to be almost \$2,600. These exclude personal costs.⁶ Personal costs are dependent on personal and family resources, and impact on the wider families' quality of life. Within six or seven years of diagnosis, most people with COPD are no longer capable of productive work. In the Netherlands, a dynamic life table model was used to project the future burden of COPD.⁷ The models predict that marked increases are unavoidable in both the prevalence and burden of COPD by 2015. Loss of life years are expected to rise by more than 60%. Loss of disability-adjusted life years will increase by 75%, and health care costs are projected to rise by 90% over the years from 1994 to 2015, with smoking accounting for 90% of the costs. In New Zealand, as in most other countries, these models have

not yet been applied to COPD. Essentially however, the main driver of COPD costs will continue to be smoking rates, and it is by driving these down that diseases, and costs, will reduce.

In over 90% of cases, COPD is the result of smoking, however, very few people with COPD attribute their condition to smoking.⁸ There is a marked variability in the degree of damage smoking will do in an individual person. Only about 15% of chronic smokers will go on to develop clinically significant COPD. Why some smokers seem to be protected against COPD is still under investigation. The main disease-causing element from smoking actually comes from the tar, a dark viscous fluid from tobacco smoke which contains at least 4000 different chemicals.

COPD is caused by two main mechanisms, namely chronic inflammation of the small airways and gradual destruction of the alveoli.⁹ Damage to the lungs occurs as a result of a chronic inflammatory response and irritation of the lining of the small airways of the lungs from smoking, which as a result causes fibrosis and narrowing of the airways. This chronic inflammation also results in the goblet cells in the mucosal lining of the central airways becoming enlarged, producing excessive mucus and a productive cough. Various protease enzymes are also released as a result of cigarette smoke by neutrophils causing destruction and collapse of the elastic and supporting tissue of the bronchioles and alveoli. Smoking causes irreversible structural changes to the lungs and as a consequence accelerates the normal decline in lung function.

However there is good news

If a person with COPD stops smoking, the rate of decline in lung function and disease progression can be reduced.¹⁰ It is

never too late to give up smoking. Since attending the stop smoking programme, the nurses at Asthma Auckland are able to prescribe nicotine replacement therapy for a minimal prescription charge of a few dollars or refer clients to a stop smoking cessation practitioner. Please start thinking about giving up smoking now, be part of the declining trend of numbers of smokers in New Zealand.

