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Respiratory conditions to blame for one in 10 overnight hospitalisations

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Breathe Easy

asthma NEW ZEALAND THE LUNG ASSOCIATION

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 Distance learning COPD Nursing Course for April 2017 and Asthma Nursing Course for July 2017. 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, 1,100 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 challenging but a 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 at level 7 and attract 15 credits. **A grant towards the cost is available for registered nurses from Asthma New Zealand.**

For information contact: Ann/Swarna
Asthma New Zealand – the Lung Association
PO Box 67066, Mt Eden, Auckland
Phone 09 623 4777 Ann or 09 623 4771 Swarna
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swarnah@asthma.org.nz

The closing date for enrolment is: 19 April 2017 for COPD Nursing Course
12 July 2017 for Asthma Nursing Course

Upcoming events and courses

ASTHMA NEAT COURSE – AUCKLAND

20 June 2017
12 July 2017
20 September 2017

HALF DAY COPD COURSE – AUCKLAND

16 May 2017
19 July 2017
18 October 2017

WORLD ASTHMA DAY

Tuesday 2 May 2017

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

MESSAGE TO READERS

Respiratory conditions to blame for one in 10 overnight hospitalisations – a sobering statistic!

The burden on our healthcare system is worsening – so true! When Kiwis are out of breath, we are all out of pocket.

Research from the University of Otago, released in March says chronic and serious respiratory illness cost our economy around $6.1 billion in 2013. There are more and more cases of asthma, bronchiectasis, childhood bronchiolitis, pneumonia and chronic obstructive pulmonary disease (COPD) seen each year.

Poverty or low socio economic circumstances are labelled as the key culprit with our most deprived areas accounting for almost four times the hospitalisations than wealthier areas.

Then we have ethnic inequality to consider – Pacific peoples' respiratory health is consistently the worse across all ages followed by Maori. Pacific people are 3.1 times more likely to be hospitalised for respiratory conditions and Maori 2.4 times more likely than other ethnic groups.

The report highlighted the effect of deprivation as "near exponential". While overall mortality rates caused by respiratory disease have declined slightly in the last 15 years, mortality rates are two times higher for both Maori and those living in the most deprived areas.

We need to work together and make urgent recommendations to government to do more to reduce the incidence and impact of respiratory disease, and eliminate equalities in respiratory health.

After all it is an election year!

Linda Thompson
Executive Director – Asthma NZ

For more information:
The Impact of Respiratory Disease in New Zealand: 2016 Update

MARCH IS 'FLU VAC TIME

By Janet Hutchison, M.HPrac, RN

Summer is hardly over before it seems time to prepare for the winter! But by being prepared, it could mean the difference between keeping well or having an acute exacerbation possibly leading to hospitalisation. The influenza (flu) vaccine is given to protect against flu in children older than six months of age and adults.

The World Health Organization monitors influenza illness throughout the year and make recommendations on which three influenza types are likely to cause the most illness in the northern and in the southern hemisphere during their respective influenza seasons. Vaccine ingredients are specific to the brand of influenza vaccine they are associated with, and may vary each year. Specific information on ingredients in the vaccines used each season can be found on the individual vaccine datasheets.[1]

Why should I get vaccinated?

Flu is a severe and sometimes life-threatening infection that may lead to hospitalisation and prolonged illness, particularly in the elderly and those with a chronic condition. It is different to the common cold, although people often say they have the flu when really it's a cold.

Facts about the flu

You can spread the flu to people, including your family/whanau and friends, who are at most risk of complications

While general health affects the severity of an infection, the influenza virus is contagious and anyone can become infected.

Influenza is more than just a 'bad cold'. Although some of the symptoms are the same, influenza is usually much more severe. Symptoms of influenza include a cough, headache, fever or chills, body aches and pains, fatigue and generally feeling miserable.

Influenza, commonly called the flu, can be a serious illness that is sometimes fatal.

Even if you do not end up in hospital, influenza can keep you in bed for a week or more, preventing you from doing work, sport or just about anything that requires leaving the house.

The flu spreads from person to person. The influenza virus is transferred in droplets of moisture expelled through breathing, coughing and sneezing. The virus is spread when a person touches any droplets which contain the influenza virus and then touch their mouth, nose or eyes before washing their hands.

Influenza can affect anyone, no matter how fit, active and healthy they may be. Although people with underlying health conditions are most at risk from influenza associated complications, previously healthy people can still become seriously ill and even die.

It has been estimated that influenza contributes to hospitalisation in 327 per 100,000 in elderly people and 244 per 100,000 infants under 1 year of age.

We cannot predict from year to year how severe the influenza season may be. The flu virus can change yearly and new strains can emerge to which people are not immune.

To maintain the most effective protection against influenza:
- annual immunisation is required
- protection lessens over time
- each year influenza can be caused by different strains of influenza viruses that are not represented in the previous year's vaccine

It takes around two weeks to develop immunity once vaccinated. Ideally, immunisation should be carried out before the main influenza activity in May to September. People can be immunised at any time during the influenza season, but the vaccine is only free for those in the high-risk groups until the end of July.

Seasonal influenza vaccinations are recognised as being the single most effective way of reducing the impact of seasonal influenza – especially for those most at risk of complications.[2]

Who should get the vaccine?

The influenza vaccine is available each year from about March for:

- Children aged 6 months and over.
- Healthy adults.
- Pregnant women.*
- Adults 65 years of age and over.*
- Children aged 6 months to under 5 years who have been hospitalised for respiratory illness or have a history of significant respiratory illness.*
- Anyone aged 6 months to under 65 years with a medical condition that increases their risk of acquiring influenza or developing complications from influenza:*
  - Cardiovascular disease (ischaemic heart disease, congestive heart disease, rheumatic heart disease, congenital heart disease, cerebrovascular disease).
  - Chronic respiratory disease (asthma if on regular preventive therapy; other chronic respiratory disease with impaired lung function).
  - Diabetes.
  - Chronic renal disease.
  - Cancer (patient currently has cancer), excluding basal and squamous skin cancer if not invasive.
  - Other conditions (such as autoimmune disease, immune suppression, immune deficiency, human immunodeficiency virus (HIV), transplant recipients, neuromuscular and central nervous system diseases, cochlear implant, error of metabolism at risk of major metabolic decompensation, pre- or post-splenectomy, Down syndrome, haemoglobinopathies and children on long term aspirin).
- People who are obese (this group of people are not eligible to receive a free influenza vaccine unless they also have an 'eligible' medical condition).[1]

The following conditions are excluded from funding:
- Asthma not requiring regular preventive therapy.
- Hypertension (high blood pressure) and/or dyslipidaemia (high cholesterol) without evidence of end-organ (brain, eye, heart, kidney) disease.
- Occupational recommendations for this vaccine: early childhood services staff; health care assistants and long term facility carers; laboratory staff; medical, nursing, other health professional staff and students in training for these occupations; police.[1]

*Eligible for funded influenza vaccine.

The difference between the flu and a common cold

Influenza – sudden illness	A common cold
Moderate to severe illness lasting 7-10 days	Mild illness
Fever (usually high)	Mild fever
Shivering	A runny nose
Muscle aches	Muscle pain uncommon
Headaches (may be severe)	Mild headache (congested sinuses)
Dry cough may become moist	Sometimes a cough
Can suffer severe complications (pneumonia)	
Bed rest necessary	
Vaccine available	**No vaccine available**

Stop the spread of the flu

If you are unwell, stay at home until you are better. Follow basic hygiene practices:
- Wash your hands regularly for at least 20 seconds and dry them for 20 seconds – or use an alcohol-based hand rub
- Cover your mouth and nose with a tissue when you cough or sneeze – then put the tissue in a lined bin
- Cough or sneeze in to your elbow if a tissue is not readily available
- Avoid touching your eyes, nose and mouth
- Don't share drinks
- Avoid crowded places

Flu can be anywhere. Get immunised. Protect yourself. Protect your family. Protect your community. Immunisation may be FREE for you. Ask your doctor or nurse today.[2]

References:
1 Immunisation Advisory Centre. (2017). Influenza vaccine (Influvac®). Retrieved March , 2017, from http://www.immune.org.nz/node/604
2 Ministry of Health/National Influenza Strategy Group. (n.d.). Flu can be anywhere. Retrieved on March 10, 2017, from http://www.fightflu.co.nz/

DEAR NURSE

Dear Nurse, my nurse said not to use the Duolin that I brought home from the hospital for my asthma but to use my Ventolin, why is this?

There are two medications inside Duolin that relax the muscles surrounding your breathing tubes. The medications are salbutamol (which is the same medication that is in your Ventolin) and another medication, ipratropium bromide. Ipratropium is usually given to people who have chronic obstructive pulmonary disease (COPD). In hospital, Duolin is often given as more bronchodilation is required than Ventolin can give. Sometimes the doctor may prescribe Duolin for asthma but it is not widely used for asthma in the community setting.

Dear Nurse, I've recently been into hospital with a severe episode of asthma. This is the second time this month. I am 32 and work as a TV installation engineer. I've had lots of time off work and I just can't seem to get my asthma under control. What can I do?

Firstly, you need to speak with your family doctor for a review of your asthma and medications. It's important that you are on the recommended medications and are taking them correctly. Your medications should be entered onto an asthma action plan so that you know what to do if your symptoms worsen. Ask your doctor for a peak flow meter and record this, together with your symptoms, in a diary. This will help both you and your doctor to check your progress.

If your job involves climbing into roof spaces and under floors, you should wear an industrial type mask so that you are not inhaling the dust and old insulation material particles. Speak with your boss and ask if it's possible to change your role so that you are not exposed to occupational hazards. Contact your local asthma society or your family doctor for more information on asthma management.

Dear Nurse, how can I prevent an asthma attack?

Dear reader, unfortunately you may not be able to fully prevent an asthma attack, however, there are a few things you can do in order to help with the severity of your asthma and to lower the chances of an asthma attack occurring.

The first tip is to take your asthma medications as prescribed. There are 3 categories of asthma medications. These are preventers, relievers and combinations.

Your preventers do exactly as the name states; they help your asthma long term. They contain corticosteroids which help reduce the swelling, inflammation, redness and mucous production in your airways. They start to work after 7 days and take up to 21 days to come to full effect. Examples of these include Flixotide, Beclazone and Pulmicort.

