

THE NZ JOURNAL OF RESPIRATORY HEALTH

DECEMBER 2015



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opened my
eyes to my
asthma control”
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– age 49, lung age 82!**

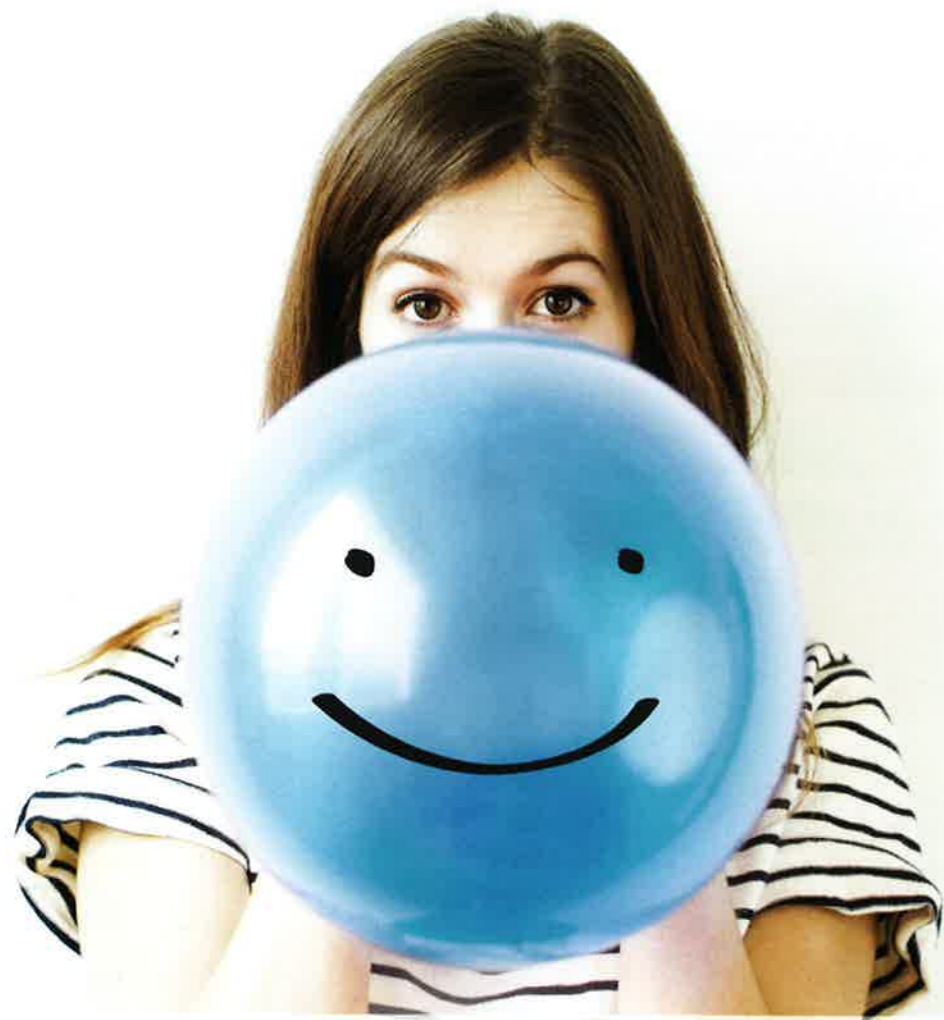
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asthma
NEW ZEALAND
THE LUNG ASSOCIATION

BREATHE EASY AND ASK FOR VENTOLIN

THE ALCOHOL-FREE INHALER¹



References: 1. Ventolin Data Sheet, GSK New Zealand.

Ventolin[®] (salbutamol) is available as an alcohol-free and CFC-free Inhaler, 100mcg per actuation. **Ventolin is a partially funded Prescription Medicine.** *Ventolin* is a short acting bronchodilator for the management and prevention of mild asthma attacks and for the acute management of reversible airways obstruction due to asthma, chronic bronchitis and emphysema. **Dosage:** Acute bronchospasm – 1 or 2 puffs, Chronic therapy – may take up to 2 puffs four times daily. **Contraindications:** Hypersensitivity to this medicine, threatened abortion, toxæmia of pregnancy, antepartum hæmorrhage, placenta prævia. **Warnings and Precautions:** Do not use as the only or main treatment. Consider using maximum doses of inhaled steroids and/or oral steroids if short-acting bronchodilators become less effective or use increases. Hypokalaemia may occur, particularly in acute severe asthma, potentiated by xanthine derivatives, steroids, diuretics and hypoxia. Caution in hyperthyroidism, hypertension, cardiovascular diseases and diabetes. Avoid beta-blockers, tricyclic antidepressants, MAOIs, digitalis. **Common Side Effects:** Headache, mild tremor, mouth and throat irritation, tachycardia and peripheral vasodilation, paradoxical bronchospasm. Before prescribing *Ventolin*, please review the Data Sheet at www.medsafe.govt.nz. *Ventolin* is a registered trade mark of the GlaxoSmithKline group of companies. Marketed by GlaxoSmithKline NZ Limited, Auckland. TAPS DA1512IG/15MY/SAL0006

Adverse events involving GlaxoSmithKline products should be reported to GSK Medical Information on 0800 808 500.

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Robert Rakete (photo provided)



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DISTANCE LEARNING ASTHMA/COPD NURSING COURSE INFORMATION

Applications are now invited from registered nurses wanting to enrol in the Asthma New Zealand/Unitec Institute of Technology Asthma Nursing Course for February 2016 and COPD Nursing Course for April 2016. 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 the Asthma and COPD Nursing Courses is to provide nursing health professionals with a high level of evidence-based asthma and COPD knowledge that promotes best practice and is consistent with national policy.

Since the commencement of the Asthma and COPD Nursing Courses, 1,050 nurses have enrolled in these courses. 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 a challenging but thoroughly enjoyable learning experience that is within the grasp of any competent nurse practitioner.

Asthma New Zealand in association with Unitec Institute of Technology offers these courses within the Bachelor of Nursing Programme. Both courses are a level 7 course and attracts 15 credits. **A grant towards the cost is available for registered nurses from Asthma New Zealand.**

For information contact: Ann/Swarna
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The closing date for enrolment is
8th February 2016 for Asthma Nursing Course
20th April 2016 for COPD Nursing Course

Upcoming events and courses

ASTHMA NEAT COURSE

16 March 2016
15 June 2016
21 September

HALF DAY COPD COURSE

20 April 2016
19 July 2016
19 October 2016

WORLD ASTHMA DAY



3rd May 2015

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



MESSAGE TO READERS

Welcome to the silly season.

There has been some positive outcomes this year as it seems the Government has acknowledged that damp, leaky homes have a great impact on the health of those with respiratory illness. A million dollars is being spent insulating 46,000 damp homes with the belief that it will save the health service \$850 a year for each home.

Cold and damp houses cause respiratory problems and eventually can lead to COPD (chronic obstructive pulmonary disease). As this is the third leading cause of death in New Zealand, and affects around 15 per cent of New Zealanders over the age of 45, it is time that attention was paid to the issue of respiratory health.

Asthma New Zealand can help anyone with early symptoms of COPD. A diagnosis can be obtained through spirometry testing which is available at all their Asthma NZ sites throughout New Zealand. Early detection can allow people to better manage their symptoms and therefore greatly improve their quality of life.

Another positive for the year is that we had a very successful open day at the Auckland branch for World COPD day this month with Robert Rakete from The Breeze radio station coming in to do a spirometry test. The result certainly shocked him, which he talks candidly about in our double page feature about COPD.

You can take good care of your respiratory health. Below are some tips.

Don't Smoke

Quitting smoking (or never acquiring the habit in the first place) is the single most effective measure you can take to keep your respiratory system healthy.

If you are not a smoker, be aware of the effects of inhaling second hand smoke. Recent studies concluded that individuals who are regularly exposed to tobacco smoke during their childhood have a heightened risk of 51% of developing asthma in later life.

Eat Well

Eat a diet rich in nutrients necessary for a healthy respiratory system. Eat foods rich in vitamins A, C and E and the minerals zinc, potassium, selenium, magnesium and zinc. Snack on fruits and nuts, and add fresh vegetables and grains to your meals.

Exercise

Exercise regularly, around 30 minutes of physical activity five days a week to promote overall health is recommended but always check with your doctor before beginning exercise, especially if you already have any respiratory or other types of conditions.

Exercise in cleaner conditions, such as side streets or parks away from busy thoroughfares. Walking or jogging on the side of busy streets leads to breathing in harmful fumes. Check air quality reports for your area so that you don't exercise outside on heavily polluted days.

Hydrate

Drink plenty of fluids – at least 8 glasses per day (unless your doctor gives you other guidelines).

Breathing

Breathing control exercises will help your breathing be more efficient and encourage you to use the correct muscles.

Limit Exposure To Common Allergens

Vacuum and damp dust all surfaces regularly. That includes furniture, air-conditioning filters, blinds, shades, curtains, and floors. When it comes to flooring, hardwood is the best choice, as allergens do not become trapped in hard surfaces the way they do in carpets.

Ensure that your carpet is regularly cleaned with carpet powders or similar chemical solutions as vacuuming alone is not sufficient.

Invest in good-quality allergenic dust covers for your pillowcases and mattresses. Ideally, bedding should be made of synthetic fabrics, and should be washed weekly in very hot water.

Ideally, your home should be kept between 18 and 20 degrees. Although mould spores are present all year-round, they particularly thrive in warm and moist environments.

Rooms should be well ventilated at all times.

Hygiene

Wash your hands frequently, get vaccinated against the flu and practice good oral hygiene to prevent infections that can travel from the mouth to the rest of the body, notably your lungs.

Supplements

Talk to your doctor about using supplements that might promote lung health.

Take your medicine as prescribed

Understand how your medicines work, and then take them as prescribed.

Have a safe and healthy holiday season everyone.

Linda Thompson

Executive Director
Asthma New Zealand

BREATH IS LIFE!

By Vicki Lyford RN
Asthma Nurse Educator

From the moment we are born until we die, we either unconsciously or consciously breathe. But how do we do this? Do we tell ourselves 'take a breath?' How do we breathe?

Most of us do not give this wonderful body function any thought. It is just 'something that happens'. But let's face it; we would not be alive without it!

So how and why do we breathe? What controls our breathing?