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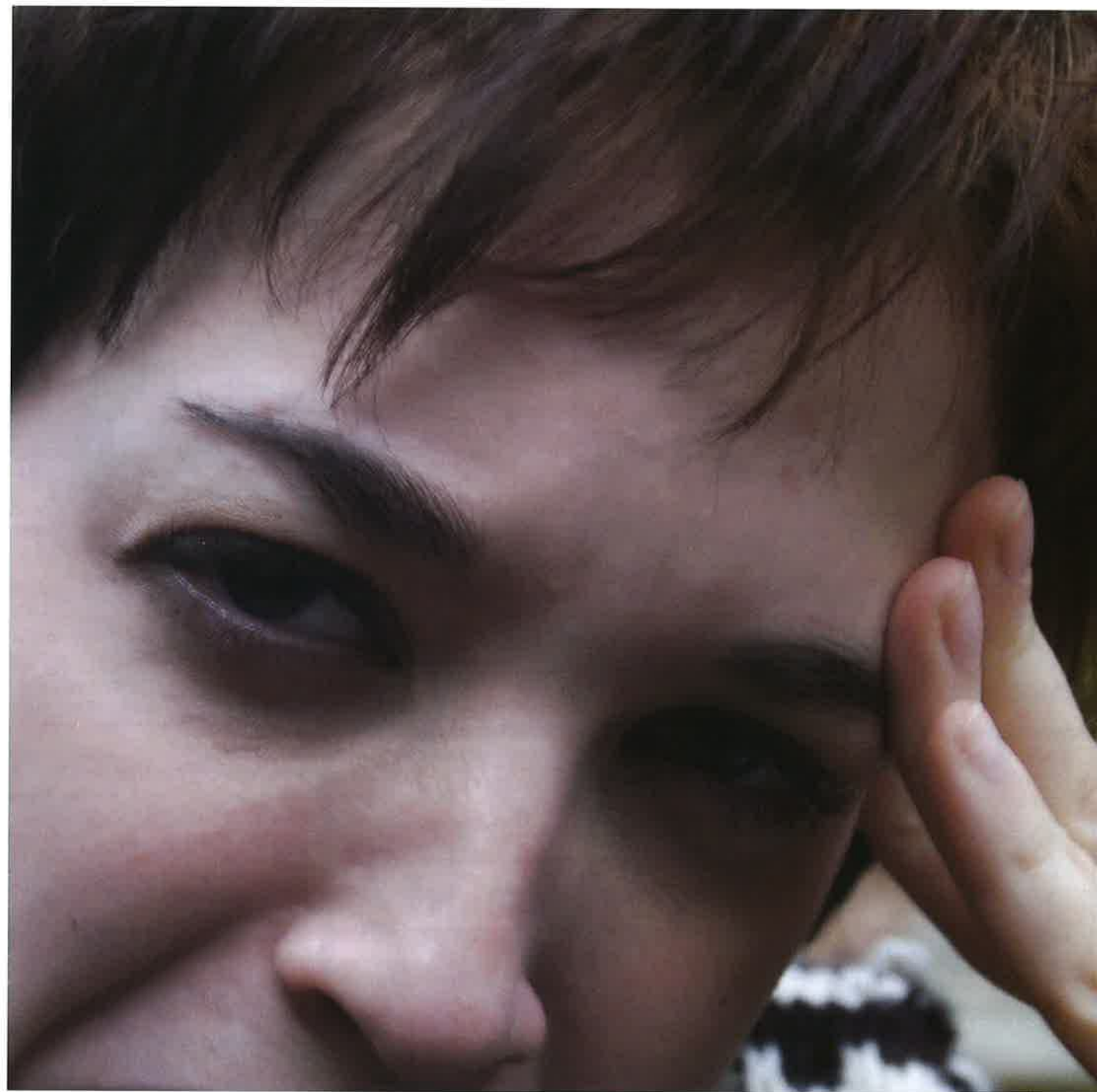
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- Michelle, (Mother of asthmatic)

IS ANXIETY AND DEPRESSION MORE COMMON IN PEOPLE WITH COPD?

by Ann Wheat RN BN
Asthma Nurse Educator



Chronic Obstructive Pulmonary Disease (COPD) affects approximately 14.2% of the adult population over 40 years of age in New Zealand (about 200,000 people).¹ COPD ranks fifth for both men and women as the most common cause of death, but the rate for Maori is almost double that for non-Maori.¹ Smoking is the most common cause for COPD (this can also include cannabis use) but it can also be caused by occupational chemicals, workplace dust and Alpha1 Antitrypsin deficiency (an inherited disorder in approximately 2% of people).

The symptoms of COPD are dyspnoea (breathlessness), coughing and sputum production which leads to irreparable lung damage, causing decreased lung function. This, therefore,

has a huge impact on mortality and morbidity. Morbidity can also be affected by anxiety and depression but the prevalence differs greatly from 6 – 74% for anxiety³ and about 10 – 40% for

depression.^{5,6} Anxiety and depression have been shown to be correlated with respiratory symptoms such as breathlessness and reduced ability to exercise.² Anxiety disorders are known to occur more frequently in people with COPD than the general public.³ They also increase the risk of re-hospitalisation.² There is also a connection with the symptoms of anxiety and depression and the severity of the disease itself.² It appears that women have higher levels of anxiety and depression and worse symptom-related quality of life than men.⁴ They also have higher levels of breathlessness for a similar level of ventilatory impairment than men.⁴

It is also well worth mentioning that mental health problems are underdiagnosed in patients with COPD.⁶ One of the most common disorders associated with mental health issues in COPD is panic attacks.⁶ Another anxiety disorder that is associated with COPD is phobias such as agoraphobia⁷ (fear of being in an open space and having a panic attack in crowded places, queues, shopping centres or even, buses, trains and airplanes), social phobia, as well as a range of other phobias.⁶

It is also worth noting that patients who have anxiety and depression often have low self-confidence and self-efficacy which can lead to them not being able to cope as well with their condition.⁸ This means that they are often unwilling to participate in Pulmonary Rehabilitation, have decreased physical activity, often fail to stop smoking, do not eat healthily and do not take their medications as prescribed.⁸ This can then lead on to more exacerbations and quicken the disease progression.