Relievers are fast acting medications which work on the muscle surrounding your airways by relaxing them, enabling your airways to open up. These medications contain a bronchodilator; they take 5 minutes to work and 20 minutes to come up to full effect. They last up to 4-6 hours. Examples of these include Ventolin and Respigen.

Your combination inhalers contain a bronchodilator and a corticosteroid. Therefore, they have the same effect as preventers and relievers combined. Combination medication should be taken regularly, usually twice daily as prescribed and are not used in emergency situations. Examples of combination medication devices include Seretide and Symbicort.

The next tip is to know what your triggers are, and avoid them if you can. Triggers can be many different things which vary from person to person, such as cats, dogs, dust mites, pollen, grass, respiratory infections etc. These trigger your asthma, therefore, by avoiding them or having very minimal contact with these, if possible, will reduce your chances of an asthma attack occurring.

The next tip is to quit smoking. Smoking does not help your asthma at all, is bad for your overall health and affects the airways in your lungs which also causes asthma. Therefore, it is best if you quit smoking. Phone Quitline or ask your regular health provide for support with this.

The final tip is to get the flu vaccine. People with asthma airways often have inflamed and sensitive airways and the influenza virus can cause more swelling and redness within the airways. This can lead to worsening of asthma symptoms and lead to asthma attacks. Therefore, there is a very strong connection between asthma and the flu.

Dear Nurse, how can I discover what my allergies are?

Dear reader, you are able to discover what your allergies are through a test called a Skin Prick Test. It checks for immediate reactions to as many as 40 allergens such as pollen, mold, dust mites, food, grass etc. There are usually performed on the inner arm and is usually performed by the laboratory but ordered by your GP. It is usually performed by drawing small marks on your skin and applying drops of different allergen extract near the marks drawn. Then a lancet is used to prick the skins surface. You then wait 15-20 minutes. After this time, it is observed whether you have developed any raised, red bumps, almost like an itchy bite. This demonstrates which allergens you may be allergic too. The lancet they use to prick the skins surface is not like a normal needle, you will not bleed or feel any more than mild discomfort.

Dear Nurse, what are the symptoms of asthma?

Dear reader, there as 4 main symptoms of asthma. These are coughing (being either a dry or wet cough), wheezing, shortness of breath and tightness of the chest.

Dear Nurse, can people die from asthma?

Dear reader, unfortunately yes, people can die from asthma especially if their asthma is not well controlled. 460,000 people in New Zealand are prescribed asthma medication. 1 in 7 children and 1 in 9 adults take asthma medication. There were 69 deaths caused by asthma in 2011, 61 in 2007 and 65 in 2008. Therefore, it is very important that people use their asthma medications correctly as they have been prescribed e.g. If prescribed one puff twice a day, they must use one puff twice a day. People need to be aware of their triggers and minimize contact with these as much as they can. People need to know how to take their medication; if it is through a metred dose inhaler they should use a spacer and complete 6 breathes to 1 puff, shaking before each puff of medication. It is important that if one seeks medical attention urgently for an asthma attack or episode that they do it promptly in order to treat and reduce the symptoms as quick as possible. People do need to be aware that asthma can not only have long term effects on your lungs but it can actually kill you.

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.

BACK TO SCHOOL

By Janet Hutchison M.HPrac, RN

Now that school has started again for another year, have you thought about how to manage your child's asthma during school time? Perhaps your child is starting school for the first time and you're worried that the teacher may not notice if asthma symptoms appear? What is the best way to help school staff to support your child with asthma?

As asthma nurse educators, we are frequently asked by parents how they can manage their child's asthma in the school environment. Parents need to feel reassured that when they leave their children at school, the staff will assist with the administration of inhalers for younger children and confidently deal with an emergency should it arise.

Poorly controlled asthma can lead to many school days being lost due to sickness

The Home Heating study found children with asthma had two additional days off school per winter, compared to children without asthma.[1] Studies in the US have shown that asthma was the leading cause of school absenteeism due to a chronic condition, accounting for around 10.5 million missed school days.[2] Children who have interrupted sleep due to night time asthma symptoms arrive at school tired and may fall asleep in the classroom. Tiredness and difficulty in breathing makes it hard for students to concentrate on schoolwork, and those who need to frequently leave the classroom to use inhalers may miss crucial information.

So what information does the school need in order to help a child with asthma?

Schools usually provide a medical history form for parents to complete on admission to school. It's a good idea to update this form annually, or to let your school know if asthma is newly diagnosed. They need to know what medications your child is taking, particularly the ones that may need to be taken during school time and emergency treatments. Preventer inhalers are usually taken twice daily so can be given before school starts in the morning and later in the evening. Having an up to date written action plan from your doctor, or asthma nurse is important not only for the family at home but also for school staff.[3] This will include all the relevant medications that are being taken, and what to give and how often in an emergency. You can download a plan from the Asthma New Zealand website.[4]

Alerting school staff to potential triggers for your child's asthma is important. Sometimes in school, it may be cold when the seasons change, or there may be a furry pet in the classroom that your child is allergic to. If their asthma is triggered by respiratory infections, your doctor may have written on the action plan that the reliever inhaler (e.g. Ventolin, Respigen, Salamol or Salair) is to be given every four hours with a cold or virus. This will require the inhaler to be given during school time. Ask if the teacher or first aider can give the inhaler or supervise your child at specified times. If the child has recently had an acute episode (exacerbation), it may be advisable to refrain from running around outside in cold weather until he/she has fully recovered. Giving the reliever inhaler 10 to 15 minutes prior to exercise can also help during recovery periods.

Ensure that metered-dose inhalers (aerosol type) are accompanied by a spacer.[5] Spacers provide around four times more medicine than using the inhaler alone. When used on a daily basis, they need to be washed every week in warm soapy water. The older type hard plastic spacers should be left to drip dry with the bubbles still inside. This helps to reduce the static electricity in the spacer and prevent the medication from sticking to the inside wall of the spacer. The new anti-static spacers, like the e-chamber range can be rinsed and dried. Ensure the spacer is completely dry before use. Wash and replace the school spacer if it's left there for emergencies. Change your spacer every 6-12 months: they are free from your family doctor. Asthma New Zealand also sell the e-chamber range available on our website.

If your child's asthma is well controlled, emergency care may never need to be administered, however, knowledge of what to do in an asthma attack is always useful. Ask your local asthma society if they can help to provide information and education for the school staff should they wish to have an update on asthma. We do not expect school staff to be experts in all things concerning asthma, however, there are new inhalers available now that school staff may not have seen before.

Some schools keep a small supply of Ventolin for emergencies where the child has no inhaler with them. Asthma New Zealand can provide a folder of information including a sample asthma policy for schools, an action plan for parents to give to their health professional to complete for the school to keep for reference, and a letter from the Ministry of Health allowing the principal's representative to buy a maximum of three Ventolin inhalers per year for school use.

Remember, many school children with asthma symptoms are sent home when they could easily and safely be dealt with in school. Supporting school staff to care for children with asthma can help to reduce the number of sick days taken due to asthma, and give parents confidence that their child is in safe hands.

If you are unsure about your child inhalers or want more information about achieving better asthma control, contact your local asthma society for more information.

References:

1 Telfar Barnard, L., Baker, M., Pierse, N., & Zhang, J. (2015). *The impact of respiratory disease in New Zealand: 2014 update*. Wellington: The Asthma Foundation.

2 United States Environment Protection Agency. (2017). *Managing asthma in the school environment*. Retrieved March 2017, from https://www.epa.gov/iaq-schools/managing-asthma-school-environment

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ASTHMA IN WINTER

By Ann Wheat RN BN

There are certain weather patterns that are known to cause problems for people with asthma. Winter is one of them. Cold air is a major trigger of asthma. Obviously, you can't change the weather, but you can take steps to avoid exposure to it.

A warm, cozy house may seem like an asthma friendly place, but it can be a breeding ground for dust mites, mould and pet dander. These asthma triggers, along with germs, accumulate in an insulated house, so people should keep their homes extra clean when all the doors and windows are closed for the winter. The use of dehumidifiers can avoid dust mite and mould growth. Air in a heated room can be dry and release irritants that bother the airways of people with asthma. Autumn and winter fires can be a real problem for some people with asthma who are sensitive to smoke. Make sure to clean the chimney before lighting your first fire. Doors on fire places should be closed whilst a fire is burning to eliminate as much smoke as possible from entering the house.

Be aware, not only of smoke in your own home but also chimney smoke from your neighbour's homes. There will be an increased incidence of colds and viruses which can put increased pressure on the respiratory system and cause airway inflammation and trigger symptoms.

Second hand smoke can aggravate asthma, so try to keep your home and motor vehicle smoke free zones. It is very important to protect the body from the cold air if people with asthma want to participate in outdoor winter sports. Wrap a scarf around the face to make sure the air that is entering the nose and mouth is warm and moist.

Asthma is a condition that can become life threatening if not managed correctly. Research shows allergens play a large role in triggering airway inflammation and asthma symptoms, leading to episodes of breathing difficulty such as wheezing and shortness of breath.

People with asthma are at a greater risk from influenza than others as asthma symptoms are often triggered by respiratory infections. A flu vaccine is an effective way to ward off the virus during the winter season. If colds and flu make your asthma worse, prevention is the key to keeping your asthma under control. The flu vaccination offers protection from the virus for a year and is free to people with asthma (see the article on flu vaccination in this issue).

Before resigning yourself or your child to a life attached to an inhaler, first try improving your indoor air quality as a preventive measure.

Exercise is important even during the winter months so here are a few exercise tips for people with asthma during the winter season.

- Avoid strenuous exercise in cold dry air, as cooling and drying of the bronchial airways can trigger an asthma episode.
- Do not directly inhale a blast of cold air; breathe through your nose rather than your mouth whenever possible.
- Avoid winter sports, such as skiing, snowboarding, or ice skating, especially if your asthma is not under good control.
- Use your bronchodilator inhaler, 20 minutes prior to exercise.
- Keep your inhalers warm in order to avoid a cold aerosol spray.
- Be sure to "warm-up" before and "cool-down" after strenuous exercise.
- When exercising in cold air, wear a scarf or facemask over the nose and mouth to warm the air you are breathing.
- Be sure to drink plenty of liquids before and after exercise to prevent drying of the airways.
- Exercise indoors when outdoor temperatures drop.
- Run on an indoor track during the coldest winter months.