The main function of respiration is to facilitate gas exchange in our body. To get oxygen from the air to our body cells and eliminate carbon dioxide (a waste product from cells) from our body.¹ The exchange of gases only occurs in the alveoli of our lungs and we have over 300 million alveoli in our body which provide a surface area of about 70 square meters.^{2,3}

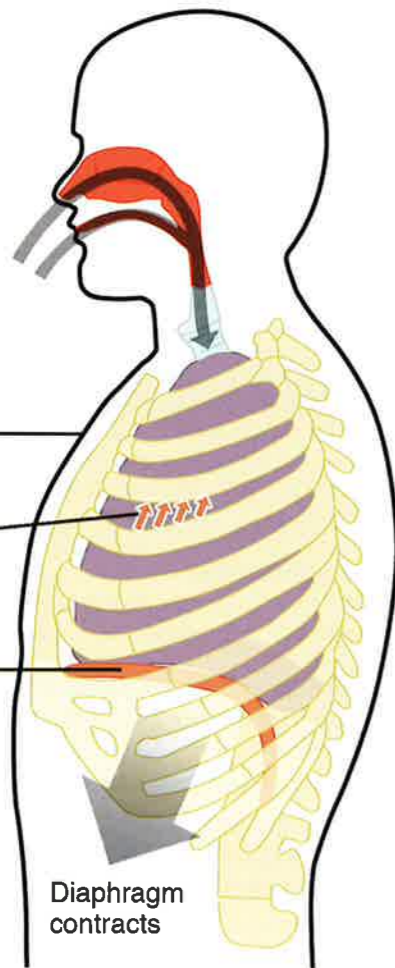
Respiration is the process of gas exchange between the atmosphere and the body cells and involves several events including breathing. Breathing consists of inspiration – an active process, and expiration – a passive process.⁴

Eupnoea is the medical term for relaxed normal breathing.¹ We breathe either in our chest cavity (thoracic) or abdominal cavity (diaphragmatic). Chest breathing is usually shallow, normal breathing is a combination of the two. Diaphragmatic breathing helps to bring air into the lowest parts of our lungs thereby increasing the oxygenation of our body.⁵

So how do we physically breathe?

Simply put, our brain stimulates our diaphragm – a large domed shaped muscle, together with our intercostal muscles, to contract causing lower pressure in our lungs, and drawing in air from around us. This air contains 21% oxygen and passes through our mouth/nose. Our nose contains hairs which filter out harmful particles; it also has turbinates which filter, heat and humidify the air as it passes through.⁶ The air then travels from the naso/oro/laryngo-pharynx into the trachea. This then divides into the left and right bronchi at the beginning of each

Inspiration



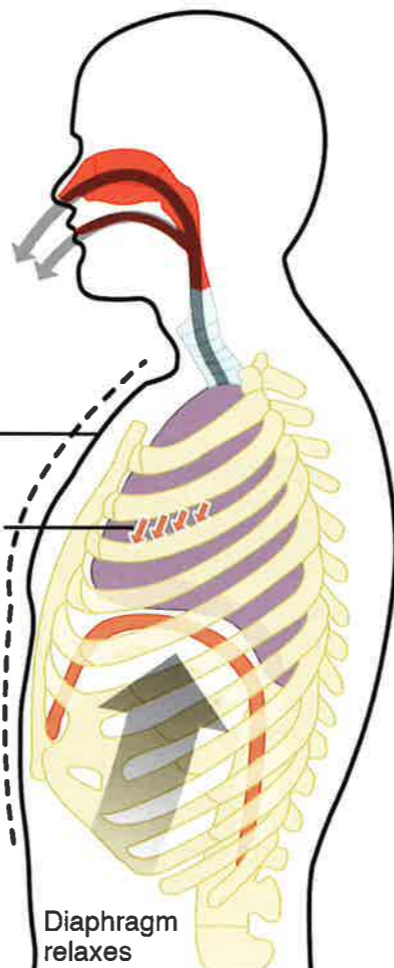
Thoracic cavity expands

External intercostal muscles contract

Diaphragm contracts

Diaphragm contracts

Expiration

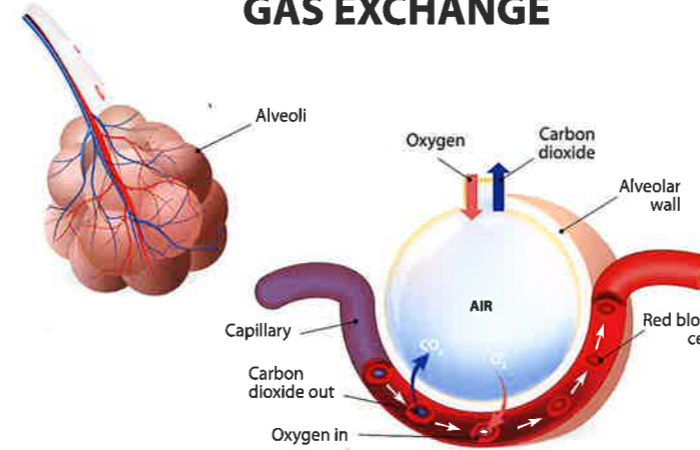


Thoracic cavity reduces

External intercostal muscles relax

Diaphragm relaxes

ALVEOLUS GAS EXCHANGE

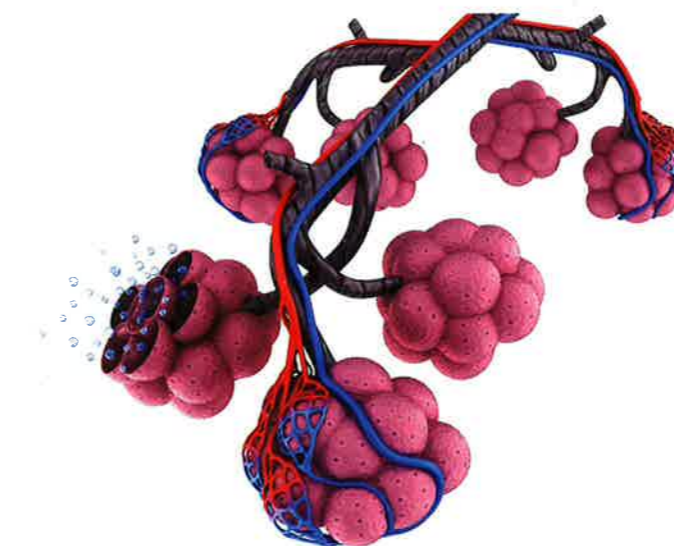


lung. These are filled with cilia, or tiny hairs, which move in an upwards, sweeping motion to drive debris-laden mucous up to the pharynx to be swallowed or coughed up.^{1,2} From there, the air passes down the bronchial tree which divides many times, getting smaller and smaller. At the end of these bronchioles are small grape-like air sacs called alveoli and it is in these, that oxygen is transferred over to the blood capillary system by passive diffusion.⁶ The oxygenated blood is then transported from our lungs to our heart via the pulmonary vein where it is then circulated around our body to the cells of our organs and tissues.³ Carbon dioxide passes from our blood to our alveoli at the same time and is then exhaled from our body to the surrounding air.²

Exhalation is a passive process where the diaphragm and intercostal muscles relax, increasing the thoracic pressure and pushing the air out of our lungs into the atmosphere.³

So what controls our breathing?

The respiratory centre of our brain sends impulses via neurons to the intercostal muscles to contract and the diaphragm to descend. The quicker the impulse, the faster our breathing becomes.¹ The medulla oblongata houses the ventral and dorsal respiratory groups involved in inspiration



and expiration, whereas the pons houses the pneumotaxic and apneustic centres, which co-ordinate the speed of our breathing.⁶

Higher centres of the brain influence respiration rate, however, the main regulator are the peripheral chemoreceptors found in the carotid and aortic bodies. They detect chemical changes in the blood: ↓ oxygen (O₂), ↓ blood pH, ↑ hydrogen (H⁺), ↑ carbon dioxide (CO₂). They trigger chemoreceptors to stimulate the respiratory centre which leads to an increase in the respiratory rate to neutralise the problem.^{1,4} Chemoreceptors in the medulla detect changes in pH - ↓ pH (↑H⁺), ↑CO₂ – this stimulates the respiratory centres leading to an increase in respiration rate and an increase in the amount of oxygen inhaled.

We have receptors in our muscles and joints that are stimulated when we exercise therefore stimulating the respiratory centre to increase our respiration rate and get more oxygen.¹ We also have irritant receptors which protect the lungs. They 'blow off' the irritant, therefore, when they are stimulated they suppress the respiration rate and slow it down. Stretch receptors cause Hering-Breuer reflex which is initiated by extreme over inflation of the lungs and suppress respiration.¹ This suppresses further inspiration and stops the lungs over-stretching.

When we exercise, the CO₂ levels in our blood is increased because of cellular respiration; this in turn stimulates the carotid and aortic bodies and the respiration center to increase our breathing rate.¹ When we rest, our CO₂ level is lower thus our respiration rate is lower. Our body, therefore, regulates the oxygen delivery to our muscles and other organs when it is required. We must also note that it is the build up of the carbon dioxide that makes our blood acidic leading to our need to take a breath as opposed to any lack of oxygen.¹

Summary

Generally, breathing is an unconscious event, however, we can consciously control it for meditation, exercise, swimming, even singing. Our speech is dependent on our conscious breath control. The more relaxed our breathing is, the less the body perceives stress thus perpetuating the slow respiration rate. There are many more complicated functions that are involved in breathing this is just a general overview.

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DEAR NURSE



Dear Nurse, I have heard that there's a spacer where you don't have to leave the bubbles in when you wash it? I've always been told to wash them in liquid detergent, not to rinse, and to leave the bubbles to dry on the inside. Have you heard about this?

Dear reader, yes, these are the new anti-static spacers that have recently become available. They are made of a different type of plastic that doesn't attract static electricity and so the medication doesn't stick on the inside. That's the reason why you have to do that with the old type of spacers. We sell the new anti-static spacers at our shop at Asthma New Zealand. La Grande costs \$15 and is suitable for anyone over the age of 6 years, and La Petite costs \$10 and is suitable for all age groups.

Dear Nurse, I have asthma and I am also lactose intolerant and recently my friend told me that there is lactose in asthma inhalers. Is this correct?

Dear reader, yes, it is true that some asthma inhalers contain lactose.

There are some dry powder inhalers (DPIs) that contain lactose, whereas none of the metered-dose inhalers (MDI) have it.

There have been a few reported cases of allergic reactions to dry powder inhalers in people with severe milk allergy. It's possible that a trace amount of milk protein might pose more of a risk when it is inhaled directly into the airways compared to when it is eaten and altered by ingestion.

If you are concerned please talk to your doctor.

Dear Nurse, my friend said that if I leave my Ventolin in a hot car it could explode, is this true?

Dear reader, all puffers may explode if they are exposed to heat over 120 degrees Fahrenheit or 49 degrees Celsius. They are best stored at room temperature in the upright position, so the tip of the canister is facing down. Temperature extremes are thought to change the vapour pressure of the propellant and can lead to changes in actuated particle size, flight and deposition.

Dear Nurse, I have heard that there are some new inhalers available for people with COPD. Is this correct?

Dear reader, yes that is correct. There is a new inhaler called Onbrez Breezhaler which is a long acting beta2 agonist (LABA) that is taken daily, and there

is another inhaler called Seebri Breezhaler which is a long acting muscarinic (LAMA) also taken once a day. Both of these inhalers are long-acting relievers.

These inhalers are for people with COPD only. Onbrez Breezhaler is fully funded-no special authority required.

Seebri Breezhaler is fully funded on the same special authority criteria as Spiriva.

Dear Nurse, my 8 year old daughter has been diagnosed with asthma. A friend has told me that swimming in an indoor swimming pool is a good exercise for her to participate in. I'm worried that the cold water and the fumes in the swimming pool will make it worse.

Dear reader, parents can worry that their children's asthma may get in the way of swimming, but this form of exercise can make their breathing a little more comfortable.