Conversely, failure to quit smoking is associated with depression, but it is also worth noting that smoking cessation can increase the risk of depression when trying to stop smoking.⁶

It is therefore very important that the mental health of people trying to stop smoking with COPD is monitored regularly.⁶ End of life issues can also be associated with anxiety and depression especially in those with end-stage COPD, with an estimated prevalence of 90%.⁶

So what can be done to help?

Once anxiety and/or depression have been identified in a patient with COPD, there are several courses of action that can be taken, although research on the benefits is limited on these treatments. The following is an outline of these treatment options:

Cognitive Behaviour Therapy (CBT) can be used to treat panic attacks and has shown some positive results in small trials.¹ CBT is a psychotherapy that helps patients to understand the thoughts and feelings that affect behaviours. The aim of this type of treatment is that while they cannot control the environment they live in they can control how they interpret and deal with their environment.⁹ This treatment is often used by psychologists and/or psychiatrists.¹

Pulmonary Rehabilitation has extensive evidence supporting its benefits. The programme assesses patient's problems and

goals, give exercise training, dietary advice and psychological support.⁶ The aim of these programmes is to help patients regain the highest possible level of independent functioning that they can. Benefits of these programmes include: an improvement in quality of life, increase in exercise tolerance, reduction in dyspnoea and fatigue and helps reduce anxiety and depression.⁶

Support groups are a great way for people with COPD to come together so that information can be reinforced and clarified that has been given to them by health professionals, provide up to date information on lung health, share experiences in a safe environment, help patients become more involved in their healthcare through self-management techniques, participate in social activities and exercise programmes, encourage patients to think more positively about their lung health and also help carers understand lung disease.¹

Medications are often used to treat anxiety and depression in COPD but there is little in the way of randomised trials to back up their use.⁶ These medications, especially benzodiazepines, can have a depressive effect on the respiratory drive.¹ Other medications that can be used are antidepressants, and occasionally antipsychotic agents.⁶

Other forms of treatment methods that can be used are relaxation therapy, interpersonal psychotherapy, self-management programmes, more extensive disease management programmes and supportive therapy.

In conclusion, anxiety and depression are both related to COPD in that they can cause worsening of COPD outcomes. It is therefore essential that they are identified and the patient offered help and assistance to try to overcome these conditions.

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COPD IN FLIGHT

Compiled by Vicki Lyford RN
Asthma Nurse Educator

A holiday? Family reunion? Wedding? Or the birth of a baby? Whatever the reason is, you need to get there in a plane.

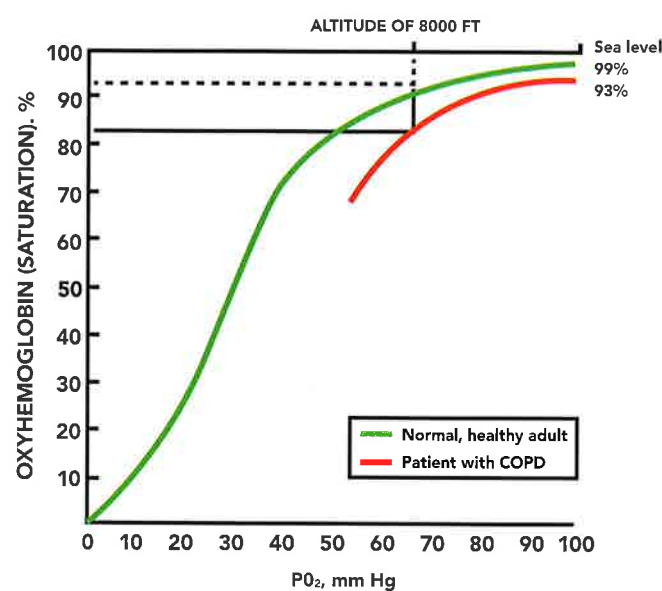
With Chronic Obstructive Pulmonary Disease (COPD) is it possible? – What about your oxygen, your nebuliser and medications. The short answer to that generally is Yes! but only with good medical advice, correct planning and preparation.

Unfortunately it is not as simple as getting on the plane and going where ever you want.