The best year-round exercise for people with asthma is swimming in an indoor heated pool. But chlorine, when combined with organic substances (such as skin particles, hair follicles, water-borne bacteria, and even sweat and urine), forms trihalomethanes (THMs). Although chloramines and THMs have long been known to be agitators of asthma and its symptoms, studies have now proven that these harmful chemicals may actually cause asthma. Two recent European studies deeply scrutinized these substances in order to determine their negative health effects. Researchers found that nitrogen trichloride, one of the many known THMs, was the main culprit in many forms of occupational asthma.

Here are a few further tips for people with asthma for the whole year –

- Encase pillows and the mattress with special encasings that protect against dust mites: they place a barrier between you and the dust mites that live in the mattress and pillows.
- Every two to three weeks wash sheets in very hot water, at least 130 degrees Fahrenheit or 55 degrees Centigrade for at least 10 minutes to kill dust mites.
- Eliminate all sources of dust. Clear out the clutter. Look under the bed and on bookshelves.
- Wash the curtains.
- Be sure to clean air-conditioning filters.
- Dust all surfaces such as picture frames, walls and floors with a slightly damp cloth.
- If possible, remove all carpeting. Carpets collect dust, crumbs, hairs, fluff from clothing and mould.
- No matter if your room is carpeted or not, vacuum the room thoroughly at least once a week, preferably using a HEPA filtered vacuum.
- Don't have a dirty wet clothes hamper in the bedroom. Dirty clothes are a breeding ground for mould and mildew.
- Keep pets outside whenever possible. Do not allow them into the bedroom.

References:

ADVANCE for managers of respiratory care

Dr. K. Thickett of the Occupational Lung Diseases Unit at the Birmingham Heartlands Hospital, Birmingham, England

BRONCHIOLITIS

By Ann Wheat RN BN
Asthma Nurse Educator

What is bronchiolitis?

Bronchiolitis is a common illness usually caused by a viral respiratory infection which leads to breathing problems in babies and children in the first years of life.[1] It affects the smallest airways (bronchioles) in the lungs and is most common in winter and spring. The most common virus is the respiratory syncytial virus (RSV) and is responsible for almost half of all the cases every winter, but other viruses can be involved such as the influenza virus.[1]

Bronchiolitis is very contagious. It spreads by direct contact or in airborne droplets from the nose and mouth when a person sneezes, coughs or laughs.

Symptoms of bronchiolitis

- Sneezing
- Mild cough
- Low grade fever
- Rapid respiratory rate
- Runny nose
- Stuffy nose
- Hyperinflation
- Wheeze
- Crackles
- Poor appetite or refusing to drink

Bronchiolitis can be mild, moderate or severe

Most babies do not require any special medical treatment and will get better by themselves. Because the illness is caused by a virus, there is no indication for antibiotics, systemic or inhaled corticosteroids or bronchodilators. Most babies can be looked after at home if they have no breathing problems and continue to feed well and are not dehydrated, but establishing the severity of bronchiolitis in infants is essential in determining how to manage it.[1]

How to look after your baby at home

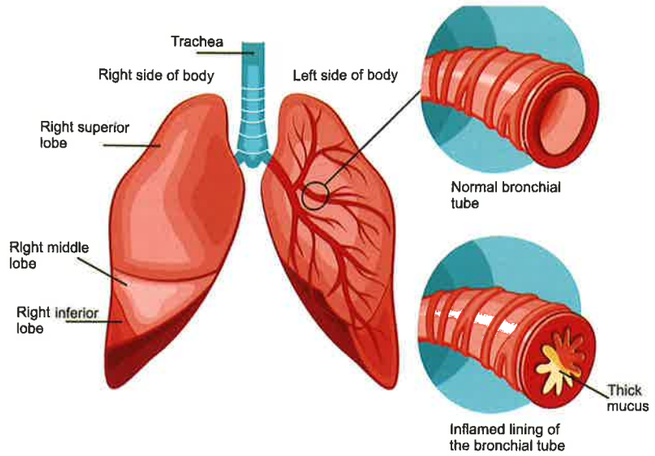
- Offer small feeds of breast milk, formula or sips of water.
- Keep your baby warm and not too hot
- Try to stay at home to avoid temperature changes
- Try and get your baby to rest as much as possible
- Keep your baby's nose clear. If it is blocked or crusty you can use saline nose drops (these are available from the chemist). Use the drops before you feed baby as this will help to clear the nose and they will feed better.

Some babies with bronchiolitis may become very sick requiring hospital treatment. This can happen gradually or very quickly.

Signs to watch for:

- Rapid shallow breathing
- Heart beat is a lot faster than normal
- Sucking in of the neck muscle and the muscles below the rib cage and between the ribs
- Very restless, irritable and not sleeping
- Not feeding or taking fluids
- Exhaustion

A baby or child with severe bronchiolitis may tire from the work of breathing and have poor air movement in and out of the lungs, due to the tiny airways being blocked, causing blueness to the lips and fingernails (cyanosis). Babies with severe symptoms or who deteriorate may require oxygen, nasogastric feeding and intravenous fluids.



If the baby is not feeding well or taking in enough fluids, it will become dehydrated very quickly and this can be serious, and the baby must be admitted to hospital.

Signs of dehydration:

- The baby or child's skin feels hot and dry
- Dry mouth
- Not passing very much urine i.e. fewer wet nappies
- Not eating or drinking
- Irritable
- Crying a lot
- May be very sleepy or lethargic
- Temperature over 40'C

When should I take my baby to the doctor?

If your baby or child is unwell and coughing it is important to see your doctor for a check to see if it is bronchiolitis or if there is something else causing the cough.

What will my doctor do?

Your doctor will talk with you about your baby or child's symptoms and will use a stethoscope to listen to the breathing. The doctor will check your baby or child for signs of dehydration. He may ask you to come back in the next 24 hours for a check up to see if your baby or child is improving or getting sicker.

When should I get urgent help?

See your GP or go to an after-hours medical centre urgently if you are worried about your baby or child or if your baby;

- Is under three months
- Is breathing very fast, has noisy breathing and using the muscle in the neck and the muscles under the rib cage and between the ribs
- Looks unwell or very pale
- Is vomiting
- Is getting worse

When should I seek emergency help?

Dial 111 for urgent help if your child has any of the following;

- **Stops breathing**
- **Has severe difficulty breathing or has periods of stopping breathing**
- **Has blueness of the lips or fingertips**
- **Is very sleepy, difficult to rouse, is floppy and very pale.**

Re-infection is common.

Re-infection is very common. Advice should be given on how to reduce the risk of infection, and how to prevent the spread of infection to other infants in the family.

Remember that the virus is spread by contact, sneezing and coughing.

Always wash your hands before and after handling your baby
People who have a cold or flu- like illness should try to avoid contact with infants
Keep the home or the room at a constant even temperature
Make the home a smoke free environment
Seek help early if you are concerned about your baby's breathing or wellbeing

Situations that increase the risk of bronchiolitis include;

- Damp housing
- Inadequate heating
- Overcrowding
- Smoking
- Family or Whanau who are unable to provide adequate clothing for warmth over the winter months
- Transport and access problems to health care resources

"Transient infant wheeze is thought to be due to smaller than normal airways and is associated with exposure to tobacco smoke and early viral infections. Acute attacks of wheezing tend to occur with viral upper respiratory tract infections".[3]

"Only a minority of infants who wheeze in the first year of life will have asthma. Some of these infants will have a strong risk factor, such as parental asthma or eczema. A definite response to bronchodilators and asthma can be recognised from an early age. In others, the trend towards a recurrent wheezy illness responsive to bronchodilator is only apparent after a period of months or years. Risk factors for asthma include eczema in the infant, wheeze without a cold (interval symptoms), more than two episodes of wheezing with a cold and a family history of atopy".[3]

Make your home smoke free.

Original article written by Elaine Murray RN. Asthma Nurse Educator.

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USING A PEAK FLOW METER AS A TOOL TO MANAGE YOUR ASTHMA

Edited by Adie Riddell RN – Asthma Nurse Educator

A peak flow meter can help you and your doctor evaluate how severe your asthma is at any point of time. With a peak flow meter, you can often see a decrease in your reading even before symptoms get worse. Decreases in peak flow may show that you need to increase your medication, such as adding in the use of your reliever for a cold.

This article explains the benefits of using a peak flow meter to manage asthma effectively, and reduce flare ups and the possibility of hospital admissions by early intervention.

Asthma can cause narrowing of the bronchial tubes and, as a result, air cannot move freely through the airways. Therefore, you experience the signs and symptoms of a tight chest, shortness of breath, coughing and wheezing.

A peak flow meter for asthma is like a thermometer for a fever: both are tools to help monitor what is going on in your body. For instance, there may be times when you feel feverish, but when you take your temperature with a thermometer, it is normal. With asthma, sometimes you may feel your breathing is fine, but when you measure it with your peak flow meter your lung function is slightly decreased.[1]

Variability in peak flow, especially at night, is another indication that perhaps the asthma is not well controlled.

The peak expiratory flow (PEF), also called peak expiratory flow rate (PEFR), measures how fast air comes out of the lungs, i.e. it measures the flow rate generated during a forceful exhalation following full lung inflation,[2] therefore, you need to use a good technique otherwise the result is not accurate.

The most frequent use of a peak flow rate measurement is in home monitoring of asthma, where it can be beneficial for both short-term and long-term monitoring. When properly performed and interpreted, peak flow rate measurement can provide the person and the doctor with objective data upon which to base therapeutic decisions.[2] Since peak flow rate measurement depends significantly on patient effort and technique, clear instructions, demonstrations, and frequent review of technique are essential.

There is some conflicting data regarding the efficacy of peak flow monitoring, but most studies have shown a benefit when peak flow rate monitoring is linked to symptom diaries and patient education. Another study suggested that with symptom-based monitoring, some people underestimate the severity of their condition.[2] Many people who have had asthma for a long time feel that they can judge the severity of an attack by their symptoms alone, but studies have shown that for more than half the time, people with asthma will be mistaken in their estimates.[3]

Another measure of asthma control is peak flow variability. For many people with asthma, symptoms are usually worse at night. By consistently monitoring night time peak flow measurements, to compare with your daytime readings, you can tell how well your asthma is controlled. A decrease of 15% or greater, is significant in the diagnosis of asthma.[1]

In 2007, an expert panel of the National Asthma Education and Prevention Program recommended periodic assessment of pulmonary function by spirometry or peak flow rate monitoring.[2] If peak flow rate monitoring is used, the person should have a written asthma management plan and know what their personal best peak flow is.