There's no reason why almost everyone with asthma shouldn't go swimming and there is no evidence that recreational swimming can make your child's asthma worse.

In fact, the warm, humid atmosphere in swimming pools makes some asthmatics' breathing more comfortable. Just remember to always take an inhaler such as salbutamol (Ventolin) with you.

However, if there is a strong smell of chlorine at your pool – this can irritate your child's airways.

- A poor pH balance or the use of too much chlorine may bring on symptoms. The hygiene habits of other bathers and the standard of the water treatment plant, operation and maintenance may also be factors.
- Bather hygiene also plays a part so ensure your children's bodies are clean before going into the water. Also, remind them that it is a swimming pool and not a toilet, so if nature calls ensure they know what to do.
- If your child has an asthma attack in the pool, get them out and give them their reliever inhaler immediately. If the situation fails to improve quickly make the lifeguard or nearest member of staff aware and ask them to help.

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.

NZ's Home Comfort Specialist

The Home Comfort Specialist

FUJITSU HEAT PUMPS



DOES MILK INCREASE MUCOUS AND MAKE ASTHMA WORSE?

By Karen Little RN
Asthma Nurse Educator

Mucous is produced by cells within the nose, sinuses and lungs. It is made of water, salt and various proteins that help trap germs and particles of dirt. Antibodies in mucous also help to kill germs and protect us from infection. Airway luminal obstruction by an exudate composed of mucous and cells is a major contributing cause of fatal asthma in most patients.¹

Many parents believe that milk will worsen their children's asthma owing to increased mucous secretion. Therefore, they limit the consumption of milk in their child's diet, and this is not advisable. Parents need to recognise the importance of milk as part of a healthy diet in supporting growth and calcium consumption. Traditional Chinese medicine also suggests that milk is a mucous forming food and recommends that it should be avoided.² The notion that children with asthma should avoid milk was also strengthened in Spock's famous book, *Dr Spock's Baby and Child Care*, as he suggested that asthma and other respiratory problems can be aggravated by milk, and recommends removing milk altogether from the diet.³

Foods are not common triggers of asthma. "There is no medical foundation for the widely held view that dairy products increase mucous secretions".⁴ Recommended best practice, as based on clinical experience and expert opinion by the National Asthma Council advise that consumption of dairy products does not need to be removed from a diet, as there is no correlation between an increase in asthma and milk. Patients should also be sceptical of any advice that claims a change in diet can cure asthma or eliminate the need for medications.

This belief is still upheld today, among many parents and health professionals, despite very little scientific evidence linking milk consumption and asthma. However, there are a few documented cases in which people with a cow's milk allergy presented with asthma like symptoms.⁵ Around 2% of babies are allergic to cow's milk. The symptoms can include asthma, hives and vomiting.⁶ It is, however, important that parents obtain a correct diagnosis using skin prick testing or blood tests to show the presence of allergy (IgE) antibodies to milk. In the other cow milk related diseases, for example, food protein-induced enterocolitis (FPIES), lactose intolerance and milk intolerance, the symptoms are usually gastrointestinal, such as diarrhoea and vomiting which will not aggravate asthma. Drinking cold milk may cause a cough in patients with asthma, but this is likely to be due to the temperature of the milk, and if the milk is warmed, this symptom may not occur.

A study in Australia divided a group of 169 participants into 70 people who believed that milk consumption increased mucous and 99 who did not. They were then asked to describe what happened when they drank milk.



Most believers (84%) said they experienced throat clearing compared with only 20% of nonbelievers.⁷

A further study by Pinnock and Arney⁸ in a randomised, double blind trial of 125 subjects who received milk or soy-based placebo concluded there was no difference in sensory responses between the soy-based placebo and milk. The site predominantly affected was the throat, with sensations related to difficulty in swallowing and perceived thickness of mucous and salivary secretions, rather than excessive mucous production. The effect required only a small amount of milk and was reported to be of short duration. This study also identified that approximately 30% of the population believed that milk consumption stimulates mucous production and is accordingly associated with a 38% reduction in their liquid milk intake. This was identified as the 'Milk Mucous Belief'.⁸

The possibility that milk consumption increases the viscosity of mucous could be explained by the fact that when saliva mixes with an emulsion such as milk it can lead to droplet flocculation (agglomeration). This aggregation affects the mouth feel and other sensory aspects and the sensation may be mistaken for mucous.⁹

The PIAMA birth cohort study examined data from 2,978 children.¹⁰ Food frequency data was collected at the age of 2 years and related to asthma symptoms at the age of 3

years. Daily consumption of full cream milk, milk products (yoghurt and chocolate milk), butter, and brown bread were significantly associated with low rates of asthma and/or wheeze. These estimates were of the same order of magnitude as the effects of the established risk factors parental allergy and being a boy. To avoid finding associations due to reverse causation, 64 children with cow's milk allergy were excluded from the analyses.

During growth spurts in children and adolescents when new bone formation occurs it is essential that adequate dietary calcium is ingested. Many asthmatics are prescribed preventer medication, which contains an anti-inflammatory corticosteroid medicine. At high doses, this is associated with the development of osteopenia and osteoporosis. It is therefore extremely important that asthmatics of all ages have an adequate calcium intake. There are many studies that have shown no direct correlation between consumption of dairy products and an increase in mucous production that may affect asthma.

Asthma New Zealand Online Shop

You can now buy your Asthma related products from the comfort of your own home – either online or by phone. Simply choose the products you want delivered to your door.

www.asthma-nz-shop.org.nz

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PULMONARY HYPERTENSION – WHAT IS IT?

By Ann Wheat RN BN
Asthma Nurse Educator

What is pulmonary hypertension?

Pulmonary hypertension (PH) is a rare lung condition that affects all ages, races and ethnic backgrounds.¹ In children, PH can range from a transient neonatal condition to a progressive disease which can be fatal and can cause considerable health issues.² In young adults, the condition is much more common, and in adults it is twice as common in females than in males.¹

PH is caused by the arteries that carry deoxygenated blood from the right side of the heart to the lungs becoming narrower. The narrowness causes difficulty for the blood to flow through the arteries.¹ In PH, the narrowness causes an increase in the pressure in the blood vessels.³ In normal lungs, the pressure is about a quarter of the pressure of the arteries in the rest of the body.⁴ The normal mean pressure is about 14mmHg but in PH the pressure at rest is above 25mmHg, and above 30mmHg with exercise.⁵ This increased pressure, in turn, causes the heart to have to work harder to pump the blood to the lungs and eventually this can cause the right side of the heart to become enlarged and weaker, thus causing more difficulty in pumping blood to the lungs.^{1,3}

What are the symptoms of pulmonary hypertension?

According to the Mayo Clinic in the early stages of the condition, signs and symptoms may not be very noticeable for months or even years.⁶ At this stage the symptoms include:

- Shortness of breath during exertion or normal daily activities
- Fatigue (feeling tired all the time)
- Dizziness, especially when climbing stairs or on standing up
- Fluid build-up in the limbs
- In babies, first signs may be difficulty feeding, breathlessness, cyanosis (going blue) and failure to gain weight.⁷

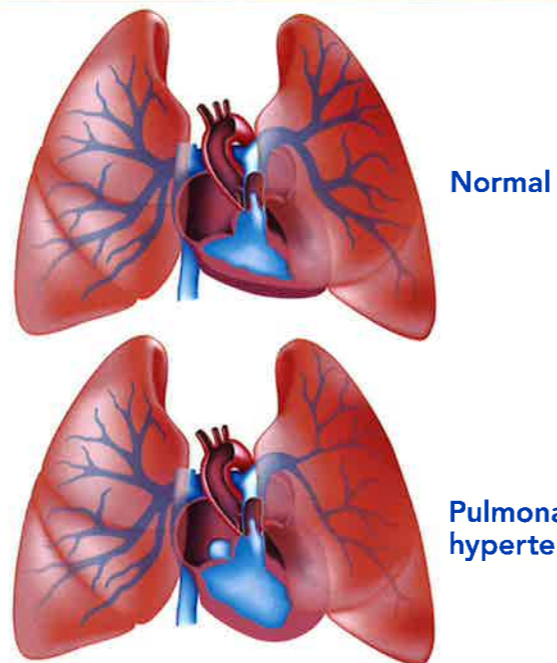
As the condition becomes worse, these become much more noticeable and further symptoms of chest pain and racing pulse or heart palpitations can occur.^{6,7}

What causes pulmonary hypertension?

PH can either be idiopathic, where there is no known cause found in the lungs, or it can be secondary and caused by another medical condition, which is more common than idiopathic PH.⁶

There are several causes of secondary PH and some of the most common are:

- Congenital heart defects and valve disease
- Connective tissue disorders for example scleroderma or systemic lupus erythematosus
- Lung conditions such as emphysema, chronic bronchitis, tumours and pulmonary fibrosis
- Liver disease
- Blood clots
- HIV infection



- Genetics – can be inherited in a small number of cases
- Low-oxygen conditions such as high altitude living, obesity and sleep apnoea.^{1,4,6}

Another cause is Eisenmenger Syndrome. This is due to a large hole in the heart between the two ventricles which causes a mixing of both oxygenated and de-oxygenated blood and this then goes back to the lungs causing pressure on the pulmonary arteries.⁶

How is pulmonary hypertension diagnosed?

PH can be quite hard to diagnose early even on a routine physical examination as the signs and symptoms are similar to other lung and heart conditions. It is though very important to do the following:

- Complete medical history, physical examination. During the physical examination, the physician or GP will listen to the heart sounds, examine the jugular view for enlargement, examine abdomen, legs and ankles for fluid retention, examine nail beds or lips for cyanosis (blue tint) and look for any other possible signs of underlying disease that could be causing the condition.¹
- Complete full blood test including tests for HIV, blood gases, erythrocyte sedimentation rate, anti-nuclear antibodies, liver function tests
- Chest x-ray may show heart enlargement or abnormal lung vessels
- Echocardiogram and ECG looking at the heart function
- Lung function tests looking for lung conditions
- CAT scan of the chest looking for abnormal lung, vessels, blood clots and lung disease
- Heart catheterization which is often the best way to diagnose PH as it can measure the pressure in the pulmonary arteries and right side of the heart.^{1,6}

How is pulmonary hypertension treated?

Treatment for PH is individualized for the patient depending on the different underlying causes and these are treated

alongside PH. There are several types of medications that are used to treat PH and they include:

- Blood vessel dilators which open narrowed vessels. These can be given either by inhalation or intravenous
- Endothelin receptor antagonists reverse the effect of endothelin which is a substance in the walls of the blood vessels that causes them to narrow
- Another drug that can be used to treat PH is Sildenafil or Viagra. This opens up the blood vessels in the lungs allowing blood to flow through them more easily.
- Calcium channel blockers work by relaxing the muscles in the blood vessel walls
- Anticoagulants or blood thinners. These work by decreased blood clot formation and so allows blood to flow through the vessels more easily
- Diuretics work by removing extra fluid from the tissues and bloodstream thus reducing swelling and making breathing easier
- Oxygen helps by reducing the low oxygen in the blood and can be given both continuously or intermittently, especially at night.^{1,6}

In some people, various types of surgery is an option. Pulmonary endarterectomy or removal of blood clots in the pulmonary artery, lung transplantation used in people who do not respond to medical treatment and have advanced PH, heart/lung transplantation is a very rare option, and atrial septostomy where an opening is made into the atria of the heart which helps relieve the pressure on the right side of the heart.^{1,6}

What can a person with pulmonary hypertension do to help themselves?

