



Second Wind

NEWSLETTER

MARCH

2001

PERF, The Pulmonary Education and Research Foundation, is a small but vigorous non-profit foundation. We are dedicated to providing help for those with chronic respiratory disease through education, research, and information. We hope this newsletter is worthy of our efforts.

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Key Words: Shortness of breath, determining oxygen needs, panic, breathing techniques, PLB, Rally for Research, polycythemia, asthma.

We would like to thank the many readers who updated their subscriptions to the Second Wind. A few of you paid your subscriptions again even though you had made other donations in the past year. We appreciate this! These extra funds will help us in our policy of sending the newsletter to all who benefit by it, even those without funds. On their behalf and ours, we thank you. We especially appreciate the generosity of *Dr. Bill Dasher, Doris Dunn, Ida Wilson, Freda Standefort, Le Purrer, William Mac Indoe, E.A. Metcalf, Gerald Sandman, Harvey Wright, Bill*

Purдум, George Haramoto and Patricia Dunigan. ↑ ↑ ↑

Memorial donations were made to PERF by Nick Boudas, Wm. Giannopoulos, Pat Helfrich, Georgia Busse, Peter Zak, Apple Vacations Marketing and Debra Mackey in memory of Robert McDonald, and by Marge & Ralph Baxter in memory of Virginia Brandon, Barbara White in memory of Harry Holcomb, Valley Insurances in memory of Theda Yoemanand, and Ann Wentink in memory of Ardis Walin.



The **Freedom from Smoking** program is now on line at www.lungusa.com. If you know

someone who wants to quit smoking but can't find a convenient program, this may possibly be an answer to their problem.

Marilynn feels that she gets short of breath after eating chocolate and wants to know if anyone else has this problem. Wellllll, depends on how much chocolate you are eating, Marilyn. Eating a large meal, or half a dozen brownies, fills your stomach and causes the mechanical problem of your stomach getting in the way of your expanded lungs and flattened diaphragm. This can lead to shortness of breath.

Also, blood flow is directed to the stomach to digest a meal, leaving less oxygen rich blood for the rest of the body. This is why you are warned not to swim or exercise right after a meal. Chocolate has a high fat content which might take it longer to digest.

That said, chocolate *also* contains some theophylline and *theoretically* might even make your breathing *easier*! We are not suggesting, however, that our chocoholic readers replace their inhalers with chocolate! But, each person is unique. Our Easter wish for you, whether you succumb to a piece of chocolate from the Easter basket or indulge in a whole box of that yummy stuff, is easy guilt free breathing.

Marjorie is also complaining of shortness of breath is. Responding to our last newsletter, she wrote that it is difficult for her to stay off her concentrator for 5 or 10 minutes, let alone an hour, which could occur during a California power outage.

We sympathize with you, Marjorie, and agree that you shouldn't have to endure the stress of potential blackouts. But may we add a few comments or suggestions that might be of help?

First of all, everyone dependent on an oxygen concentrator should have at least one back-up e-cylinder that can be used if the power goes out, as well as for trips outside of the home. In this current climate of electrical uncertainty you should insist upon more than one back-up cylinders. Don't be afraid to speak up if you have a home care company that is reluctant to provide this service. If you have a problem, give us a call and we will try to help you.

That being said, do you remember how the doctor first determined that you needed oxygen? Your blood oxygen level probably had been slowly decreasing for months. How did your doctor decide that you needed oxygen? There are only two accepted methods of determining *if* you need oxygen and *how much* you need.

One method is arterial blood gases drawn with a needle from the artery, usually in the wrist, and the other method is oximetry testing done with a clip on your finger. In order for these tests to be accurate, you should be off all oxygen for 20 minutes before these measurements are taken. Even after you have once had oxygen prescribed these tests may be repeated, sometimes in 3 months, and sometimes annually.

If that amount of time off of oxygen frightens you, one of the things that might ease your distress is to ask to be on an oximeter while you are waiting to be put back on oxygen. You might ask your oxygen supplier or doctor's office to try that now rather than waiting until the next time you are retested. It might reassure you about your ability to survive a power outage. Would it surprise you to see that your oxygen level probably will remain in an acceptable range, above 88%, while you are quietly sitting? In fact, many people may find that their oxygen levels remain much *higher* than that.