The panel recommended consideration of long-term daily peak flow rate monitoring or home peak flow rate assessment during exacerbations for people with the following;

- Moderate or severe persistent asthma
- History of severe exacerbations
- Poor perception of airflow obstruction and worsening asthma
- Preference for peak flow rate monitoring rather than the use of a symptom- based action plan

In managing chronic asthma, long-term daily peak flow rate monitoring may assist with the following;

- Detecting early changes in asthma that may require therapy
- Evaluating responsiveness to changes in therapy
- Giving a quantitative measurement for improvement

It can be very useful to assist in the diagnosis of asthma, including occupational asthma, and also to help in identifying triggers.

People with asthma who are "poor perceivers" have few symptoms when their airways narrow. People with under-treated asthma who have become used to chronically poor lung function do not recognise or under- estimate worsening asthma. There are some people who do not develop symptoms in response to a large fall in lung function[4].

However, the use of peak flow rate during an acute asthma exacerbation is controversial. The 2007 Expert Panel Report suggested that measuring peak flow rate in acute episodes helps to determine the severity of exacerbations and assists in guiding therapeutic decisions whether at home, at school, in the GPs rooms or emergency departments,[2] especially if it is known what that person's personal best peak flow is.

So, what is your personal best peak flow? Your personal best peak flow is the highest peak flow number you can get over a two to three-week period whilst you are well and your asthma is well controlled.

Your personal best peak flow is important because it is the number to which all of your other peak flow recordings will be compared, and it is the number that will be used as your 100% best on your management plan (green zone). If your peak flow drops to 85% or less (yellow zone) of your personal best, your asthma is getting worse. If it continues to drop to 60% or less (orange zone) then you need to seek medical help. If it is 40% or less (red zone), it is an emergency.

Everyone with asthma should have an asthma management plan that is filled in by their GP telling them what medications they need to take to keep their asthma under control when well, what to 'add' in as their asthma gets worse, and more importantly, what to do in emergencies.

How do you find your personal best?

Peak flow meters are free from your GP. To do a peak flow, (do this while standing up), you need to take a deep breath, as deep as you can, then put the mouth piece in your mouth, seal your lips tightly around the mouth piece and then blow out through the peak flow meter with a short sharp forceful breath. Use your chest and abdominal muscles to force the air out of your lungs as quickly as possible.

Make sure your fingers do not interfere with the indicator (this stops the indicator moving up the peak flow meter). Record the level that the indicator stops at. Return the indicator to zero. Do two more blows. Record the highest that you got. Do your peak flow recording twice a day at the same time for 2-3 weeks, when you are well!

Always use the same meter.

The expected peak flow rate will depend on height, age and gender for an adult, and height only for children. Ask your practice nurse to measure your height and then along with your age and gender she will be able to tell you what your expected peak flow rate should be, and this will give you a guideline as to what you should be blowing.

As children grow, they will need to be re-measured as their expected peak flow will go up accordingly.

If your asthma is not well controlled or you are becoming unwell, your scores are likely to be lower than expected, and there may be a big difference between your morning and evening reading.

It is important to know that with worsening asthma, a low peak flow reading can occur before asthma symptoms such as shortness of breath, tight chest or wheezing. Note: wheezing may not occur in all children with worsening asthma.

We encourage:

- all adults and children from 6 years to have their own peak flow meter
- know their personal best peak flow when well
- have a written asthma management plan to follow
- see your doctor for a regular review of your asthma control and asthma medications.

Original article written by Elaine Murray, R.N.

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ASTHMA MEDICATION MANAGEMENT IN CHILDREN

By Renee Goldbert RN – Asthma Nurse Educator

In New Zealand, 1 in 7 children take medication for asthma and over 3000 children per year are admitted to hospital with asthma, with some of those classified as life-threatening episodes.[1] Effective asthma medication management is pivotal for children and their families/whanau to prevent exacerbation of asthma, and to reduce the risk factors for poor asthma outcomes for children.

Children under the age of 5 years are classed as 'pre-school' asthma where the child is treated with asthma medication but may not necessarily become 'asthmatic'. So the important message is that once a child is diagnosed with asthma, they will be treated according to their level of asthma or symptom control, not according to their age.

The Global Initiative for Asthma (GINA) has developed a new, 'At-A-Glance Asthma Management Reference' which highlights asthma control assessed within the last 4 weeks by the following[2]:

- Daytime symptoms more than twice per week
- Waking at night due to asthma symptoms
- Reliever use more than twice per week
- Activity limitation

Calculation of the amount of episodes within a 4-week time period results in whether the individual's asthma symptoms are:
0 = well-controlled
1-2 = partly controlled
3-4 = uncontrolled

Once the child's asthma control is determined then the physician (GP, Dr or Paediatrician) uses a stepwise approach to asthma medication management. When the physician diagnoses a child with asthma, the management will start with a reliever such as Ventolin and after 1-3 months they will reassess symptom control before considering a preventer such as Flixotide.

The physician assessment includes:
1. Symptom control and risk factors
2. Inhaler technique and adherence
3. Client preference of medication device

Then, the medication can be adjusted with a review in 1-3 months of the child's response which includes:
1. Symptoms
2. Exacerbations or flare-ups
3. Side effects, i.e. oral thrush
4. Client satisfaction
5. Lung function, i.e. peak flow and/or spirometry testing

The stepwise approach to asthma management incorporates steps 1-5 of preferred 'controller', (preventer) or other preventer options and a reliever. The physician will consider stepping up the medication to a stronger dose if the child has uncontrolled asthma symptoms and exacerbations/ risks, or stepping down if asthma symptoms are controlled for >3 months and there is a low risk of exacerbation. Parents should have their child's asthma control reviewed by their GP every 3-12 months.[2]

Professor Innes Asher recently presented the New Zealand Child Asthma Guidelines at the New Zealand Respiratory Conference in November 2016. The goal for the guidelines highlights equity for children under 15 years, and Maori and Pacific families who are most at risk for hospitalisation due to asthma. The guidelines focus on 6 sections which include preschool asthma, a stepwise approach for 5-15 year olds and identifying adolescents, Maori and Pacific children as populations at greatest need for health equity. These guidelines are currently in progress and are expected to be available by the end of 2017.[3]

"The challenge for health professionals is to ensure children receive effective asthma medication management which lies with whanau/families and health professionals' ideals, experience, and capacity. Whanau/family requires support to confidently manage asthma medications and they often prefer minimal dependence on medication for their children; as opposed to health professionals who see asthma medication adherence as highly important. Furthermore, whanau/family can experience confusion over medication types and fear side-effects as opposed to health professionals who may see this as poor treatment compliance."[4]

A report by the University of Otago to the Ministry of Health of New Zealand called 'He Maramatanga Huango: Asthma Health Literacy for Maori Children in New Zealand', identifies recommendations for health professionals.[4] These include children and their whanau/families obtaining access to individualised, understandable asthma action plans and that all consultations between health professionals and whanau/family are seen as an opportunity to support asthma self-management. Additionally, health professionals need to promote access to relevant support services, i.e. Whanau Ora if access to asthma medication is a barrier, and to ensure the whanau/family receive follow-up visits after acute presentations or hospitalisation."[4]

Asthma nurse educators have a pivotal role in supporting individual health behaviours by teaching health literacy to actively promote self-management of asthma with written action plans and managing asthma medications.[1] As part of the Asthma New Zealand service, our asthma nurse educators provide education and support to children living with asthma and their whanau/family. Our service can be referred to by self-referral, your practice nurse, or physician to one of our branches in Auckland, Rotorua or Wellington via our website www.asthma.org.nz

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ATOPIC ECZEMA /ATOPIC DERMATITIS

By Karen Little – Asthma Nurse Educator

Atopic refers to diseases that are hereditary, tend to run in families, and often occur together. These include asthma, hay fever, and atopic dermatitis. The term atopic is from the Greek meaning "strange"; the term dermatitis means inflammation of the skin. Eczema is a general term for many types of skin inflammation (dermatitis); the word eczema comes from Greek meaning "to boil over". Atopic dermatitis is the most common of the many types of eczema. The terms eczema and dermatitis are often used interchangeably.[1] Dermatitis often is used more to imply an external trigger.

Atopic dermatitis is also known as atopic eczema. It is characterised by itchy, inflamed skin. This affects males and females and is very common; it mainly occurs in infants and children. 90% develop symptoms before the age of 5, and about 60% continue to have symptoms when they become adults. About 10% of all infants and children experience symptoms of atopic dermatitis.[2]

Topical steroids are used to control flare ups but should not be used long term. Extremely dry skin can break down and ooze or weep; the skin should be moisturised, preferably, when the skin is warm following a bath or shower. Scratching can cause skin thickening and darkening and may lead to bacterial infection when topical or oral antibiotics may be prescribed. Staphylococcus aureus has been studied as a possible trigger factor as it is found on the skin on more than 90% of all atopic dermatitis patients and only on 5% of people without. This is why, in many cases, atopic dermatitis can be improved by systemic antibiotics.[3]

Oral antihistamines may be prescribed to break the "itch-scratch" cycle. Many things can worsen atopic dermatitis including low humidity, seasonal allergies, exposure to soaps and detergents and cold weather. The immune system of people with atopic dermatitis is active in a particular way: they especially make large amounts of a protein called IgE. IgE is one of a handful of proteins called immunoglobulins or antibodies – the purpose of which are to act as catalysts for the protective cells of the immune system to recognise and lock on to the protein components of foreign invaders. IgE is present in small amounts in everyone, however, in atopic dermatitis, more is produced because of increased sensitivity to substances that are inhaled or eaten, or substances in contact with the skin. These could be animal dander, foodstuffs, house dust mite, or bacteria or yeasts that live on the skin on everyone and usually cause no problems. Most individuals with atopic dermatitis react to all of these things to varying degrees.[4] Hypersensitivity to house dust mites antigen is found in up to 90% of people with atopic dermatitis; inhalation and skin contact with these antigens may worsen the skin condition. Sensitisation to animal dander may also be associated with skin reactions. Therefore, contact with animals should be avoided even if no respiratory symptoms are present. Up to 40% of people with eczema may not produce specific IgE responses to allergens. It has been suggested that the term, eczema, should be split into atopic eczema and non-atopic eczema.[3]

There are some general patterns to where the eczema is found on the body according to the age of the person. In infants, the eczema is often widely distributed and the cheeks are often the first affected. As they get a bit older, the rash often spreads to the body and limbs. The eczema may first affect the outer aspects of joints then as they become older the pattern may change to involve the creases of the joints especially the elbow and knee creases. Children can develop a "discoid" or "nummular" pattern which looks like small coin-like areas scattered over the body and may be mistaken for ringworm.[2] Adults may continue to have a diffuse pattern of eczema but the skin is often more dry and lichenified than in children. Adults may have persistent localised eczema possibly confined to the hands, eyelids or flexures. With persistent, generalized, moderately severe atopic dermatitis, based on most of the studies, it is recommended that food allergy should always be excluded.[3] Fortunately, these food allergies do not always continue into adulthood.