The following are ways to stay in control of the condition:

- It is very important to be proactive and learn as much about PH as possible. This includes talking with the healthcare professional, reading as much as possible and even looking on the internet to discover about the condition. Develop a plan with the healthcare professional so that the person knows when to seek help.
- Eating healthily is essential. Plenty of fruit, vegetables and whole grains are an important part of the diet. Avoid becoming dehydrated and try not to be in very high temperatures.
- Exercise is another very important factor in the well-being of a person with PH. This should not be excessive exercise, and if symptoms of chest pain or increasing breathlessness occur it is important to stop exercising. Walking is a good exercise.
- Do not smoke and if a person does smoke then they need to stop.
- Obtain plenty of rest. PH causes increased tiredness so a good night's sleep is essential as well as naps during the day if needed.
- Learn about the medications that a person is on including what they do, side effects and any interactions they may have. It is essential to take medications as prescribed.^{4,6,8}

In conclusion, PH is a rare lung condition that affects all ages

from the very young to the elderly. It can be treated but usually not cured.

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ASTHMA CONTROL – DEPENDS ON PREVENTER ADHERENCE

By Alice Paul RN
Asthma Nurse Educator

Working as an asthma educator in the Wellington community over this wet and dreary winter has been both frustrating and satisfying at the same time.

The most common theme is the non-adherence to preventer medication which gives rise to more GP visits, Emergency Department (ED) presentations, hospital admissions and school absenteeism.

One of the situations that we often find following ED and hospital discharge is where the child's prescription has not been picked up because the parents did not realise there was a prescription in the bundle of papers they have been given before leaving the hospital. Frequently, after searching in the car glove box, the handbags, drawers and bedroom the parent may find the missing documents and feel justifiably embarrassed and frustrated. I hasten to add that I empathise with the parent as the circumstances under which they receive these papers are acutely stressful and anxious times. As well as being overwhelmed with the fact that their child has been hospitalized with serious breathing difficulties, the parent may not speak or understand English.

The other scenario which is very common is where the child has made a good recovery and the parent/carer decided that they should stop giving the preventer as the idea of giving medication when the child is well does not make sense to the parent. Also, they may have concerns about adverse side effects as well as a failure to understand the need for taking the medication and lack of awareness about how it works. The complexity of giving two inhalers – reliever and preventer, can be confusing, and the cost can sometimes be prohibitive too.

And yet another situation is where the inhaler is being given but the technique with spacer has never been checked hence the child may not be getting the optimum amount of inhaled corticosteroids.

New Zealand is no different than other countries throughout the developed world when it comes to non-adherence to prescribed medication. A World Health Organization (WHO) report suggests that "50% of patients from developed countries with chronic diseases do not use their medications as recommended. In asthma, adherence rates are particularly problematic, generally ranging from 30 to 70% with 50% of children adhering to their prescribed medication regimes."¹ The report goes on to say how concerning this is, given the vulnerability of these patients to progressive, irreversible airways obstruction.

It also states that 'poor adherence to long-term therapies severely compromises the effectiveness of treatment making this a critical issue in population health both from the perspective of quality of life and of health economics. Interventions aimed at improving adherence would provide a significant positive return on investment through primary prevention (of risk factors) and secondary prevention of adverse health outcomes.'²

We also know that there is inconsistency in reporting

adherence. An article on 'Self-management and other behavioural aspects of asthma' states that:

'In a study comparing self-reported use of inhaled medications recorded in a diary to actual use determined by an electronic monitor of inhaler activation, it was found that subjects were not as compliant as they reported to be in their diaries'³

Our role as asthma educators is to explore the barriers as mentioned above which are leading to the non-adherence, and to educate in a way that the parent/client understands the importance of taking the medication to avoid further asthma exacerbations or more serious problems. We must keep our non-judgemental hat on and show an understanding about the difficulties that go along with long term medication for the chronic condition of asthma. Indeed, one of the 'take-home' messages of the WHO is that patients need to be supported, not blamed.¹

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LUNG FOUNDATION NEW ZEALAND



TUAPAPA PŪKAHUKAHU
LUNG FOUNDATION
New Zealand

November, as Lung Health Awareness month, saw the launch of the new Lung Foundation New Zealand whose mission is to ensure lung health is a priority for all New Zealanders. The Lung Health seminar held at Rydges Hotel in Wellington on 11 November was opened by Simon O'Connor, Chair of the Health Select Committee.

The Lung Foundation plans to engage and work alongside health consumer groups, government and non-government organisations to promote and advocate for healthy lungs, including the prevention of lung disease rather than competing against or duplicating services. Whilst the Lung Foundation will be collaborating with various agencies, a particular focus will be on increasing the awareness of lung cancer and addressing the stigma that is associated with the disease.



Belinda Burnett, Cystic Fibrosis; Ann Wheat, Asthma Auckland; Simon O'Connor, Chair of the Health Select Committee; Linda Thompson, Executive Director Asthma NZ; Philip Hope, CE Lung Foundation of NZ.

There were many interesting presentations at the seminar including one from John Ashton, a lung cancer survivor. John has been appointed Lung Cancer Patient Ambassador for the Lung Foundation. Key note speaker Dr Lucy Morgan, lung physician from Australia, gave an excellent talk on lung health with a focus on pneumonia. Other speakers included Dr Api Talemaioiga and Dr Nina Scott who spoke about some of the issues and challenges in tackling lung disease; Dr Mark McKeage discussed current lung health research; Dr Prudence Stone from Smokefree Coalition; Wellington pharmacist Ann Privett spoke about the emerging role of the pharmacist; Cystic Fibrosis NZ, the NZ LAM (Lymphangiomyomatosis) Trust and, of course, Asthma NZ gave information on their respective roles and available services.



Delegates and key note speakers at the Lung Foundation New Zealand Lung Health Seminar.

The Lung Foundation has commenced with a particular focus on:

- Advocacy – lung health a national priority. Focusing on early detection of lung disease and addressing inequalities.
- Education – how to keep your lungs healthy and understanding the symptoms of lung disease.
- Awareness – observe lung health month, November, in conjunction with lung health campaigns.
- Information – publish information about all aspects of lung health and all lung diseases.
- Research – promote quality research into lung health, including prevention, detection and treatment of lung disorders.

We look forward to collaborating more with the Lung Foundation and other organisations in the fight against lung disease in New Zealand.

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BATTLING AN UNKNOWN KILLER

One of the leading causes of death in New Zealand is something many New Zealanders have never heard of. COPD (chronic obstructive pulmonary disease), affects around 15 per cent of New Zealanders over the age of 45.

Untreated asthma can be one of the causes of COPD which is why Asthma NZ wants to educate New Zealanders about what COPD is and show how they can help people with this disease.

COPD occurs when the airways in your lungs become inflamed due to excess mucous build-up. As a result the airways become blocked and oxygen intake is depleted.

Linda Thompson, Chief Executive of Asthma New Zealand says that COPD can be caused by smoking, air pollution, or asthma that has been poorly managed in the long-term.

"COPD often goes undiagnosed until people are older as the symptoms of the disease only usually appear later in life, she said. "The symptoms are often seen as common ailments and people don't make the connection with COPD until they visit their doctor. This is a disease that creeps up on people as they get a bit older and they suddenly find that the minor symptoms they have had for years are starting to really affect them."

Chronic obstructive pulmonary disease used to be known as emphysema and most people would associate it with older people who have smoked all their lives – coughing, wheezing, phlegm and shortness of breath.

COPD is treatable but incurable. However, exercise and the correct medication can have a positive effect on the quality of life of people who have the disease.

To give readers an insight in COPD and asthma here are four interviews with people living with respiratory health illness.

HineAo Cassidy

HineAo Cassidy is an asthmatic who was inspired to quit smoking as her mum who was also asthmatic was diagnosed with Lung Cancer in August 2012 and passed away in November 2014.

HineAo gets seasonal asthma and believes second-hand smoking triggered asthmatic symptoms for her brother and herself during their childhood upbringing.



How do you feel now you have quit?

I feel better now. I value everything about my life and the people who are in it, especially their health. The hardest part of quitting smoking was the withdrawals from smoking which initially caused anger/frustration but this was soon no longer the case as I found better habits to replace smoking.

Do you have any advice for people who want to quit smoking?

Make sure you have the right support around you; this is not necessarily your own friends or family but could be a community service or health organisation.

Do you feel there is support for people with respiratory health problems in New Zealand?

There is ample support for those who seek it and know where to find it. Ask and you shall receive.

How has Asthma New Zealand helped you?

They bring awareness of this illness to the community and people including me are better for it.

Robert Rakete

Robert was born with asthma and has never smoked.



What triggers asthma for you?

Exercise is tough it really takes it out of me, I'd get really sick from exercising. Other triggers are allergies, spring, pollen, dust mites, dust, animals, pretty much everything, animals. I should be living in a plastic bubble.

I have to be aware of when the seasons change, I have to take my antihistamines and my nasal sprays and if I'm around some pets I have to pre load on my antihistamines before I go out. I have special anti allergen sheets. It's constant awareness.

How does asthma affect your daily life?

The test I had done on COPD day was an eye opener as prior to that I said to Linda (Thompson) and the Asthma NZ team that I've got my asthma under control but once I did this spirometry test and realised I had the lungs of an 82 year old I realised I wasn't managing my asthma at all.

The big lesson for me from the test was that I wasn't doing my preventer enough and that may have slanted my test in such a horrible way as I wasn't really doing it right.

I'm going back in about a month to have another test done to see if it makes a difference because the thing I learnt about COPD is once you get it, it's irreversible. Asthma you can reverse. Through medication, exercise and diet you are able to have a better result in terms of what impact asthma has on your life, so hopefully when I go back and have my spirometry test it's going to have a better result.

How do you feel about damp homes in New Zealand, and do you feel it affects people with respiratory diseases?

We live in a damp house but we are lucky enough to afford heat pumps. We've all heard stories in the news about families are put into homes by government agencies which are not fit for those families and I really feel for them. If you just have enough money for your bills where are going to go to buy a dehumidifier as they are expensive to buy and expensive to run.

One of the triggers for me is cold and dampness so I'm particularly aware of that and I'm very lucky that I'm able to have those machines in the house to make it easier for me. In terms of those families that don't have that, it's a concern. We need to look after them because, if you are a child living with asthma, and you are putting yourself in a situation that makes it worse, that impacts on your growth as a person – on your ability to sleep, to study, and everything else. It has a huge impact.

How has Asthma New Zealand helped you?

I thought as I hadn't been to hospital for years I've got my asthma under control but the truth is my lungs are saying something completely different. The reality is my asthma was not and is not under control and manageable so places like Asthma New Zealand are so incredibly important because they open your eyes to it.

Diane Fellowes

Diane Fellowes has COPD. She has never had asthma but was a smoker.