If you are distressed, or start to panic when off of oxygen for such a short time, look at your breathing pattern. ***Is your breathing slow and relaxed?*** By slow, we mean that it probably should not be more than 16 breaths a minute if you are sitting in a chair. Slower is better. If your breathing is up to 30 or 40 breaths a minute you will most likely feel short

of breath. *You are beginning to panic.*

Yes, you DO have some control over your breathing! Your respiratory system is unique in many ways. It is the *only* system of the body that is automatic (that is, your body will breathe for you if you are unconscious, or sleeping, or not thinking about it) yet you can easily choose to control your own breathing pattern. You CAN choose to breathe quickly. Try it now. You CAN choose to breathe very slowly. Try that now. You can also even hold your breath for a short time. **You DO have a great deal of control over your breathing, and you can use that control, that power, to help yourself!**

As you sit there with slow, relaxed breathing, notice your shoulders. Are they tense, and up near your ears? Relax them! Let your shoulder drop and relax as your breathing becomes slow and relaxed.

You also need to be sure that you are **breathing out two or three times longer than you breathe in.** This is very important! Why? Let me explain. Lungs damaged by COPD lose much of their elasticity. It is difficult to get all the air out of your lungs and you now have to work at it. If you think you work harder at breathing than some of your friends and relatives, you are absolutely right. There may be a 17 fold increase in the work of breathing because of this loss of elasticity and

the work of getting air out of the lungs. Your lungs used to be like a balloon. You worked to get air into it, but when you allowed air to escape, like a balloon, it flowed out without effort. Now your lungs, if you have severe COPD, can be more likened to a paper bag. If you blow into a paper bag, the air stays in there. You have to *squeeze* the bag flat to get the air out of it.

How do we know if this is your problem? Do you remember taking a pulmonary function test, or having spirometry done? Do you remember the technician telling you to breathe out, out, out, out, *out*? This is how we measure **your FEV₁, the forced expiratory volume of air that you can breathe out in one second. It is one way of telling how much damage, you have.** A normal FEV₁ is between 80 to 100% of the level predicted for someone of your height, age and sex. An FEV₁ below 80% is abnormal. Many of our readers may have an FEV₁ of only 30%, or 20%, or even lower. That means you can only force out 30%, or 20%, of the air in one second that someone with healthy lungs can. If you don't get that air out, there isn't room for fresh, oxygenated air to get in, is there? Can you now see why it is so very important for you to concentrate on breathing air out three times longer than you breathe in? But, in order to do so **you *must* breathe much slower if you have COPD.** Can you understand why gulping air in,

breathing air as fast as you can, does nothing to help your shortness of breath?. It actually makes your shortness of breath worse, doesn't it? You *must* get that trapped air out!

Another problem that develops with COPD is that the residual volume of air in the lungs (the volume of air left in the lungs after you breathe out maximally) increases by 50%, 100%, or even 200% of normal. This can also be measured in your pulmonary function laboratory. Some residual air in your lungs is normal. Look at the balloon again for a simplified explanation. The "empty" balloon still has some air in it to keep it from totally collapsing and having the sides stick together. However, if you have 2 or 3 times as much residual air left in your lungs it leaves less room for freshly oxygenated air.

If you can breathe with your diaphragm, instead of lifting your chest up and down, that also will help. Would you like to give it a try? Start by lying down. Put one hand on your upper chest, and the other hand on your stomach. When you breathe in, your stomach area will pooch out. As you exhale, your stomach area will tighten to *squeeze* the air out of your lungs. *Your chest should not move at all.* You can see why this is often called "belly breathing". Do this for just a few minutes at a time to start with. Don't worry if you can't get it right away. Learning diaphragmatic breathing can take

weeks of practice for some people, and may be especially difficult for those with very severe emphysema.

Now, where are we? You are sitting relaxed in your chair watching the oximeter show that your oxygen level is quite satisfactory. Your breathing is slow and relaxed. You are concentrating on breathing out, rather than in, and are breathing out three times longer that you are breathing in. Your shoulders are dropped and relaxed. You may even be able to do diaphragmatic breathing. Is there anything else that you can do to help yourself? Yes. You can do pursed lips breathing.

Done properly, pursed lips breathing (PLB) can sometimes raise your oxygen level just as high as it can be raised with the 2 lpm (liters per minute) of oxygen that you may be on. That's a pretty neat trick, isn't it? Learn correct pursed lips breathing and avoid panic.

Anyone who has gone through a good pulmonary rehab program should have this down pat. But suppose you don't have a good program available in your area. Is all lost? Not at all. Pursed lips breathing is so natural that some patients come into rehab doing it all on their own without ever even having heard about it. It is easier to learn if you get a little coaching from a health care professional, or biofeedback from an oximeter reading, but it certainly isn't

necessary. Are you ready to practice? Here we go.

Sit down in a nice comfortable chair and *relax*. This is something that will make you feel better!. Relax your shoulders and let them droop. Relax your neck and face muscles. Concentrate on breathing out. **You want to breathe out about three times as long as you breathe in.** In order to accomplish that you will have to slow your breathing way down, to maybe 12 breaths a minute. Breathe *in* through your nose to warm, filter and moisturize the air. Now breathe *out* through pursed lips. You don't have to really pucker up, just make sure you have a narrowed opening between your lips that you gently exhale the air through. If you put your hand in front of your lips you will feel a focused stream of air.