The reason for this is the cabin air pressure. The air pressure in the plane cabin is lower than the air pressure at ground level. It equates to being 6000-8000 feet up a mountain and being at a higher altitude means our blood oxygen levels fall, which leaves you breathless. Usually this is not harmful but to those people who have lung conditions it can be very detrimental to their health. A healthy adult will desaturate to about 92-93% when in flight whereas the person with COPD will find their oxygen saturations dropping to about 82% during the flight and they may experience hypoxia symptoms.¹ Therefore people with a low oxygen saturation pre-flight (<95% at sea level) should have supplemental oxygen during the flight.¹ If a person's oxygen saturations are 95% or above at sea level they do not need oxygen for flying.⁹

So physically, what is happening to your lungs is that when we are exposed to higher altitudes our lungs have to work harder to maintain adequate oxygen levels in their body. Because of the structural changes and airflow obstruction, air trapping and abnormalities in gas exchange we routinely deal with in COPD; this is all the more difficult to manage. It is difficult to

Figure 1. Percentage of oxygen saturation at 8000 ft above sea level for a normal, healthy adult and a patient with COPD



COPD—chronic obstructive pulmonary disease.

get enough oxygen into the bloodstream and dispose of the excess carbon dioxide which leads to hypoxaemia, shortness of breath and respiratory distress as the gases within the body expand.^(4,5) Oxygen supplement therapy will enable the body to get the oxygen it needs to enable you to arrive healthy and safely at your destination.⁴

This is where the planning is vital. You need to get medical clearance from your GP and have your medications, including oxygen, prescribed so you may take them on as cabin luggage. You need to obtain permission from the airline that enables you to use specialised medical equipment such as oxygen or electrical devices (nebuliser or POC) needed for your treatment during flight.^(2,6,7) However using a spacer with your inhaler is just as effective as a nebuliser!

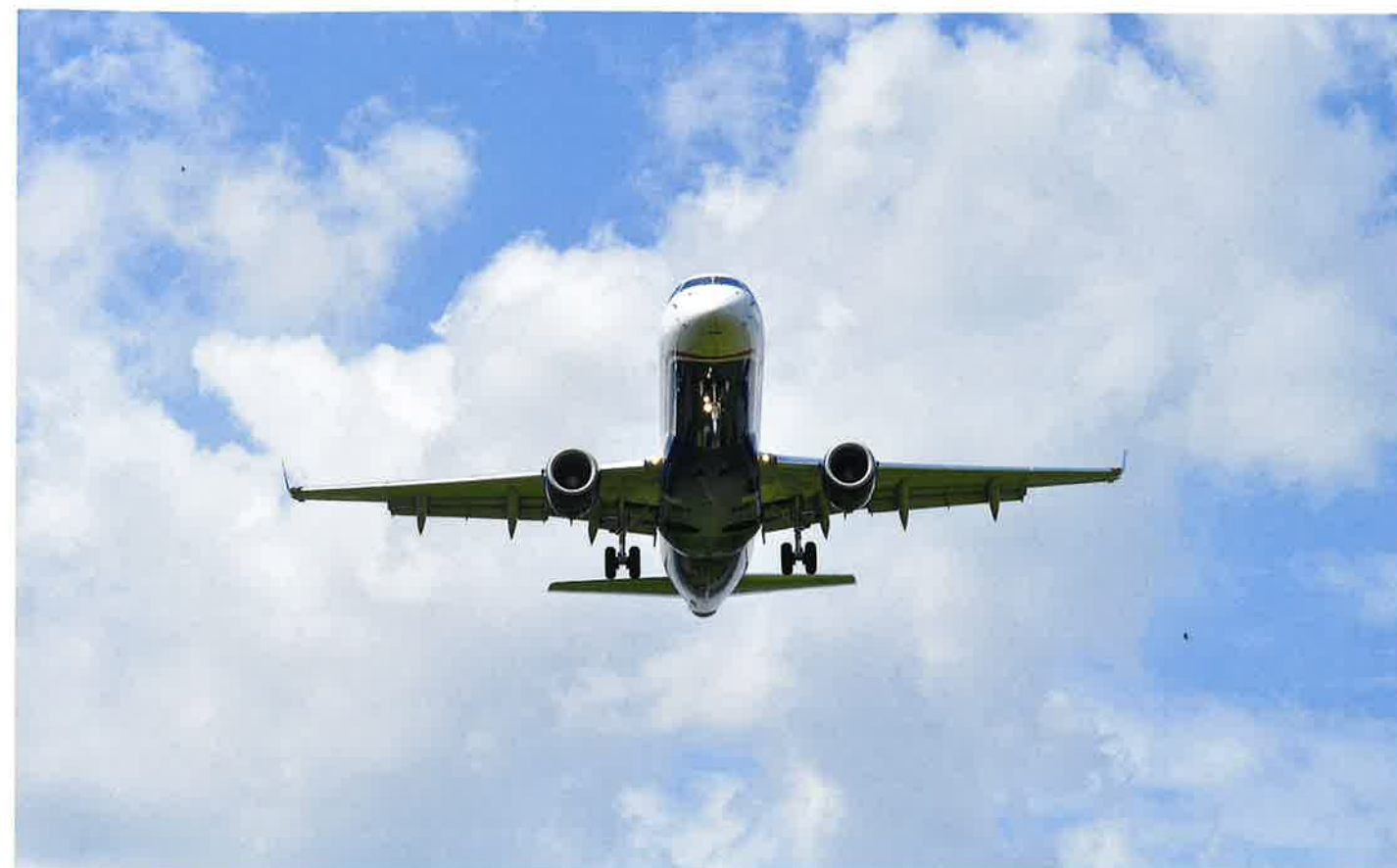
Discuss with your GP what the best support is for you during flight and contact the airline company to discuss your best options. Airlines usually provide oxygen up to 4L/min via nasal cannula therefore patients that require this amount at ground level will not be able to maintain oxygen saturations greater than 95% when in flight and therefore will be deemed not fit to fly in commercial airplanes.¹