How does it affect your daily life?

Very much. I hate being like this and I get angry and bitter and twisted to be perfectly honest. What I want to do and what I can do are two different things and it takes me all day to do something which should take half an hour. It took me a long time to go out with the oxygen. It was a pride thing, I suppose, and then I thought at least I'm out there living and people are wonderful, they come and help.

How do you feel about damp homes in New Zealand, and do you feel it affects people with respiratory diseases?

Well obviously it does. To me its common sense that it will and something should be done about it.

Has it affected your family that you have COPD?

My six year old grandson likes to hold the oxygen cord and see how long it takes for the alarm in the machine to go off. We've never made a big drama about it. This is me and my other little man. He's one so he doesn't know me as anything different.

When did you go on oxygen?

Three years ago. I have actually got a growth on one of my lungs but it doesn't worry me. We don't know how long it's been there but there is nothing they can do for me so I've just got to get on and live my life as such.

Do you feel there is a strong support network for people in New Zealand, has Asthma NZ helped you?

Oh gosh yes, definitely. Coming here (Asthma NZ) and volunteering here, it's great. Coming to my COPD meetings once a month helps me to know there are people out there same as you. I enjoy coming here. Maybe it's the social aspect, – Tuesday morning I've got to get up, get ready, be with the girls. You wouldn't choose to sit at home feeling sorry for yourself.

What advice would you give someone with COPD?

Get in touch with groups; don't be proud, take whatever help you can get as that's what the people are out there for.

Di Paton

Di Paton has COPD and has never smoked.



When did you find out you had COPD?

I found out I had COPD after I walked the Queen Charlotte Track – 71k's. I seemed to have much more trouble than my training partner when we were out doing training walks and was always puffing and wheezing. I finally went to the doctor and she was alarmed enough by my low peak flow to send me to a specialist. However, I found out a lot more about the disease when I came to Asthma Auckland and had some more tests. That is when I learned I had the lungs of a 95 year old.

How does COPD affect your daily life?

I seem to cope quite well on a daily basis but, sometimes, even walking up a small hill causes me to puff. So, it is mostly just exertion that causes me to remember I have it.

My daily life is only affected when I try to rush somewhere or carry something heavy. But I am lucky that it is not too bad and I generally ignore it and just carry on.

COPD cannot be combatted but exercise helps and I do have some daily medication which won't stop it but might help to ensure I don't get worse.

What is your advice if you meet someone who just found out that had COPD?

If you find out you have COPD, seek advice as to what you can do and get involved in exercise of some kind.

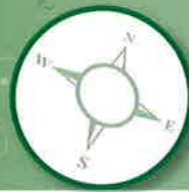
Do you feel there is a strong support network for people in New Zealand, has Asthma New Zealand helped you?

I think there is a lot of support for people with respiratory disease but you do have to go and seek it out. I think that Asthma New Zealand is fantastic with assisting a diagnosis and providing support and information. The assistance of the nurse made a big change in my attitude.

IF YOU HAVE ONE OR SEVERAL OF THE FOLLOWING COPD SYMPTOMS, SEEK MEDICAL ATTENTION IMMEDIATELY:

- Shortness of breath—particularly following physical activity
- Wheezing or noisy laboured breathing
- Tightness in the chest and difficulty catching your breath or talking
- An ongoing stubborn, dry cough
- Mucous build-up, or coughing up yellow, green, or bloody phlegm
- Changes in skin, lip or nail colour (i.e., blue or grey) from oxygen depletion
- Loss of appetite
- Headaches, particularly in the morning, due to increased carbon dioxide in the blood
- Disturbed sleep patterns—caused by annoying, stubborn symptoms (i.e., coughing)
- A racing heartbeat due to reduced lung capacity can cause your heartbeat to become irregular and rapid
- Loss of mental alertness or slurred speech

NORTH & SOUTH



PAPAKURA WHANAU FUN DAY 12TH SEPTEMBER

For the fourth consecutive year, the Papakura Whanau Day celebrated support, wellbeing, development and self-determination of the Papakura community. The four themes that stallholders were divided into included: local activities supporting local goals, healthy homes inside and out, youth empowerment, and fitness makes the world go round. Inside the hall were over 15 stalls, and outside more stalls including free healthy chicken wraps and exciting activities such as bouncy castles, face painting and play dough.



Karen and Janet, (Auckland Asthma Nurse Educators), were invited by the steering group to attend this busy event. Due to ongoing construction at Papakura Marae, the event was held at the Papakura Recreation Centre. 'Choice Not Chance' has remained the main funder for this event. The focus of their funding is to enable communities to make healthy choices that support whanau to be free of gambling-related harm. Fullers Cruises also donated the supreme prize pack and many other organisations donated prizes that were given from the stage throughout the day. Asthma Auckland donated a gorgeous prize of assorted make-up that was won on the day by a talented dancer participating in the Zumba workshop.

Each person who attended was given a 'passport' (questionnaires to engage whanau with providers) and then the passports were put in the draw for the grand prize. The question that needed to be answered from Asthma Auckland was, "What is a spacer used for?" Karen and Janet collectively spoke to over 50 people about asthma and their medications. It was a great day to network with other health and education providers, and to help many people manage their asthma to a better degree.



Congratulations on your successful completion of the Distance Learning Asthma Nursing programme.
Unitec /Asthma New Zealand Asthma Nursing Course 2015 – 1st Semester

Sara Kate Greig _____ Auckland
Racquel Macdonald _____ Hastings
Renate McLeod _____ Auckland
Debra Calkin _____ Marton
Caroline Weterings _____ New Plymouth
Amanda Tunbridge _____ Paraparaumu Beach

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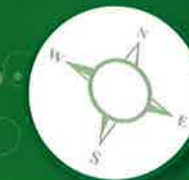
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NORTH & SOUTH



MANUREWA COMMUNITY EXPO

The Manurewa Community Expo was held on Thursday 8th October at the Southmall Shopping Centre, Manurewa. The Expo was hosted by the Manurewa Community Network, Manurewa Business Association, and the Southmall Shopping Centre. The aim of this Expo is to provide a platform for community groups and government agencies to showcase their services and products.

Karen Little and Sandy McBrearty provided asthma education and advice to many children and adults of all ages. We were one of 78 stallholders who set up on the day, providing information to a constant stream of whanau visiting the mall.

The day opened by a whakatau by kaumatua Bobby Clarke at 11am and guest speakers then gave acknowledgement and thanks to the organisers. A light lunch menu was provided to all working on the day by New World and the NZMA hospitality students did a great job of replenishing the delicious food for the hard working stall holders and support staff. The event was closed at 3pm by a karakia.

The Asthma Auckland team find that these community events



provide an excellent opportunity to reach a wide range of people who may not otherwise have access to our services. We must have spoken to over 50 people about gaining control of their asthma and networked with many other organisations working in South Auckland.

We would like to thank the hosts, the Southmall Shopping management, and volunteers from the Manurewa community, for organising such a worthwhile event.

STOPTOBER LAUNCH

Asthma New Zealand were invited to the STOPTOBER 2015 Launch on the 25th September at the Ellerslie Events Centre. This started the countdown for the 31-day stop smoking challenge that commenced on 1st October.

At 9.30am, the many guests were welcomed by karakia and mihi whakatau. Sefita Hao'uli, ASH NZ board member, then introduced and welcomed the Associate Minister of Health Hon: Sam Lotu-Liga, who delivered a moving and



heartfelt speech about smoking in our communities and what this meant for him and his family. HineAo Cassidy then delivered a very passionate personnel testimonial about how she gave up smoking a year ago during last year's STOPTOBER. She also paid tribute to her loved mother who died from lung cancer. A toe tapping, live musical performance followed by Fender Maeva, Birgette McCarthy and Ngakirikiri Kershay.

The message being promoted is that you are five times more likely to stop smoking for good, if you stop for one month. All people who smoke are encouraged to 'Stop smoking for your family, your your wallet. Stop for October.'

In March 2011, the New Zealand Government committed to a goal of New Zealand becoming smokefree by 2025. Strategies and encouragement were given to all attending to reach this important goal.



THE TSANZ CONFERENCE 2015 – QUEENSTOWN

by Janet Delooze & Elaine Murray

Two asthma nurse educators from Auckland, Elaine and Janet, had the privilege of attending the 2015 Thoracic Society of Australia and New Zealand (TSANZ) conference in Queenstown in August. The conference was, yet again, interesting and informative, and a great opportunity to network with others working in the respiratory field. A brief summary follows of some of the highlights.

Health Literacy – Susan Reid

Susan presented a very clear informative session and explained how health literacy, which originated in the US, was often viewed in terms of a 'patient deficit' rather than an inadequacy on the part of the health professional concerned. Health literacy is "the capacity to obtain, process and understand basic health information and services in order to make informed appropriate health decisions". It should be about achieving equity for all, by utilising available, relevant resources where they are needed most as opposed to equal distribution.



The Science of Happiness – Dr Tony Fernando

This session about happiness was an interesting interlude between the respiratory sessions. His discussion on the different types of happiness was excellent, and described three main themes: calm contentment, and excitement and drive, though an important part of life, are short lived. The highest form of happiness - the 'compassion connection circuit' is the only sustainable form of happiness. It's all about being grateful for what we have and feeling compassion and connection with others.

Multi-Dimensional Assessment & Treatment of Obstructive Airways Disease – Prof Peter Gibson

In a comparison of asthma and COPD, Prof Gibson discussed how, in asthma, the mortality rates are decreasing, it is often over-diagnosed and over-treated, in contrast to COPD where the mortality rates are increasing, and the condition is often underdiagnosed and undertreated. The diagnosis and management of obstructive airways disease (OAD) in older people is complicated due to age-related changes, disease related changes, co-morbidities, and a paucity of evidence to guide treatment decisions for older people.

Vocal Cord Dysfunction – Prof Peter Gibson

Vocal cord dysfunction often co-exists with asthma or mimics asthma. The clue to the diagnosis lies in the history – tightness, pain, voice symptoms? These patients are usually non-responsive to beta2 agonists if there is no asthma component. A CT scan of the throat will confirm diagnosis. It is also associated with gastro-oesophageal reflux (GERD).

Sleep health – Judy Jones

Sleep - something we do every night but may not realise how important good sleep is. We should sleep for between 7-9 hours, less or more sleep increases the risk of diabetes, depression and hypertension.

Judy also spoke about Obstructive Sleep Apnoea (OSA) and the increase in risk of cardio-vascular disease, stroke, diabetes, depression and obesity. OSA is 5 times more prevalent in Maori and Pacific Island people.

Disordered breathing (BPD) – Tania Clifton-Smith

Breathing is first and last thing we do in life – but many things can go wrong. The nose is the gate way to the lungs, and with each inhalation, we should breathe right down to the diaphragm, 10-14 times every minute. Babies breathe between 30-50 and a young child 25 per minute.

Inappropriate breathing which is persistent can cause symptoms with no apparent organic cause

Factors that may contribute to BPD include biomechanical factors such as posture, chronic mouth breathing, occupations such as diving and swimming; biochemical factors such as lung diseases, allergies, post nasal drip, drugs, hormonal, exercise; psychological factors such as anxiety, stress, panic, personality trait, suppressed emotions or anger.