A defective skin barrier function is the underlying cause of atopic eczema. Moisturisers add moisture to the skin and emollients soften the skin. An ideal preparation for dry skin should have both properties. It is important to use moisturizers daily, regardless of whether the person's eczema is in remission or not. Topical steroid ointments are better for dry skin, and creams are better for moist oozing skin. People with atopic eczema may have sensitivity to contact allergens in ingredients of common preparations, either prescribed steroid preparations, or in moisturises or emollients. If the eczema is becoming worse or not responding a patch test may be required to identify any allergens. An hours break should be left between the application of a moisturiser and topical steroids so that the steroid is not diluted. Wet wraps are occasionally used in infants and young children, a weak steroid is applied to the skin then a wet bandage is wrapped over this.

As an asthma nurse educator, I regularly have clients with asthma, eczema and hay fever. The effects of eczema can be physical as well as psychological. I have seen children who have been bullied physically and verbally: being called "crusty" can be devastating for a young person. We are often contacted by school and public health nurses about children and teenagers having frequent days off school for asthma. It is less commonly understood, however, how eczema can disrupt a night's sleep due to the constant scratching. Often, children do not wake up but their rest is severely disturbed and will affect their performance at school. It is essential for self-image, both psychologically and physically, that atopic eczema/atopic dermatitis is well controlled and well managed.

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NEW CAR FOR ROTORUA

Renee Goldbert (Nurse Educator) and Thelma Wilson (Administrator) met with Bill Cleghorn from BayTrust last month to thank BayTrust for helping fund the stunning new Holden Spark Asthma Rotorua vehicle. The car was also funded by Rotorua Energy Charitable Trust and Lions Foundation. This has allowed access to as many as 50 visits to the Lakes area, Rotorua, Taupo and Turangi, including preschools and playcentres, and collaboration with key stakeholders at Lakes DHB in the Children's Unit and Maori Health. Renee is currently visiting schools in the district. Thanks to our supporters, Asthma Rotorua now has a client base of over 80 clients and going strong.

Referrals to Asthma Rotorua can now be made online by your GP, practice nurse, or yourself: http://www.asthma.org.nz/resources/patient-referrals/

Asthma Rotorua
1172 Haupapa Street
Rotorua
P: (07)347 1012
C: 021 0844 1635

WELLINGTON ASTHMA SERVICE

We may have had our worst summer on record but sun is still shining at our office in Wellington This year we have farewelled Kim our office manager/fundraiser and 'go to' girl of six years and welcomed Aniko Czip to our team. Aniko will be providing administration support for the office on Monday and Tuesdays. Of Hungarian decent Aniko came to New Zealand with her husband seven years ago. In that time, they have settled into the New Zealand culture and produced a beautiful little kiwi baby who is now about to start in our school system.

The Wellington office is a busy hub with its office in central Johnsonville and with referrals coming from as far away as Seatoun to Waikanae. The nurses are also currently working collegially with the University of Otago –He Kura –Whiti Te Ra study in primary schools, and providing the school staff education component of the project. This year they are also supporting a further research study of 'asthma in children' that is being conducted by Massey University.

In the Wellington region we have a number of independent respiratory community support groups run by committed individuals with an interest in this area. Kapiti, Porirua, Johnsonville and Wainuiomata groups meet monthly. This year we have met with most of these group to provide education on the new devices and spacers that are now being used. It is always such a pleasure to be involved in supporting these groups.

The Wellington office is open Monday to Thursday and we welcome any enquiries. Our offices are on the first floor of the Salvation Army building in Johnsonville. You are advised to ring first (04 237 4520) as the nurse may be out of the office. We do have dust mite bedding available for sale and welcome enquiries around nebulizers.

NORTH & SOUTH

NEWS FROM CANTERBURY

By Teresa Chalecki, Nurse Manager CanBreathe

South Island Respiratory Educator Forum (SIREF) 2017
CanBreathe is one of the organisers of the annual South Island Respiratory Educator Forum (SIREF) which was held on Thursday 16th and Friday 17th February at The George in Christchurch. The Forum was attended by nurses, physiotherapists and other practitioners with an interest in respiratory health. We were, again, fortunate to have a range of very knowledgeable speakers who donated their time and shared their expertise with those present.

The theme for SIREF 2017 was "Different ways of working" with topics and speakers focusing on new developments in respiratory diseases and management. Presentation topics included: Culturally and Linguistically Diverse Communities; Collaborative Care; Online Education for Respiratory Nurses; Development of the New Adult Asthma Guidelines; Patient Portals; Development of a Community Respiratory Nursing Pathway and a Research update on Asthma.

The Forum also hosted the Respiratory Nurse Section of NZNO AGM and celebrated their announcement and achievement of College status. Congratulations to all who have been involved in this process.

Some of these presentations will be available to view on CanBreathe's website – www.canbreathe.org.nz

World Asthma Day 2017
To mark World Asthma Day on Tuesday 2nd May, CanBreathe will be hosting a free Education Breakfast for Nurses. The main topic will be the new NZ Adult Asthma Guidelines. Numbers are limited so for more information or to reserve a space email office@canbreathe.org.nz.

asthma AUCKLAND

WORLD ASTHMA DAY

Tuesday 2 May 2017

Did you know 1 in 4 New Zealand kids are affected by asthma?

If one of your friends or students had an asthma episode at school, would you know what to do?

Help us raise funds and awareness for asthma by organizing a mufti day, dress up day or another mini fundraiser and support those in your community affected by asthma.

We would love to come to your school to answer these questions and many more, and show our appreciation of your fundraising efforts **in May** for **World Asthma Day 2017.**

Gold coin donation, every little bit helps!
Phone 09 630 2293 ask for Linda
www.asthma.org.nz

GASTRIC REFLUX

Gastric reflux can be a trigger for people with asthma in all age groups, from infants to older adults. The following article, by Glenn White, explains how breathing exercises can alleviate this problem.

Gastric reflux also known as acid reflux or gastroesophageal reflux disease (GERD, heartburn, acid reflux) is an extremely common health problem. Sixty percent of the adult population will experience some type of gastric reflux within a 12 month period.

The hallmark symptom of acid reflux is "heartburn"– a burning sensation behind your breastbone that sometimes travels up your throat.

Gastric reflux is thought to be caused by excessive amounts of acid in your stomach and this is why antacids and medications to block gastric acid production are often prescribed. This is a misconception and it fails to address the underlying cause.

Gastric reflux caused by too little acid not too much...

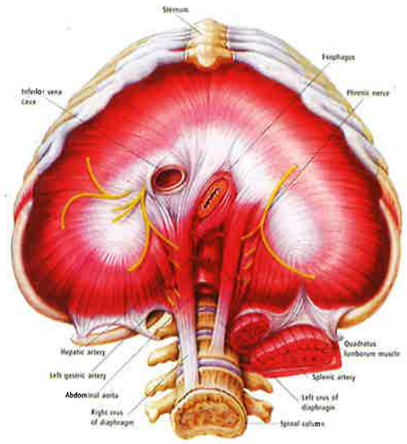
If you suffer from gastric reflux chances are you take antacids or proton pump inhibitors to help control the symptoms. These medications either neutralize or "turn off" gastric acid production in the stomach. The problem with this is that gastric reflux is almost always caused by a lack of stomach acid and these medications interfere with proper digestion and nutrient absorption. Stomach acid also protects you from harmful bacteria so lowering stomach acid can leave you susceptible to food poisoning.

Breathing exercises to alleviate gastric reflux

The primary cause of gastric reflux is commonly related to hiatal hernia. In other words, the valve that separates the oesophagus from the stomach fails to close properly and gastric juices leak back causing the symptoms often described as heartburn. And this is where diaphragmatic breathing comes in.

An Austrian study published in 2012 found that people practising 15 minutes of diaphragm breathing exercises a day reduced gastric reflux symptoms and medication use by 75%.[1]

A poorly functioning diaphragm is known to be a part of the hyperventilation pattern of breathing. The body responds to the need to over-breathe by activating the upper chest



The diaphragm: forget biceps – if you suffer from gastric reflux then tone this muscle.

muscles to breathe. When this pattern exists the diaphragm often ends up in a chronically descended and flattened position and cannot relax, a state known as paradoxical breathing.

Correct use of the diaphragm helps correct paradoxical breathing and tones the diaphragm. A toned diaphragm is essential for proper closure of the valve at the top of the stomach. This helps correct the hiatal hernia, unlike proton pump inhibitors that are only suppressing acid production.

In addition to this hyperventilation and paradoxical breathing contribute to keeping a person in a state of sympathetic dominance, otherwise known as fight or flight. This can cause indigestion. So diaphragm breathing exercises are thought to help normalise breathing and turn off the fight or flight response, easing digestion. Not surprisingly the resulting parasympathetic state is often referred to as rest and digest.

So in summary people with symptoms of gastric reflux may benefit from practising breathing exercises to help restore a functional breathing pattern and improve diaphragmatic tone. Breathing exercises, if practised correctly, are also effective at reducing stress which is a common trigger in gastric reflux.