Most airlines have a list of approved equipment that is suitable to take on an aircraft and they also hire out equipment to passengers. For Air New Zealand, any customer-owned medical equipment needs to be certified, checked and approved by Air New Zealand Engineering prior to use on an aircraft to ensure it will not interfere with the safety and operation of the aircraft hence the planning needed. This assessment takes a minimum of two weeks to complete. Air New Zealand aircraft power supply is 115 volts at 400 hertz whereas most household domestic power is supplied at 230 volts at 60 hertz so your equipment needs to be compatible to this. You must bring at least two fully charged batteries to cover the duration of your flight and/or stopovers.^(2,6,7)

Air New Zealand flights require you to submit completed MEDA forms Part 1 and 2 at least 72 hours prior to your travel.⁶ They can provide oxygen at 2L/min via nasal cannula using an "Airsep Lifestyle Portable Oxygen Concentrator (POC). This works 'On Demand' with a pulse flow system when you breathe in. Check with your GP to ensure this is appropriate for you.⁷ You will be required to check in one hour before the final check in time and pay for additional charges (Oxygen or POC hire). Air New Zealand does not allow Private or Hospital compressed-gas cylinders on board unless they are packaged as Dangerous Goods.⁷

Your GP can contact the airlines with any queries about in-flight oxygen requirements and you can proceed from there.⁷

However it is all down to careful planning and preparation so here are some travel tips:



- 1 Ensure you have the time to make the preparations of this trip as uneventful as possible, (at least two-three weeks).
- 2 Ensure you have medical clearance before making any travel arrangements. This includes a medical certificate, prescription for all medications, including oxygen. Check that you have a full supply of your medications and a primed spacer and take them on board with you as hand luggage.^(3,6,10)
- 3 If you have had an active exacerbation with your COPD seek medical advice for air travel at this time before paying for your ticket.⁶
- 4 Check with your airline well in advance to ensure your medical equipment is compatible or they can supply oxygen to you for your flight. Have you factored in the cost for this? Then recheck again to ensure all communications are correct and the airlines are ready for you and any equipment you need.^(8,10)
- 5 If possible try to have direct flights to your destination as this eliminates the need for extra oxygen during stop-overs.¹⁰
- 6 Ensure you drink plenty of water as the air conditioning on the flight dries out your membranes and you do not want a dehydrated respiratory tract.^(10,11)
- 7 If you get breathless when walking it is important to contact the airlines and ensure they can provide help for you to get to and from the plane at the terminal. Wheelchairs and

oxygen can be available to you if this is required and they are aware of your needs before you travel.¹¹

- 8 Thoroughly check your Travel Insurance Policy. Ensure you are fully covered should there be any unforeseen costs relating to your lung condition. Some policies do not cover your lung condition unless you have written authorisation from your GP stating you are fit to fly. Check it out thoroughly.¹¹

So whether you use a spacer, nebuliser, POC or an oxygen bottle, your needs can be met to enable you to fly to your destination. So ENJOY!!!