She suggested observing the breathing pattern, their handshake (a clammy hand is an indicator of BPD), sitting or standing posture, postural or jaw tension, rounded shoulders, pokey chin. Explanation, education and retraining can improve hyperinflation and correct the breathing pattern. Remember that we can all improve our breathing pattern at any time-correct posture and take note of your breathing.

When in doubt, breathe out!

The Middlemore Asthma Cohort – Dr Jeff Garrett

This was an audit that was carried out 5-6 years ago that looked at patients who presented at clinic with asthma over a 2 year period. Severe asthma was identified as poor symptom control, > 2 courses of OCS, hospital admissions, and persistent airflow limitation. There seems to be a gap in the management of these patients with 82% being under-treated and poorly controlled: the guidelines are not being stepped up to Step 5.

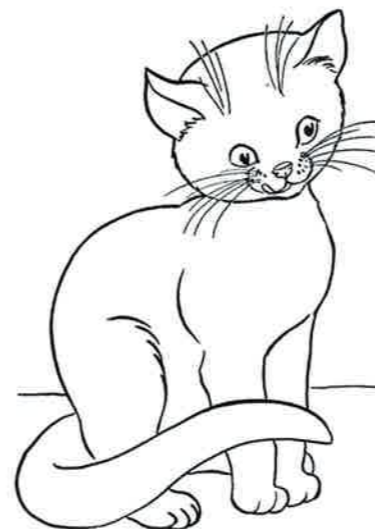
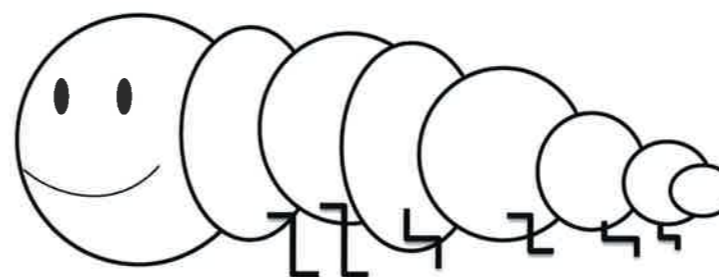
Eosinophil measurement is the "ideal biomarker" in sputum and FeNO. High eosinophilic levels warrant treatment with steroids: low eosinophils suggest that neutrophils are increased and therefore indicate treatment with antibiotics.

Congratulations to our Colouring Competition winners:



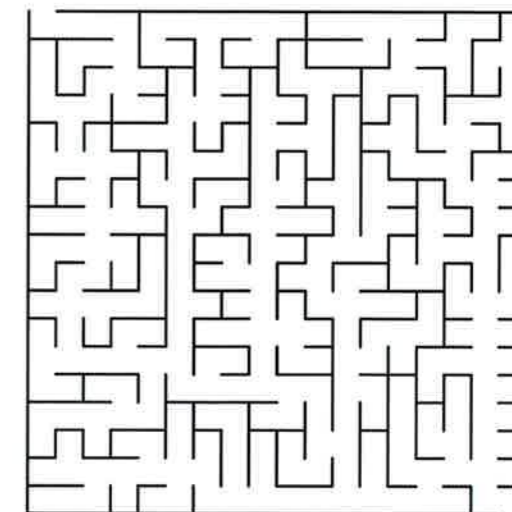
Annabelle age 10
Eve age 10
Meg age 7
Khalen age 7
Charlotte age 6
Makaia age 5

Who am I? Which of these are triggers for asthma? Colour me.



Answers –
Count them and write the total:
First equation = 4
Second equation = 5
Who am I? Which of these are triggers for asthma? Colour me.
Cat and dog

Help me find the inhaler please?



Count them and write the total.



VOCAL CORD DYSFUNCTION

By Janet Delooze RN
Asthma Nurse Educator

Vocal cord dysfunction (VCD) is often misdiagnosed and mistreated as it presents with similar signs and symptoms to asthma. VCD can sometimes co-exist with asthma but can also be found in isolation. A 2013 study found that over 42% of people with VCD were misdiagnosed as asthma over an average of 9 years.¹

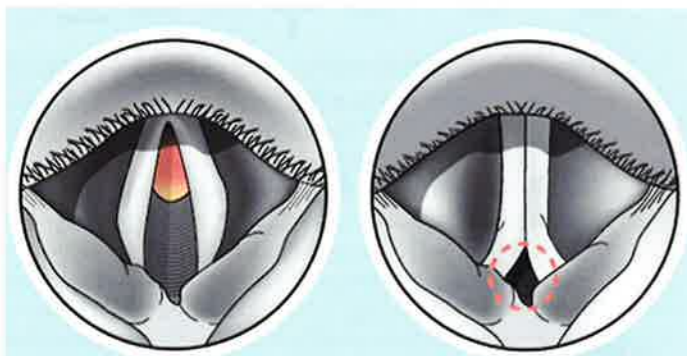
VCD is also known as:

- paradoxical vocal fold motion disorder
- upper airway dysfunction
- laryngeal hyperresponsiveness
- irritable larynx syndrome.¹

VCD was first described in the 19th century and was given the dubious terms of hysteric croup, Munchausen's stridor, pseudo-asthma or factitious asthma.² Symptoms can range from mild breathlessness to acute respiratory distress, with patients complaining of acute-onset difficulty in breathing, tightness in the throat, difficulty swallowing or a sensation of choking.³

Normally, the vocal folds open when you breathe in, and close when you breathe out: in VCD, they close when breathing in, or both breathing in and out. This leaves a small diamond-shaped opening in the folds known as a posterior glottic chink (Figure 1).⁴

Figure 1. Normal Vocal Cords and Vocal Cord Dysfunction.⁴



A Normal vocal cords at mid-inspiration B Vocal cord dysfunction

Cause

The primary cause is unknown but VCD may be secondary to inflammation. It can be triggered by gastro-oesophageal reflux (GERD), rhinitis with post-nasal drip, viral upper respiratory tract infections (URTIs), cold air, chemical or occupational irritants, irritable bowel syndrome (IBS), psychosocial factors and exercise.³ Although psychological causes have not been proven as a cause, it is interesting to note that up to 40% of people with VCD have psychological factors present.²

For some, VCD is only triggered by exercise and so it is often mistaken for exercise-induced bronchospasm (EIB).⁵ VCD tends to be found in athletes who are under high stress for personal performance.²

Differentiation

Although it can be difficult to differentiate, there are several differences between the two conditions. (Table 1).⁶ Taking a careful history of the onset, possible triggers, and response to bronchodilator medications are part of establishing the diagnosis. Other possible conditions presenting with similar symptoms are:

- anatomical or neurological abnormalities
- laryngomalacia (usually occurs in infancy where the soft, immature cartilage of the upper larynx collapses inward during inhalation, causing airway obstruction¹⁰)
- vocal fold polyps, granulomas or tumours
- vocal cord paralysis²

Table 1. Symptoms of VCD and Asthma⁶

	Asthma	VCD
Time of onset	Quick; within minutes	Sudden onset; within seconds
Duration	Minutes to hours	Seconds to a few minutes
Dyspnea during	Expiration	Inspiration
Area of limitation	Thorax, lower airways	Throat, neck
Inhaled drug therapy	Highly effective	Ineffective, aggravating
Induced by	Irritants, allergens, exercise	Irritants, stress, exercise

Diagnosis

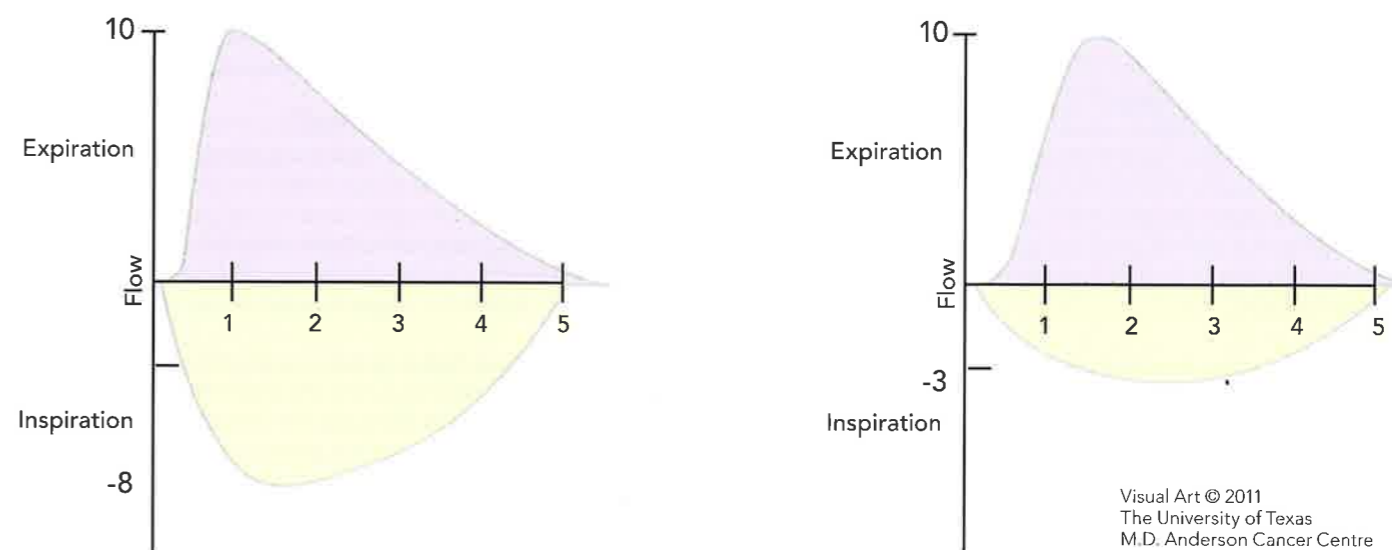
Correct diagnosis saves the need for extensive, unnecessary testing and inappropriate medication. The three main criteria for diagnosis of VCD are:

- clinical symptoms (described earlier)
- flexible laryngoscopy
- lung function tests.³

Flexible laryngoscopy is considered the gold standard to diagnose VCD although the vocal folds can appear normal in between attacks.³ Videography has also been used to differentiate VCD from other conditions, as shown by Davis and colleagues, where the inspiratory stridor is clearly heard immediately following strenuous exercise.⁷

Flow loop curves on spirometry can also highlight the condition: with VCD, the expiratory curve is usually normal if there is no asthma component, however, the inspiratory curve is often flattened (Figure 2).⁸

Figure 2: Flow-volume loops: normal and VCD.⁸



Visual Art © 2011
The University of Texas
M.D. Anderson Cancer Centre

To aid the timely diagnosis of VCD, Traister and colleagues evaluated the Pittsburgh VCD Index which is a scoring system that aims to distinguish asthma from VCD.⁹ The criteria for the 89 study subjects were: consistent clinical history of prolonged symptoms, recurrent or intermittent episodes, reproducible inciting factors; symptoms, and positive findings on laryngoscopy. A score of greater than or equal to 4 was predictive of VCD. They found that the index "may have significant clinical utility in facilitating a timely and accurate diagnosis" but prospective validation studies would need to be performed to confirm this.⁹

Management

Once VCD has been identified, management depends on treating the underlying co-morbidities such as GERD, IBS, psychiatric diagnosis, chronic pain, and speech and behavioural therapy.¹¹ Speech and language specialists can help to identify the triggers for the VCD and coach the patient on techniques that can alleviate or stop an acute attack before it becomes worse.³ Various breathing techniques also help with the relaxation of the vocal cords. If there are psychological predisposing factors, psychologists or psychiatrists can provide supportive counselling, education and management.²

In conclusion, VCD is often misdiagnosed and treated as asthma. Diagnosis can be difficult and patients with refractory asthma should be referred to a respiratory specialist for definitive diagnosis. A multidisciplinary team of specialists can then support the subsequent management of the condition.