Glenn White is a breathing educator and director of Buteyko Breathing Clinics.
www.buteykobreathing.nz

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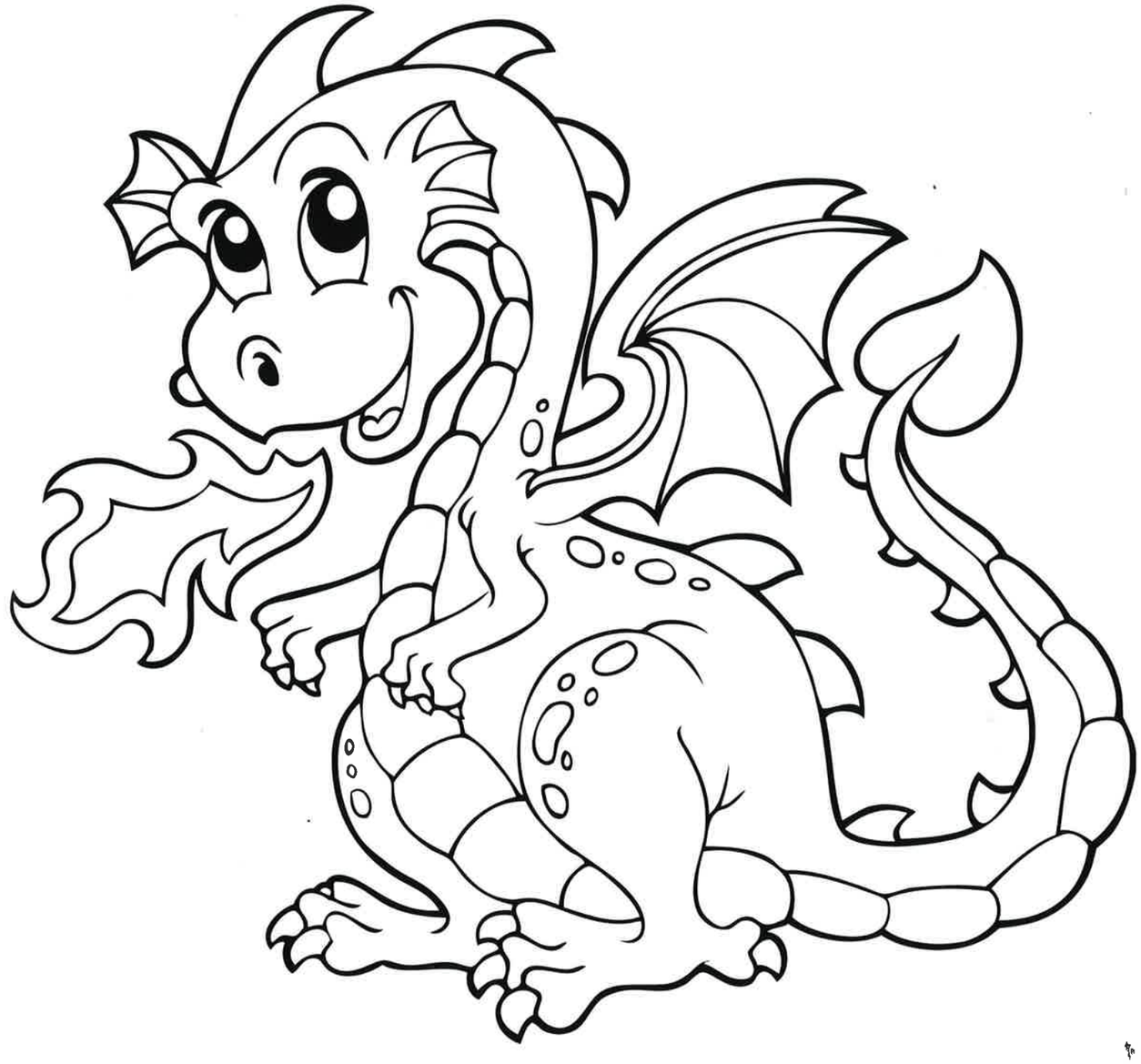
Kid's page

Colouring Competition

Post it to Asthma New Zealand, PO Box 67066, Mt Eden, Auckland 1349 by May 31st 2017.
Age categories: Under 5, 5-9 years and 10-12 years.
Include your age, name, address/email details and parent's name.



COPD AND SPIROMETRY

By Ann Wheat BN – Asthma Nurse Educator

COPD (chronic obstructive pulmonary disease) is a common, preventable and treatable disease that is characterized by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases.[1] COPD is usually found in people who smoke, have been exposed to second hand smoke, other noxious agents or have an inherited genetic family history of alpha-1 antitrypsin deficiency. Other risk factors can by socioeconomic, asthma, age, lung growth and development.[1] As a result of exposure to the above, there is usually an abnormal inflammatory response.[1] It is important to realize that COPD is not necessarily a condition of the elderly, as symptoms can manifest in people in their mid 40's or even earlier in some people with the inherited genetic deficiency.

In the early stages of COPD, there may be no, or minimal symptoms such as cough and breathlessness. As the condition becomes worse, there is an increase in breathlessness, chronic daily cough for at least two months, frequent or unusual amount and colour of sputum production and increasing episodes of infective acute bronchitis.

Along with the above symptoms, a history of smoking plus being over the age of 35 years should all be indications for a spirometry test to assess for the diagnosis of COPD and to assist with management of the condition once diagnosed.

What is spirometry and how is it carried out?

It is a simple test that measures the amount of exhaled air that a person can breathe out and the amount of time it takes to do so. The test is carried out by using a spirometer which is a device which measures how effectively and quickly the lungs can be emptied. When doing spirometry, it is important to have three reproducible and acceptable blows from a maximum of eight attempts. Spirometry should be undertaken when the person is stable and free of any respiratory infections and before any medication is taken (6 hours for short acting relievers, 12 hours for long acting relievers and 24 hours for sustained-release theophyllines).[2]

Following the initial blows, the test should be repeated 15 to 20 minutes after the use of reliever medication to check for reversibility of the result. Reliever medication should always be given via a spacer for reversibility diagnosis. If, there is minimal or no reversibility then COPD is the most probable diagnosis.[2] Spirometry tests should be undertaken by health professionals who have been specifically trained in the use of spirometry.

The spirometry test measures:

- Forced vital capacity (FVC): the maximum volume of air that is expired during a forced expiratory manoeuvre.
- Forced expiratory volume in one second (FEV1): the maximum amount of air that is expired in the first second of maximal breath out after a maximal breath in. This shows how quickly the lungs can be emptied and is affected by a person's age, sex, height and ethnicity.
- FEV1/FVC ratio: A level below 70% indicates airflow limitation and the possibility of COPD.[1]

What is the importance of spirometry testing?

The first, most important reason for doing spirometry is to confirm or exclude asthma. Asthma has a more variable course and starts at a younger age. Atopy is more common in asthma, smoking history is often relatively light and airflow limitation is usually almost or fully reversible either spontaneously or with the use of medication.[2] It is worth noting that uncontrolled asthma can lead on to chronic irreversible lung damage, and is therefore, also a condition that can be linked with COPD. Asthma and COPD can also co-exist in the same person.

Apart from helping with the diagnosis of COPD, spirometry testing is useful to assess the severity of the airflow limitation in an individual so as to be a guide and measure of the efficacy of the prescribed treatment and prognosis of the condition.[3] Once a diagnosis of COPD is made, spirometry should be undertaken annually to assess the amount of lung function deterioration and how well treatment regimens are working. Spirometry must be carried out prior to the commencement of certain medications such as long-acting muscarinic antagonists (LAMAs) such as Spiriva, Incruse or Seebri and the combinations of these. LAMAs are used for patients with moderate COPD: the criteria to obtain this medication required by the pharmacy fund in New Zealand is to have an FEV1 of 60% or less.

COPD classification of severity undertaken post bronchodilator:

- Mild – FEV1 – ≥ 80% predicted
- Moderate – FEV1 – between 50 – 80% predicted
- Severe – FEV1 – between 30% – 50% predicted
- Very severe – FEV1 < 30% predicted.[1]

In conclusion, spirometry is the gold standard when diagnosing COPD. It should be undertaken as soon as symptoms become evident and yearly to assess disease progression and treatment review. Finally, it is important to state, that the most important treatment and self help anyone can undertake when diagnosed with COPD is to **stop smoking**. Whether one is 40 or 80, smoking cessation will assist in the management of this condition.

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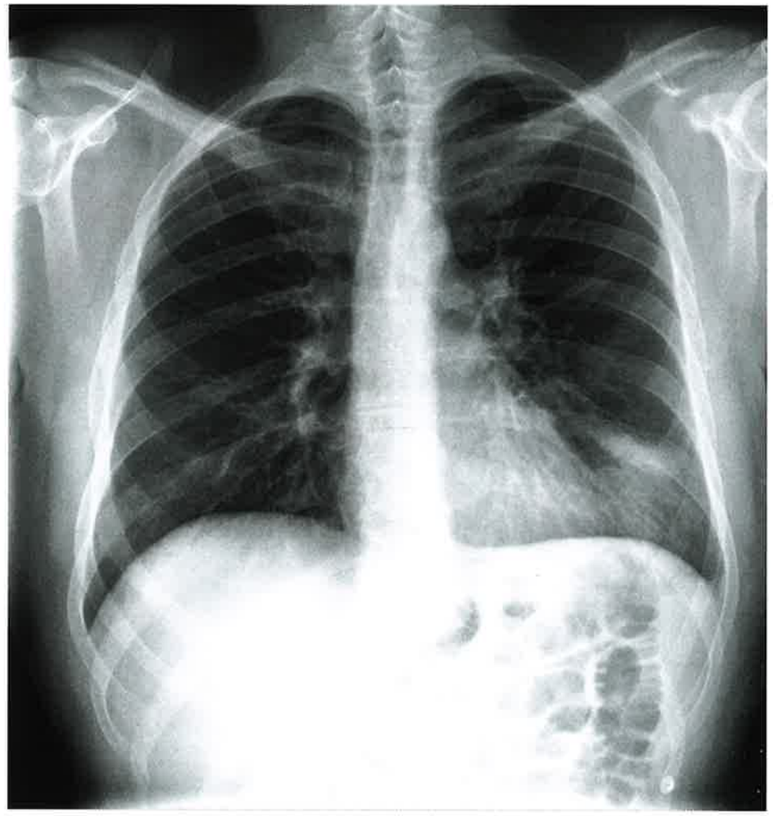
THE LINK BETWEEN UNTREATED OR POORLY CONTROLLED ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

By Karen Little RN – Asthma Nurse Educator

Chronic obstructive pulmonary disease (COPD) is a slowly progressive disease mainly caused by cigarette smoking and set to become the fifth highest cause of death in the world by 2020.[1] It is a chronic inflammatory condition, which progressively gets worse causing narrowing of the airways that is predominantly irreversible. COPD is an overlapping spectrum of disease processes which may manifest itself as a combination of three key pathological processes, all causing different symptoms including chronic bronchitis, emphysema and chronic uncontrolled asthma.[2] In this article, I will be exploring the ramifications of untreated or poorly controlled asthma.