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Source: PloS One

Cord Blood 25(OH)-Vitamin D Deficiency and Childhood Asthma, Allergy and Eczema: The COPSAC2000 Birth Cohort Study; Chawes B, Bønnelykke K, Jensen P, Schoos A, Heickendorff L, Bisgaard H; PloS One 9 (6), e99856 (2014)

BACKGROUND Epidemiological studies have suggested an association between maternal vitamin D dietary intake during pregnancy and risk of asthma and allergy in the offspring. However, prospective clinical studies on vitamin D measured in cord blood and development of clinical end-points are sparse.

OBJECTIVE To investigate the interdependence of cord blood 25-hydroxyvitamin D (25(OH)-Vitamin D) level and investigator-diagnosed asthma- and allergy-related conditions during preschool-age.

METHODS Cord blood 25(OH)-Vitamin D level was measured in 257 children from the Copenhagen Prospective Studies on Asthma in Childhood (COPSAC2000) at-risk mother-child cohort. Troublesome lung symptoms (TROLS), asthma, respiratory infections, allergic rhinitis, and eczema, at age 0-7 yrs were diagnosed exclusively by the COPSAC pediatricians strictly adhering to predefined algorithms. Objective assessments of lung function and sensitization were performed repeatedly from birth.

RESULTS After adjusting for season of birth, deficient cord blood 25(OH)-Vitamin D level (<50 nmol/L) was associated with a 2.7-fold increased risk of recurrent TROLS (HR=2.65; 95% CI=1.02-6.86), but showed no association with respiratory infections or asthma. We saw no association between cord blood 25(OH)-Vitamin D level and lung function, sensitization, rhinitis or eczema. The effects were unaffected from adjusting for multiple lifestyle factors.

CONCLUSION Cord blood 25(OH)-Vitamin D deficiency associated with increased risk of recurrent TROLS till age 7 years. Randomized controlled trials of vitamin D supplementation during pregnancy are needed to prove causality.

Source: Respir Res

Controlled and uncontrolled asthma display distinct alveolar tissue matrix compositions; Weitoft M, Andersson C, Andersson-Sjölund A, Tufvesson E, Björner L, Erjefält J, Westergren-Thorsson G; Respiratory Research 15 (1), 67 (Jun 2014)

OBJECTIVE Whether distal inflammation in asthmatics also leads to structural changes in the alveolar parenchyma remains poorly examined, especially in patients with uncontrolled asthma. We hypothesized that patients who do not respond to conventional inhaled corticosteroid therapy have a distinct tissue composition, not only in central, but also in distal lung.

METHODS Bronchial and transbronchial biopsies from healthy controls, patients with controlled atopic and patients with uncontrolled atopic asthma were processed for immunohistochemical analysis of fibroblasts and extracellular matrix molecules; collagen, versican, biglycan, decorin, fibronectin, EDA-fibronectin, matrix metalloproteinase (MMP)-9 and tissue-inhibitor of matrix metalloproteinase (TIMP)-3.

RESULTS In central airways we found increased percentage areas of versican and decorin in patients with uncontrolled asthma compared to both healthy controls and patients with controlled asthma. Percentage area of biglycan was significantly higher in both central airways and alveolar parenchyma of patients with uncontrolled compared to controlled asthma. Ratios of MMP-9/TIMP-3 were decreased in both uncontrolled and controlled asthma compared to healthy controls. In the alveolar parenchyma, patients with uncontrolled asthma had increased percentage areas of collagen, versican and decorin compared to patients with controlled asthma. Patients with uncontrolled asthma had significantly higher numbers of myofibroblasts in both central airways and alveolar parenchyma compared to patients with controlled asthma.