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ALLERGIC RHINITIS IN CHILDREN

By Elaine Murray RN
Asthma Nurse Educator

It is estimated that 1 in 5 New Zealanders has an allergy. Whether the symptoms are mild or severe, allergic disorders have a negative impact on quality of life and in some cases are life-threatening. In children, allergic rhinitis can affect sleep, and impair learning, memory and behaviour.¹

As an asthma nurse educator I often visit children with asthma who also have allergic rhinitis (more commonly known as hay fever).

Allergic rhinitis usually presents in early childhood and is caused by an immunoglobulin E-mediated reaction to various allergens in the nasal mucosa. Clinically significant sensitisation to indoor allergens may occur in children younger than 2 years. Sensitisation to outdoor allergens is more common in the 4–6 year age group. The most common allergens are house dust mite, pet dander, cockroaches, mould and pollens.²

Allergic rhinitis is the most common childhood ailment caused by allergies. Symptoms include a runny nose, an itchy nose, sneezing, post nasal drip and nasal congestion (blocked nose). A child with allergies may also have itchy, watery, red eyes and chronic ear problems.³

Other symptoms include snoring, frequent sore throats, constant clearing of the throat, cough and headaches.²

Understanding the function of the nose is important in order to understand allergic rhinitis.

The purpose of the nose is to filter, humidify, and regulate the temperature of inspired air.

This is accomplished on a large surface area spread over 3 turbinates in each nostril. They have layers of mucous and cilia that trap the air particles, allergens and irritants such as smoke before they reach the lungs. The nature of the filtered particles can affect the nose. Some irritants, such as cigarette smoke, can cause short-term rhinitis. Often, allergens cause a cascade of events that can lead to more significant inflammatory reactions.

Allergic reactions require an initial exposure and subsequent sensitisation to allergens.² To be sensitised, the child must be exposed to the allergen or allergens for a period of time, e.g. exposure to house dust mite allergen every night when in bed, or as another example, exposure to cat allergen in the home if the cat is always indoors. There is an immediate reaction causing an itchy nose, a runny nose, sneezing and congestion. Then there is a late-phase, usually occurring much later but results in recruitment of inflammatory cells which in turn release inflammatory mediators which results in the continuation of the cascade.² This allergen-induced nasal inflammation causes priming of the nasal mucosa which becomes hyper-responsive; continued exposure to the allergen leads to the constant symptoms as mentioned before.

Many parents we see tell us their child often coughs at night and has a lot of nasal symptoms in the morning, e.g. blocked

nose or the need to blow their nose a lot.

The predominance of nasal symptoms on waking may suggest the diagnosis of house dust mite allergic rhinitis.⁴

How is allergic rhinitis treated?

There are three main options – avoiding allergens, medication and immunotherapy.

Avoiding allergens is very difficult so a skin prick test should be performed to identify the allergen or allergens involved, so that the correct avoidance measures can be recommended.⁴

House dust mites are found in mattresses, pillows, bedcovers, cuddly blankets and soft toys, carpets and soft furnishing throughout the house. Bedding barrier intervention such as mattress, duvet and pillow mite guard covers have been shown to reduce mite allergen exposure and in turn improve symptoms not only for allergic rhinitis but also asthma.

Washing linen in hot water over 55°C once a week and hot tumble dry helps to kill the dust mites. If you do not have a drier, hang linen outside in the sunshine. Regularly vacuum using a vacuum cleaner that has a HEPA filter. Open windows while vacuuming, and for at least 20 minutes afterwards to get rid of any allergens floating around in the air. Damp-dust leather, vinyl and wooden surfaces 2–3 times a week. If you do not want to wash your child's soft toy or cuddly blanket in hot water, you can put them in a plastic bag in the freezer overnight then put them out in the sunshine to air.

Cat allergen is a salivary protein, which is deposited onto the fur during preening and then when it is dry it becomes airborne and consequently ends up all over the home. It is very respirable.⁴ The best option to avoid cat allergen is to confine the cat to the outside of the house if possible. Do not let the cat into bedrooms or let it sleep on the beds. Remember, the cat allergen is everywhere in the house, so regularly vacuuming and cleaning as mentioned above is very important.

Medications for allergic rhinitis include anti-histamines and topical corticosteroid nasal sprays. These may be highly effective when used either alone or together.⁴ Antihistamines are the first line of defence, as histamine is the main culprit in early reaction, and blocking histamine causes a dramatic relief of symptoms. Corticosteroids affect the underlying allergic process – late phase reaction.⁵ Sodium cromoglycate is an alternative anti-inflammatory treatment but this needs to be used 3–6 times a day.⁴ Decongestants may be used in certain circumstances but should not be used for more than 5 days.

If allergic rhinitis cannot be effectively managed with allergen avoidance measures plus antihistamines and corticosteroid nasal sprays, a referral to an allergy specialist to consider

immunotherapy may be required. There is a small group of patients who, despite regular use of medications, continue to have symptoms that reduce their quality of life.

Allergen exposure often causes both upper and lower airway inflammation, meaning that both the nose and the lungs may be involved. Many experts believe that a patient's airway needs to be evaluated as a total entity, not as individual parts. Studies have shown that most patients with asthma also have allergic rhinitis. Allergic reactions of the upper airway can trigger lower airway symptoms and vice versa.

One study showed that patients with untreated allergic rhinitis and asthma have a 2-fold greater risk of having emergency treatment and almost a 3-fold greater risk of being hospitalised for an exacerbation, respectively. There are also studies that show if you treat allergic rhinitis, asthma will improve, and if you treat asthma the allergic rhinitis will improve.²

Quality of life surveys have revealed that patients with significant allergic rhinitis found symptoms to be just as debilitating as symptoms in patients with severe asthma. Patients with allergic rhinitis felt they were unable to

participate in the activities of normal living similar to those with moderate – severe asthma. The chronic congestion, sneezing, and runny nose along with lack of sleep compromised levels of daily activity.²

If your child has any of the symptoms mentioned, and especially if they have asthma that does not seem to be well controlled, please see your doctor and discuss your concerns.

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HUFFERS PUFFERS AND WHEEZERS

By Lily Riley BN NZRN PGCertHealSc
Asthma Nurse Educator

November was the Lung Health Awareness month, and 18th November was World COPD Day 2015. This coincided last year with the emergence of a new group in the Rotorua community of people affected by this long term condition.

Last August, a group of people in Rotorua with COPD, some of them in the last stage of their condition, were looking for a way to consolidate support for themselves, regarding their condition. Their main purpose is to be together, share what they are going through in a friendly and supportive environment.

A group of different professionals working in the area of respiratory and community support including Kath Escline-Shaw (Rotorua Community Service), Roel Asturias (Respiratory Service, Rotorua Hospital), Noelene Rapana (Korowai Aroha, Rotorua), Veronica Butterworth (Te Arawa Whanau Ora) and Lily Riley (Asthma Rotorua) were approached and decided to support them. The first meeting was held in October 2014. They chose their own name, which is "Huffers, Puffers and Wheezers", and decided how they would structure and run the group. As far as can be determined, this is the first group of its kind with community and professional support.

Due to the fantastic response of the group (15), it was decided to be involved in celebrating the 2014 COPD Awareness Week in Rotorua Hospital. The local media via TV Rotorua

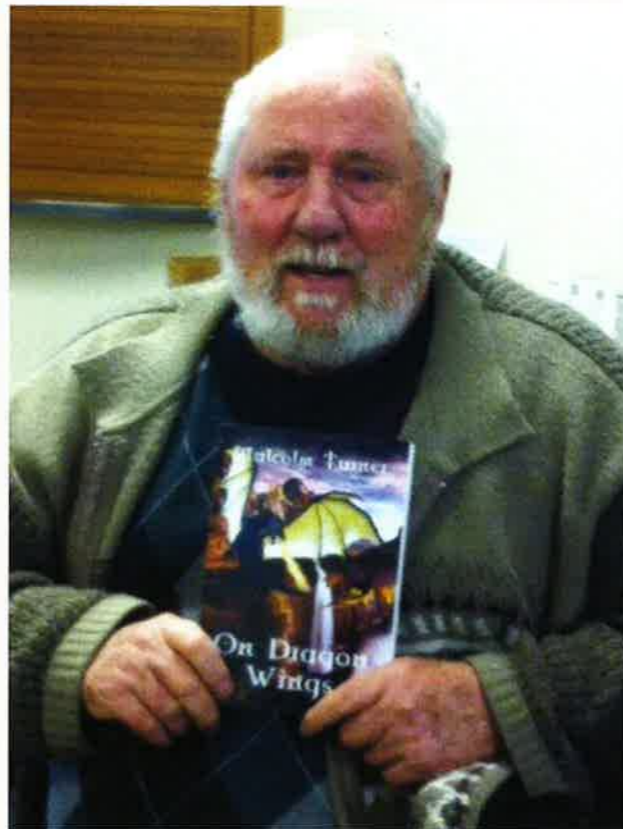
was involved. They interviewed specialist doctors from the respiratory area – Rotorua Hospital LDHB, some of us and the public as well. Te Arawa Whanau Ora website and Newsletter reported the event and will promote this group in the future. As a result meetings were scheduled once a month from March until December 2015.

There is no doubt that this year during Lung Health Awareness Month, especially on Wednesday 18th November when they will be involved once again.

COPD has a huge impact on the health of New Zealand, especially over the age of 45 years old which is 15% of the population.¹ Support for the behaviour changes and the self-education process required to manage COPD is critical and it is great to see Rotorua join the list of other places that have local support groups.

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NORTH SHORE COPD GROUP – 'ON DRAGON WINGS'

The North Shore COPD Group was interested to hear of Mr Malcolm Turner's talent for writing at one of their meetings earlier in the year. Malcolm, who is a regular member of the group, recalled how his vivid imagination started in childhood but it's only in recent years that he has actually put pen to paper, or rather typed his ideas into his computer.

On Dragon Wings is Malcolm's first novel and already he has another book under way. We wish him every success in his writing career.