Remodelling of the small airways is a key factor in the development of the irreversible airflow limitation characteristic of COPD. Airway remodelling describes the persistent changes that occur within the structural components of the airways in response to inflammation and occurs in patients with either asthma or COPD.[3] Airways that are red, inflamed and swollen over a long period because of insufficiently controlled or untreated asthma can develop structural changes called fixed airways obstruction. If left unchecked, remodelling (a form of thickening of the sub epithelial basement membrane) of the airways results, which contributes to irreversible airflow obstruction.

Importantly, it needs to be stressed that the inflammatory changes seen in COPD are not the same as those that occur in asthma, and this probably explains the different responses to pharmacotherapy, for example, inhaled corticosteroid (ICS) responses, seen in the two diseases.[4] However, it has also been suggested that airway remodelling in asthmatic patients may be related to the development of COPD symptoms. Including non-reversible airway obstruction and accelerated decline in forced expiratory volume (FEV1) suggesting functional and pathologic overlap between the two diseases.[5]

There is growing evidence regarding the slowing of remodelling with the use of anti-inflammatory drugs in the form of ICS and other treatments, and which can be effective in reducing eosinophilic inflammation.[5] Eosinophilic inflammation of the airways is correlated with the severity of asthma. These cells are likely to play a part in the epithelial damage seen in this disease. Although eosinophilic airway inflammation is usually considered a feature of asthma, it has been demonstrated in large and small airway tissue samples and in 20%–40% of induced sputum samples from patients with stable COPD.

Disease exacerbation in both asthma and COPD can lead to an accelerated decline in lung function. Previous reports have shown an association between severe asthma exacerbation and an accelerated decline in FEV1, to a degree similar to that seen with smoking and COPD. Another important observation was that the decline in FEV1 seen in patients with infrequent exacerbation was similar to that in a population without asthma. These findings suggest that repetitive episodes of exacerbation may result in fixed airflow obstruction in asthma and contribute to the phenotypic overlap between asthma and COPD.[6]

It should be noted, however, that the nature of this association is not yet fully understood, and the correlation between asthma airway remodeling and an increased risk of developing COPD requires further investigation.

COPD is a leading cause of preventable death and hospitalization for Maori. Compared to non-Maori, Maori experience over twice the COPD prevalence, 3.6 times the COPD hospitalizations and 2.7 times the COPD deaths.[7] Asthma is the most common respiratory cause of hospitalization for Maori. There is evidence to suggest that access to preventative health care and differential asthma treatment by ethnicity are factors contributing to asthma inequalities for Maori.[7] More needs to be done to ensure Maori children have the same opportunity as non-Maori to benefit from elements of best practice asthma care, including education, regular asthma reviews, appropriate medication and an asthma management plan.

There is some evidence that effective early introduction of ant-inflammatory treatment in children with asthma improves the prognosis in the sense that the earlier the treatment is started, the greater the improvement in lung function.[8] Many families are unaware that coughing at night may be a sign of asthma. It is important that asthma education and diagnosis is available to all families in New Zealand so that appropriate treatment may be commenced at the earliest opportunity.

As an asthma nurse educator we see poorly controlled and untreated asthma on a daily basis. The reluctance to introduce inhaled corticosteroids is a common feature usually due to misinformation on how these medications work, and understanding the difference between preventers and relievers. Many days are lost from school and with some children these days lost may never be recovered in their education. Compounding this may be the fact that due to coughing at night the child will be extremely tired at school. We can measure the impact of untreated asthma by measuring peak flow. It is not uncommon for the peak flow to increase up to 40% after the administration of Ventolin via a spacer. A person living with uncontrolled asthma may become so accustomed to "running on half empty" that they are not aware of the quality of life that could be experienced if their asthma was well controlled. All of these signs and symptoms are quite apparent to a health professional and with explanation to the family involved. The hidden ongoing ramifications of untreated asthma may only become apparent in later life with decreased lung function and perhaps a diagnosis of COPD.

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Source: Eur Respir J
Risk of pulmonary embolism and deep venous thrombosis in patients with asthma: a nationwide case-control study from Sweden; Zöller B, Pirouzifard M, Memon A, Sundquist J, Sundquist K; European Respiratory Journal 49 (2), (Feb 2017)

Asthma is associated with an increased risk of pulmonary embolism (PE) but little is known about whether asthma is associated with an increased risk of deep venous thrombosis (DVT). The aim in this study was to determine the risk of the first event of PE, DVT or a combination of PE and DVT in patients with asthma. We conducted this nationwide case-control study using data from Swedish nationwide registries. We included 114366 Swedish-born patients with a first hospital diagnosis of PE, 76494 patients with DVT and 6854 patients with both PE and DVT in Sweden between 1981 and 2010. We also included five age-, sex- and education-matched population controls. All previous hospital diagnoses of asthma were identified. Conditional logistic regression was used to compute odds ratios with adjustment for potential confounders. Asthma was associated with an adjusted odds ratio for PE of 1.43 (95% CI 1.37-1.50), for DVT of 1.56 (95% CI 1.47-1.65) and for combined PE and DVT of 1.60 (95% CI 1.32-1.93). Asthma was associated with an increased risk of PE, DVT and combined PE and DVT. Thus, the inflammation conferred by asthma seems to have systemic (and not just local) prothrombotic effects with increased risk of both DVT and PE.

Source: Drugs Aging
Late-Onset Asthma: A Diagnostic and Management Challenge; Ulrik C; Drugs & Aging (Feb 2017)

Late-onset asthma is common, associated with poor outcome, underdiagnosed and undertreated, possibly due to the modifying effect of ageing on disease expression. Although the diagnostic work-up in elderly individuals suspected of having asthma follows the same steps as in younger individuals (case history and spirometry), it is important to acknowledge that elderly individuals are likely to have diminished bronchodilator reversibility and some degree of fixed airflow obstruction. Elderly individuals, therefore, often require further objective tests, including bronchial challenge testing, to objectively confirm asthma. If necessary, a trial of oral or inhaled corticosteroid might be necessary. Asthma can be diagnosed when increased airflow variability is identified in a symptomatic patient, and if the patient does not have a history of exposure, primarily smoking, known to cause chronic obstructive pulmonary disease, the diagnosis is asthma even if the patient does not have fully reversible airflow obstruction. Pharmacological therapy in patients with late-onset asthma follows international guidelines, including treatment with the lowest effective dose of inhaled corticosteroid to minimize the risk of systemic effects. However, most recommendations are based on extrapolation from findings in younger patients. Comorbidities are very common in patients with late-onset asthma and need to be taken into account in the management of the disease. In conclusion, late-onset asthma is poorly recognized and sub-optimally treated, the latter not least because elderly patients are excluded from most randomized controlled trials. Future studies should focus on the development of evidence-based guidelines for diagnosis and the pharmacological therapy of asthma in the elderly, including late-onset asthma.

Source: Intern Med J
Bronchial thermoplasty in severe asthma in Australia; Langton D, Sha J, Ing A, Fielding D, Wood E; Internal Medicine Journal (Jan 2017)

BACKGROUND: Bronchial thermoplasty is an approved bronchoscopic intervention for the treatment of severe asthma. However, limited published experience exists outside of clinical trials regarding patient selection and outcomes achieved. Aims To evaluate the effectiveness and safety of bronchial thermoplasty in patients with severe asthma encountered in clinical practice.
METHODS: This is a retrospective analysis of the first 'real world' data from Australia. The following outcomes were measured prior to, and 6 months following bronchial thermoplasty: Spirometry, Asthma Control Questionnaire-5 (ACQ-5) score, reliever and preventer medication use, and exacerbation history.
RESULTS Twenty patients were treated from June 2014 to December 2015 at three university teaching hospitals. All subjects met the ERS/ATS definition of severe asthma. Mean pre-bronchodilator FEV1 was 62.8 ± 16.6% predicted (range: 33-95%). All patients were being treated with high dose inhaled corticosteroids, long-acting beta2 agonists, and long-acting muscarinic antagonists. Ten patients (50%) were taking maintenance oral prednisolone. Most subjects also required at least one of montelukast (65%), omalizumab (30%), and methotrexate (20%). ACQ-5 improved from 3.6 ± 1.1 at baseline to 1.6 ± 1.2 at 6 months, $p < 0.001$. Short-acting reliever use decreased from a median of 8.0 to 0.25 puffs/day, $p < 0.001$, and exacerbations requiring corticosteroids also significantly reduced. Five of 10 patients completely discontinued maintenance oral corticosteroids. Ten patients with a baseline FEV1 of<60% predicted significantly improved from 49.2 ± 9.6% to 61.8 ± 17.6%, $p < 0.05$. Only two procedures required hospitalisation beyond the planned overnight admission.
CONCLUSION: Bronchial thermoplasty is a safe procedure which can achieve clinical improvement in those with uncontrolled symptoms and severe airflow obstruction.

Source: BMC Pulm Med
Characteristics and longitudinal progression of chronic obstructive pulmonary disease in GOLD B patients; Lawrence P, Kolsum U, Gupta V, Donaldson G, Singh R, Barker B, George L, Webb A, Brookes A, Brightling C, Wedzicha J, Singh D; BMC Pulmonary Medicine 17 (1), 42 (Feb 2017)

BACKGROUND: The characteristics and natural history of GOLD B COPD patients are not well described. The clinical characteristics and natural history of GOLD B patients over 1 year in a multicentre cohort of COPD patients in the COPDMAP study were assessed. We aimed to identify the subgroup of patients who progressed to GOLD D (unstable GOLD B patients) and identify characteristics associated with progression.
METHODS: Three hundred seventy COPD patients were assessed at baseline and 12 months thereafter. Demographics, lung function, health status, 6 min walk tests and levels of systemic inflammation were assessed. Students t tests and Mann Whitney-U tests were used.
RESULTS: One hundred seven (28.9%) of patients were categorised as GOLD B at baseline. These GOLD B patients had similar FEV1 to GOLD A patients (66% predicted). More GOLD B patients were current smokers ($p = 0.031$), had chronic

bronchitis (p=0.0003) and cardiovascular comorbidities (p=0.019) compared to GOLD A. At 12 months, 25.3% of GOLD B patients progressed to GOLD D. These patients who progressed (unstable patients) had worse health status and symptoms (SGRQ-C Total, 50.0 v 41.1, p=0.019 and CAT, 21.0 v 14.0, p=0.006) and lower FEV1 (60% v 69% p=0.014) at baseline compared to stable patients who remained in GOLD B.