CONCLUSIONS Tissue composition differs, in both central and distal airways, between patients with uncontrolled and controlled asthma on equivalent doses of ICS. This altered structure and proposed change in tissue elasticity may lead to abnormal mechanical properties, which could be a factor in the persistent symptoms for patients with uncontrolled asthma.

Source: COPD

Smoking Prevalence and Cessation Characteristics among U.S. Adults With and Without COPD: Findings from the 2011 Behavioral Risk Factor Surveillance System; Schauer G, Wheaton A, Malarcher A, Croft J; COPD (May 2014)

ABSTRACT INTRODUCTION Cigarette smoking is a major cause of chronic obstructive pulmonary disease (COPD) but many persons with COPD continue to smoke. Quitting can help prevent the development of and complications from COPD. This study examined whether smoking and cessation behaviors differed among adults with a) COPD, b) asthma, c) other chronic conditions only, or d) no chronic conditions. Methods: Smoking and chronic disease status was obtained from 488,909 adults aged >18 years using the Behavioral Risk Factor Surveillance System; 9,476 current smokers and recent quitters in 5 states responded to additional questions about cessation. We computed age-adjusted prevalence of smoking and past-year quit attempts, and used bivariate and multivariable logistic regression to identify correlates of past-year quit attempts. **RESULTS** Similar to the overall sample, in the 5-state sample, 47.3% of adults with COPD were current smokers versus 23.1% of those with asthma, 28.8% of adults with other chronic conditions, and 20.0% of those with no chronic conditions. Those with COPD did not differ significantly from those with asthma, other chronic diseases, or no chronic disease in having made a past-year quit attempt (59.7% versus 64.0%, 61.5%, and 53.9%, respectively). Smokers with COPD were significantly more likely than those with no chronic disease to have used cessation treatment resources, including a quitline, counseling, or medication (p<0.001). **CONCLUSIONS** Adults with COPD were just as likely as those without COPD to make a past-year quit attempt; however, approximately 40% of smokers with COPD did not try to quit.

Source: Lung

Impact of Long-Acting Bronchodilators and Exposure to Inhaled Corticosteroids on Mortality in COPD: A Real-Life Retrospective Cohort Study; Manoharan A, Short P, Anderson W, Lipworth B; Lung (Jun 2014)

INTRODUCTION We performed a real-life retrospective analysis to assess the impact of long-acting bronchodilator therapy and associated exposure to inhaled corticosteroids (ICS) on all-cause and cardiovascular mortality in patients with chronic obstructive pulmonary disease (COPD).

METHODS We used record linkage data from patients with a diagnosis of COPD in Tayside, Scotland, between 2001 and 2010. All-cause and cardiovascular mortality were assessed using Cox proportional hazard regression.

RESULTS A total of 4,133 patients were included, mean FEV1 of 59.5 %, mean age of 68.9 years and mean follow-up of 4.6 years. There were 623 who were exposed to long-acting bronchodilators only and 3,510 to long-acting bronchodilators plus ICS. 1,372 patients (33 %) died during the study period. Compared with controls taking only long-acting bronchodilators either alone or in combination, all-cause mortality was reduced in patients taking long-acting muscarinic antagonist (LAMA) + ICS as dual therapy: adjusted hazard ratio 0.62 (95 % CI 0.45-0.85), but not by long-acting beta-agonist (LABA) + ICS: adjusted hazard ratio 1.02 (95 % CI 0.80-1.31). Cardiovascular mortality was not reduced by dual therapy with either LABA or LAMA and concomitant ICS exposure. All-cause and cardiovascular mortality were both reduced in patients taking triple therapy with LABA + LAMA + ICS: adjusted hazard ratio 0.51 (95 % CI 0.41-0.64) and 0.56 (95 % CI 0.35-0.90), respectively.

CONCLUSION In patients exposed to ICS, concomitant use of LAMA alone as dual therapy or in combination with LABA as triple therapy were associated with reductions in all-cause mortality, while concomitant use of LABA without LAMA conferred no reduction. Moreover, only triple therapy was found to confer benefits on cardiovascular mortality.