The North Shore COPD Group meets every second Thursday morning from 10am – 12pm at Sunnynook Community Centre, 148 Sycamore Drive, Sunnynook, North Shore, and welcomes new members. Contact Sandy McBrearty at Asthma Auckland on (09) 630 2293 or email sandym@asthma.org.nz

NEWSTREAM

Source: Lancet Respir Med

Blood eosinophil count and prospective annual asthma disease burden: a UK cohort study; Price D, Rigazio A, Campbell J, Bleecker E, Corrigan C, Thomas M, Wenzel S, Wilson A, Small M, Gopalan G, Ashton V, Burden A, Hillyer E, Kerkhof M, Pavord I; Lancet Respiratory Medicine (Oct 2015)
BACKGROUND: Elevated sputum eosinophil counts predict asthma exacerbations and responsiveness to inhaled corticosteroids but are impractical to measure in primary care. We investigated the relation between blood eosinophil count and prospective annual asthma outcomes for a large UK cohort.

METHODS: This historical cohort study used anonymised medical record data to identify primary care patients with asthma aged 12-80 years with 2 years of continuous records, including 1 year before (baseline) and 1 year after (outcome) their most recent eosinophil count. Negative binomial regression was used to compare outcome exacerbation rates and logistic regression to compare odds of asthma control for patients with blood eosinophil counts of 400 cells per μL or less versus greater than 400 cells per μL , adjusting for age, sex, body-mass index, smoking status, and Charlson comorbidity index. The study is registered at ClinicalTrials.gov, number NCT02140541.

FINDINGS: Overall, 20 929 (16%) of 130 248 patients had blood eosinophil counts greater than 400 cells per μL . During the outcome year, these patients experienced significantly more severe exacerbations (adjusted rate ratio [RR] 1.42, 95% CI 1.36-1.47) and acute respiratory events (RR 1.28, 1.24-1.33) than those with counts of 400 cells per μL or less. They also had significantly lower odds of achieving overall asthma control (OR 0.74, 95% CI 0.72-0.77), defined as limited reliever use and no asthma-related hospital attendance or admission, acute course of oral corticosteroids, or prescription for antibiotics. Exacerbation rates increased progressively with nine ascending categories of blood eosinophil count as compared with a reference category of 200 cells per μL or less.

INTERPRETATION: Patients with asthma and blood eosinophil counts greater than 400 cells per μL experience more severe exacerbations and have poorer asthma control. Furthermore, a count-response relation exists between blood eosinophil counts and asthma-related outcomes. Blood eosinophil counts could add predictive value to Global Initiative for Asthma control-based risk assessment.

Source: Respirology

Association between asthma and body mass index and socioeconomic status: A cross-sectional study on 849 659 adolescents; Gordon B, Hassid A, Bar-Shai A, Derazne E, Tzur D, Hershkovich O, Afek A; Respirology (Sep 2015)

BACKGROUND AND OBJECTIVE: Asthma is associated with body mass index (BMI), but its association with socioeconomic status (SES) is controversial. The combined effect of SES and BMI on asthma prevalence is undetermined.

METHODS Seventeen-year-old pre-recruits to the Israeli Defense Forces underwent routine physical examinations. SES was determined according to established criteria based on place of residence. The study population was divided according to classic weight groups and three SES groups (low, medium and high). Univariable and multivariable logistic regression models were applied to assess odds ratios (OR) of BMI and SES groups for asthma prevalence. The combined effect of BMI and SES was also calculated.
RESULTS: The 849 659 subjects included 480 993 males

(9.5% asthma prevalence) and 368 666 females (6.7% asthma prevalence). Increased BMI were associated with increased OR for asthma in females (1.44, 95% CI 1.36-1.52 for obese vs normal weight). Males had a J-shaped curve (OR 1.24 95% CI 1.2-1.29 for obese, 1.12, 95% CI 1.08-1.16 for underweight, both vs normal weight). OR adjusted to SES did not change significantly. All SES groups produced a linear curve (1.59 95% CI 1.53-1.66 for females and 1.79 95% CI 1.74-1.84 for males). Adjustment of SES to BMI produced no significant change in OR. When all groups were compared with the normal weight/lower SES group, the highest OR was for the obese/higher SES group (2.32 95% CI 2.05-2.64 for females and 1.99 95% CI 1.83-2.13 for males).

CONCLUSIONS: Both BMI and SES are co-independently associated with asthma in adolescent males and females.

Source: Annals of Allergy; Asthma; & Immunology
The impact of anxiety and depression on outpatients with asthma; Ciprandi G, Schiavetti I, Rindone E, Ricciardolo F; Annals of Allergy; Asthma; & Immunology (Sep 2015)

BACKGROUND: Anxiety and depression may frequently affect patients with asthma. However, the findings of several studies are partially conflicting and conducted in selected cohorts.

OBJECTIVE: To investigate the effect of anxiety and depression in a group of outpatients with asthma.
METHODS: This cross-sectional, real-life study included 263 patients (109 males; mean age, 39.2 years) with asthma. Clinical examination, lung function, fractional exhaled nitric oxide measurement, Asthma Control Test (ACT) score, asthma control grade, perception of symptoms by visual analog scale, and Hospital Anxiety and Depression Scale (HADS) questionnaires were evaluated.

RESULTS Globally, 97 patients (36.9%) had anxiety, and 29 (11%) had depression. Of these patients, 71 had combined anxiety and depression. Anxiety and depression were associated with poor asthma control ($P = .007$ and $.02$, respectively). Patients with depression had higher body mass indexes ($P = .002$). Anxiety and depression were associated with lower ACT scores ($P < .001$ for both). The scores on the anxiety and depression subscales of HADS were moderately related ($r = 0.57$).

CONCLUSIONS: The present real-life study indicates that anxiety and depression are common and relevant comorbidities in asthmatic outpatients and are associated with uncontrolled asthma and lower ACT scores. Thus, assessment of comorbid mental disorders should be performed in common practice.

Source: Respir Res

Childhood pneumonia increases risk for chronic obstructive pulmonary disease: the COPDGene study; Hayden L, Hobbs B, Cohen R, Wise R, Checkley W, Crapo J, Hersh C, COPDGene Investigators; Respiratory Research 16 (1), 115

BACKGROUND: Development of adult respiratory disease is influenced by events in childhood. The impact of childhood pneumonia on chronic obstructive pulmonary disease (COPD) is not well defined. We hypothesize that childhood pneumonia is a risk factor for reduced lung function and COPD in adult smokers.

METHODS: COPD cases and control smokers between 45-80 years old from the United States COPDGene Study were included. Childhood pneumonia was defined by self-report of pneumonia at <16 years. Subjects with lung disease other than COPD or asthma were excluded. Smokers with and

without childhood pneumonia were compared on measures of respiratory disease, lung function, and quantitative analysis of chest CT scans.

RESULTS: Of 10,192 adult smokers, 854 (8.4 %) reported pneumonia in childhood. Childhood pneumonia was associated with COPD (OR 1.40; 95 % CI 1.17-1.66), chronic bronchitis, increased COPD exacerbations, and lower lung function: post-bronchodilator FEV1 (69.1 vs. 77.1 % predicted), FVC (82.7 vs. 87.4 % predicted), FEV1/FVC ratio (0.63 vs. 0.67; $p < 0.001$ for all comparisons). Childhood pneumonia was associated with increased airway wall thickness on CT, without significant difference in emphysema. Having both pneumonia and asthma in childhood further increased the risk of developing COPD (OR 1.85; 95 % CI 1.10-3.18).

CONCLUSIONS: Children with pneumonia are at increased risk for future smoking-related lung disease including COPD and decreased lung function. This association is supported by airway changes on chest CT scans. Childhood pneumonia may be an important factor in the early origins of COPD, and the combination of pneumonia and asthma in childhood may pose the greatest risk.

Source: Respir Med

Airflow limitation in COPD is associated with increased left ventricular wall stress in coincident heart failure;

Alter P, van de Sand K, Nell C, Figiel J, Greulich T, Vogelmeier C, Koczulla A; Respiratory Medicine 109 (9), 1131-7 (Sep 2015)

BACKGROUND: COPD and heart failure occur with a considerable coincidence. Beside well-known mechanisms of increased right heart load in COPD, dedicated changes of the left ventricle (LV) are ill-defined and the question remains, whether specific interactions exist beyond common shared risk factors.

METHODS: LV wall stress was calculated based on cardiac magnetic resonance imaging in 28 patients with COPD (GOLD I to III) and coexistent heart failure (LVEF $42 \pm 19\%$) due to non-ischaemic and ischaemic cardiomyopathy. **RESULTS** LV enddiastolic ($p = 0.048$) and endsystolic wall stress ($p = 0.034$) increased from GOLD stage I to III. Reduced FEV1 was correlated with increased enddiastolic ($p = 0.0210$) and endsystolic LV volume ($p = 0.0413$) and with increased enddiastolic ($p = 0.0161$) and endsystolic LV wall stress ($p = 0.0315$), respectively. Increased wall stress was associated with a decreased FEV1/FVC ratio.

CONCLUSIONS: The severity of airflow limitation in COPD was correlated with increased LV wall stress. It is suggested that respiration in pulmonary obstruction is associated with an increased negative intrathoracic pressure when compared with normal lung function, which is transmitted to the heart and increases the transmural pressure gradient and thereby distending forces on the heart. Increased ventricular wall stress is known to be associated with a broad variety of unfavourable consequences, which should be taken into account to contribute to a worse prognosis in COPD.

Source: COPD | Posted 4 weeks ago

Comparison of the COPD Assessment Test (CAT) and the Clinical COPD Questionnaire (CCQ) in a Clinical Population; Sundh J, Ställberg B, Lisspers K, Kämpe M, Janson C, Montgomery S; COPD 1-9 (Sep 2015)

INTRODUCTION: The COPD Assessment Test (CAT) and the Clinical COPD Questionnaire (CCQ) are both clinically

useful health status instruments. The main objective was to compare CAT and CCQ measurement instruments.

METHODS: CAT and CCQ forms were completed by 432 randomly selected primary and secondary care patients with a COPD diagnosis. Correlation and linear regression analyses of CAT and CCQ were performed. Standardised scores were created for the CAT and CCQ scores, and separate multiple linear regression analyses for CAT and CCQ examined associations with sex, age (≤ 60 , 61-70 and >70 years), exacerbations (≥ 1 vs 0 in the previous year), body mass index (BMI), heart disease, anxiety/depression and lung function (subgroup with $n = 246$).

RESULTS: CAT and CCQ correlated well ($r = 0.88$, $p < 0.0001$), as did CAT ≥ 10 and CCQ ≥ 1 ($r = 0.78$, $p < 0.0001$). CCQ 1.0 corresponded to CAT 9.93 and CAT 10 to CCQ 1.29. Both instruments were associated with BMI < 20 (standardised adjusted regression coefficient (95%CI) for CAT 0.56 (0.18 to 0.93) and CCQ 0.56 (0.20 to 0.92)), exacerbations (CAT 0.77 (0.58 to 0.95) and CCQ 0.94 (0.76 to 1.12)), heart disease (CAT 0.38 (0.17 to 0.59) and CCQ 0.23 (0.03 to 0.43)), anxiety/depression (CAT 0.35 (0.15 to 0.56) and CCQ 0.41 (0.21 to 0.60)) and COPD stage (CAT 0.19 (0.05 to 0.34) and CCQ 0.22 (0.07 to 0.36)).

CONCLUSIONS: CAT and CCQ correlate well with each other. Heart disease, anxiety/depression, underweight, exacerbations, and low lung function are associated with worse health status assessed by both instruments.



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