CONCLUSIONS: Unstable GOLD B patients who progressed to GOLD D had a higher level of symptoms at baseline. A high symptom burden may predict an increased likelihood of disease progression in GOLD B patients.

Source: Chest

The impact of statin use on all-cause mortality in patients with COPD: a population based cohort study; Raymakers A, Sadatsafavi M, Sin D, De Vera M, Lynd L; Chest (Feb 2017)

BACKGROUND: Patients with chronic obstructive disease (COPD) are often prescribed statins due to the increased prevalence of cardiovascular disease (CVD). There is considerable debate about the benefits conferred by statins in patients with COPD. This study evaluates the association of statin use with all-cause and pulmonary-related mortality in COPD patients.

METHODS: This study uses population-based administrative data for the province of British Columbia, Canada. A cohort of COPD patients was identified based on individual patients' prescription records. Statin exposure was ascertained in the 1-year period after COPD 'diagnosis'. The primary and secondary outcomes, all-cause and pulmonary-related mortality, respectively, were evaluated in the 1-year period thereafter using multivariate Cox proportional hazards models and several definitions of medication exposure.

RESULTS: There were 39,678 COPD patients that met the study inclusion criteria. Of these, 7,775 (19.6%) had received at least one statin dispensed in the exposure ascertainment window. There were 1446 all-cause deaths recorded within the cohort in the 1-year period after exposure ascertainment. In multivariate analysis, the estimated hazard ratio for statin exposure was 0.79 (95% CI: 0.67-0.92, p=0.0016) suggesting a 21% reduction in the risk from statin use on all-cause mortality. For pulmonary-related mortality, there was also a considerable reduction in the risk all-cause mortality from statin use (HR: 0.55, 95: CI: 0.32-0.93, p=0.02454). These results were robust to different specifications of the exposure ascertainment window.

CONCLUSIONS: This study shows that statin use in a population-based cohort of COPD patients may confer benefits in terms of reduced pulmonary-related and all-cause mortality.

Source: COPD

Outcomes of Pulmonary Rehabilitation for COPD in Older Patients: A Comparative Study; Bennett D, Bowen B, McCarthy P, Subramaniam A, O'Connor M, Henry M; COPD 1-6 (Dec 2016)

Pulmonary rehabilitation (PR) is established as an effective intervention in optimising function and quality of life in patients with chronic obstructive pulmonary disease (COPD). However, there are very limited data on the effectiveness of PR in older patients with COPD. We reviewed all patients attending an 8-week outpatient programme. Patients were divided into two groups; Group A (n = 202), below 70 years, and Group B (n = 122), above 70 years of age. Outcomes in both patient subgroups were compared using FEV(1), Incremental Shuttle Walk Test (ISWT), Endurance Shuttle Walk Test (ESWT), Grip Strength, St. George's Respiratory Questionnaire (SGRQ), Hospital Anxiety and Depression Score (HADS), and COPD Assessment Test (CAT) score. Statistical analysis was conducted using Mann-Whitney non-parametric testing and chi-square testing for comparison of clinically relevant improvements between groups. There was no significant difference in PR outcomes between Group A and Group B using absolute values. Mean changes in ISWT for Groups A and B 39.7 m vs. 32.8 m (p = 0.63), respectively, SGRQ -2.5 vs. -2.8 (p = 0.95), HADS anxiety score -0.83 vs. -0.57 (p = 0.43) and HADS depression score -0.69 vs. -0.39 (p = 0.48), respectively. There was no difference in the proportion of patients who achieved the minimal clinically significant improvement in Group A versus Group B for parameters ISWT (38.6% vs 42.7%), SGRQ (27.8% vs 21.3%), and HADS total score (20.5% vs 28.1%). These data suggest that benefits of PR in COPD are not age dependent. Age should not be a barrier to enrolling patients with COPD in PR programmes.

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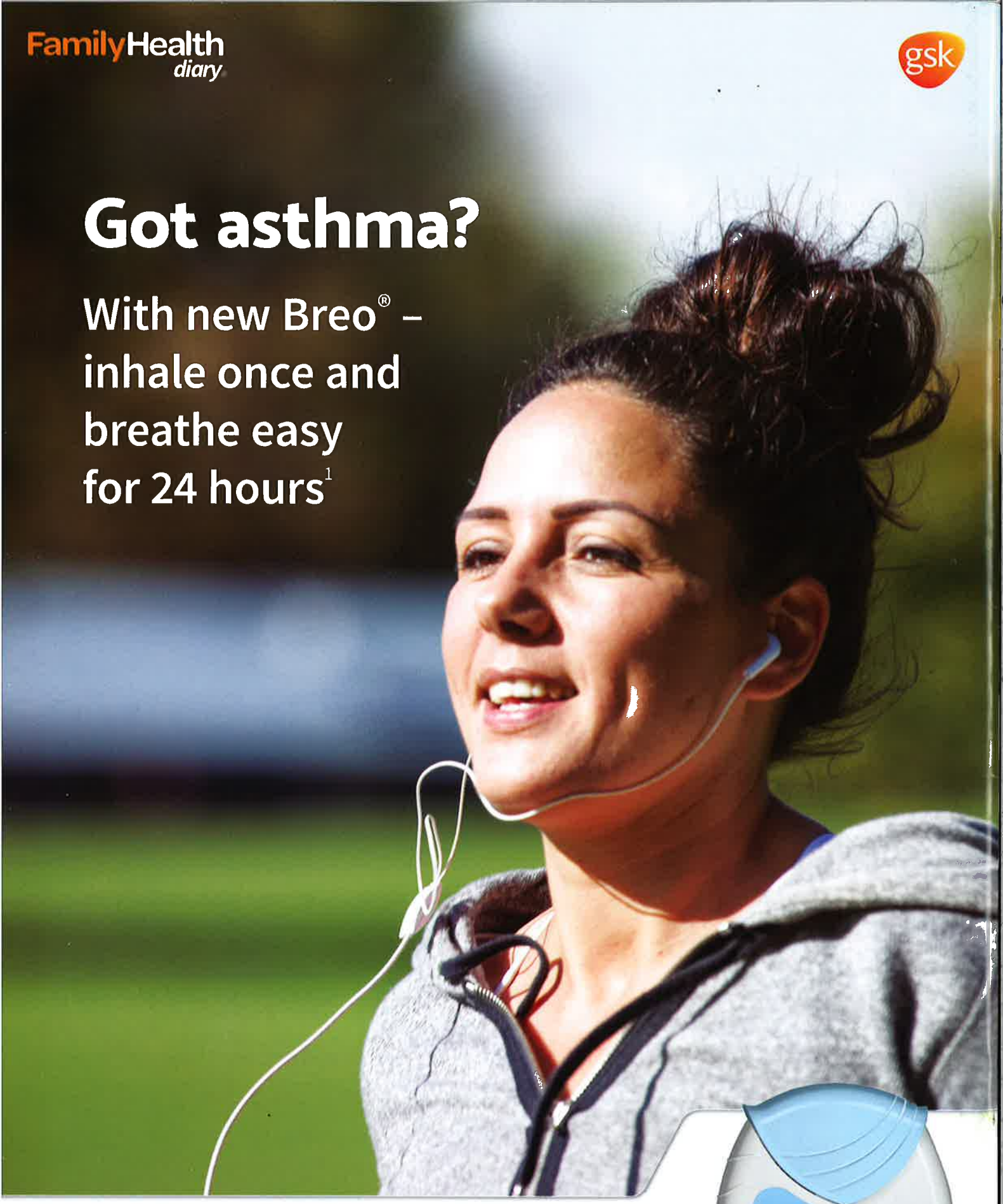

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1. Bleecker ER et al. Fluticasone furoate-vilanterol 100/25 mcg compared with fluticasone furoate 100 mcg in asthma: a randomized trial. J Allergy Clin Immunol Pract. 2014;2(5):553-61. ***Breo® Ellipta®*** (fluticasone furoate/vilanterol trifenatate inhaler 100/25mcg per inhalation) is a **Prescription Medicine**. ***Breo Ellipta*** is used for the regular treatment of asthma (12 years of age and older) and for adults with Chronic Obstructive Pulmonary Disease (COPD). ***Breo Ellipta 100/25mcg*** **is a fully funded medicine; Breo Ellipta 200/25mcg is a private purchase medicine (dose indicated in asthma only). Use strictly as directed. Breo Ellipta is not for relief of acute symptoms. Always carry your reliever inhaler. Do not discontinue Breo Ellipta abruptly. This medicine has risks and benefits. Tell your doctor:** If you are taking any other medicines or herbal remedies, you have liver disease, heart problems, high blood pressure, pulmonary tuberculosis (TB), infection of the lungs (pneumonia) or weak bones (oesteoporosis). **Side Effects:** headache, common cold, oral thrush, infection of the nose sinuses or throat, flu (influenza), pain and irritation at the back of the mouth and throat, inflammation of the sinuses, pneumonia (in patients with COPD) and weakening of the bones, leading to fractures. **If symptoms continue or you have side effects, see your doctor, pharmacist or health care professional.** For more information including additional side effects, see Breo Ellipta Consumer Medicine Information at www.medsafe.govt.nz. Normal doctor's office visit fees apply. Ask your doctor if Breo Ellipta is right for you. Breo and Ellipta are registered trade marks of the GlaxoSmithKline group of companies. Breo Ellipta was developed in collaboration with Theravance Inc. Marketed by GlaxoSmithKline NZ Limited, Auckland. **Adverse events involving GlaxoSmithKline products should be reported to GSK Medical Information on 0800 808 500.** ***TAPS NA8441/16JU/FFT/0023/16***