Source: Eur Respir J

The clinical and genetic features of COPD-asthma overlap syndrome; Hardin M, Cho M, McDonald M, Beaty T, Ramsdell J, Bhatt S, van Beek E, Make B, Crapo J, Silverman E, Hersh C; European Respiratory Journal (May 2014)

Individuals with chronic obstructive pulmonary disease (COPD) and asthma are an important but poorly characterised group. The genetic determinants of COPD and asthma overlap have not been studied. The aim of this study was to identify clinical features and genetic risk factors for COPD and asthma overlap. Subjects were current or former smoking non-Hispanic whites or African-Americans with COPD. Overlap subjects reported a history of physician-diagnosed asthma before the age of 40 years. We compared clinical and radiographic features between COPD and overlap subjects. We performed genome-wide association studies (GWAS) in the non-Hispanic whites and African-American populations, and combined these results in a meta-analysis. More females and African-Americans reported a history of asthma. Overlap subjects had more severe and more frequent respiratory exacerbations, less emphysema and greater airway wall thickness compared to subjects with COPD alone. The non-Hispanic white GWAS identified single nucleotide polymorphisms in the genes CSMD1 (rs11779254, p = 1.57x10(-6)) and SOX5 (rs59569785, p = 1.61x10(-6)) and the meta-analysis identified single nucleotide polymorphisms in the gene GPR65 (rs6574978, p = 1.18x10(-7)) associated with COPD and asthma overlap. Overlap subjects have more exacerbations, less emphysema and more airway disease for any degree of lung function impairment compared to COPD alone. We identified novel genetic variants associated with this syndrome. COPD and asthma overlap is an important syndrome and may require distinct clinical management.

Source: BMC Pulm Med

Inflammatory cytokine response to exercise in alpha-1-antitrypsin deficient COPD patients 'on' or 'off' augmentation therapy; Olfert M, Malek M, Eagan T, Wagner H, Wagner P; BMC Pulmonary Medicine 14 (1), 106 (Jun 2014)

BACKGROUND There is still limited information on systemic inflammation in alpha-1-antitrypsin-deficient (AATD) COPD patients and what effect alpha-1-antitrypsin augmentation therapy and/or exercise might have on circulating inflammatory cytokines. We hypothesized that AATD COPD patients on augmentation therapy (AATD + AUG) would have lower circulating and skeletal muscle inflammatory cytokines compared to AATD COPD patients not receiving augmentation therapy (AATD-AUG) and/or the typical non-AATD (COPD) patient. We also hypothesized that cytokine response to exercise would be lower in AATD + AUG compared to AATD-AUG or COPD subjects.

METHODS Arterial and femoral venous concentration and skeletal muscle expression of TNFalpha, IL-6, IL-1beta and CRP were measured at rest, during and up to 4-hours after 50 % maximal 1-hour knee extensor exercise in all COPD patient groups, including 2 additional groups (i.e. AATD with normal lung function, and healthy age-/activity-matched controls).

RESULTS Circulating CRP was higher in AATD + AUG (4.7 +/- 1.6 mg/dL) and AATD-AUG (3.3 +/- 1.2 mg/dL) compared to healthy controls (1.5 +/- 0.3 mg/dL, p<0.05), but lower in AATD compared to non-AATD-COPD patients (6.1 +/- 2.6 mg/dL, p<0.05). TNFalpha, IL-6 and IL-1beta were significantly increased by 1.7-, 1.7-, and 4.7-fold, respectively, in non-AATD COPD compared to AATD COPD (p<0.05), and 1.3-, 1.7-, and 2.2-fold, respectively, compared to healthy subjects (p<0.05). Skeletal muscle TNFalpha was on average 3-4 fold greater in AATD-AUG compared to the other groups (p<0.05). Exercise showed no effect on these cytokines in any of our patient groups.

CONCLUSION These data show that AATD COPD patients do not experience the same chronic systemic inflammation and exhibit reduced inflammation compared to non-AATD COPD patients. Augmentation therapy may help to improve muscle efflux of TNFalpha and reduce muscle TNFalpha concentration, but showed no effect on IL-6, IL-1beta or CRP.

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References: 1. Seretide Datasheet, GSK 2. Tarsin WY et al. Int J Pharm. 2006; 316: 131-137 3. Bateman ED et al. Am J Respir Crit Care Med 2004;170 (8): 836-844 4. Pharmaceutical Schedule April 2014, PHARMAC.

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