DO NOT FORCE THE AIR OUT in loud puffs. If you can hear yourself loudly breathing you are working too hard at this and defeating the purpose. If you are an overachieving Type A personality, please remember that this is one time when more is not better! Breathing too hard will actually LOWER your oxygen level. If this type of breathing doesn't feel comfortable, stop what you are doing, relax and try again, breathing *easier*. The whole aim of this technique is to help you relax and feel better. We've heard stories from spouses about patients doing PLP in their sleep! How relaxed can you get! Keep that

picture in your mind: PLB is so easy that you can do it in your sleep. Or when you have to put up with a power outage. Hope this helps, let us know, and good luck!

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Earmarked for the Chair in the Rehabilitative Sciences, we're funds received from William Gustafson, Jack Stevens and Barbara White who made her donation for the Chair in honor of Mary Burns. Mary sends her very humble thanks.

And we hear from Dr. Tom Petty, who writes to say, "Join the Long Beach 500 race now! We are fueling up to race to the finish line of the Long Beach 500. Don't take your foot off the accelerator! We need your support to reach our goal. We must establish the Rehabilitation Chair at Harbor to continue to learn more about dealing with COPD and related disorders. Get out your check book and send in your donation today. Help us Peak Out in our drive!"

The names of all contributors to this 500 club will be inscribed on a plaque to be hung in the Rehabilitation Center. They also will receive a certificate of participation suitable for framing, if they so wish.

The Long Beach 500 Club is off to a good start. Dr. Tom Petty, Dr. & Mrs. Richard Casaburi, Mary

***Burns, and The Women's Fellowship of the Neighborhood Church* have each donated \$500 and become members of the Long Beach 500 Club. Dr. Petty says "Let's all rally for the Rally!"**

The Respiratory Rally for Research will be held at Long Beach Memorial Medical Center on June 22nd. Speakers will include Dr. Tom Petty, Dr. Rich Casaburi, Dr. Paul Selecky and Dr. Brian Tiep, all as famous as stand-up comedians as they are for their research. Mark the date on your calendar *now* and plan on joining us!

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Jim writes that he has **polycythemia** from lung damage and low oxygen levels. He wants to know if improving his breathing techniques will help his polycythemia because he would rather not use oxygen. Good question. We have just spent pages talking about how good breathing techniques can keep you off oxygen for a few hours. Does that also apply to you?

What is polycythemia and what causes it? *Polycythemia is an excess of red blood cells flowing through your body.* When you have chronically low oxygen levels in your body it stimulates the bone marrow to produce more red blood cells. Why? Because red blood cells carry the oxygen from your lungs to the cells of your body. Since your oxygen

level is low, the body tries to compensate by increasing the red blood cells. If you don't start using oxygen to stop this process the blood becomes too "thick" and you could even develop a stroke. In the old days, before we had oxygen, doctors bled patients or even used leeches to remove excess blood. Yuk. Oxygen is much more effective and less messy!

You are right in that certain breathing techniques such as pursed lip breathing, if done properly, can raise the level of oxygen while being done. However, *this is not a long term substitute for supplemental oxygen.* Your problem is not improper breathing, it is damaged lungs unable to properly absorb the oxygen that you breathe in. Do you know what the oxygen level in your blood is? If your blood gas shows a PO₂ of 55 mmHg (or even 60 mmHg with polycythemia), or your oxygen saturation goes to 89% or less with the oximeter, you should be on supplemental oxygen.

Sometimes people with normal levels of oxygen during the day have obstructive sleep apnea, causing a very low level of oxygen at night. This also needs to be treated and requires special equipment to wear while sleeping, as well as supplemental oxygen.

Low oxygen levels over a long period of time can cause fatigue, depression, lack of energy and difficulty concentrating in addition to

your polycythemia. Low oxygen also makes your heart work harder. It can even lower your IQ! Oxygen is a medication and can only be prescribed in specific amounts by your physician. If your doctor has recommended oxygen for you, you should not hesitate to start using it. In a few weeks we promise that you will feel much better!



The recent annual meeting of the **California Society of Pulmonary Rehabilitation** included a lecture on Asthma by **Dr. Rajeev Venkayya**, who is Assistant Professor of Medicine at San Francisco General Hospital. We wish we could send you with an video cassette of this talk, complete with all the humor, but we'll have to be content with just a few of the highlights that you might find interesting.

Did you know that more than 12 million Americans have asthma, and over half of these over the age of 40? The incidence is rising and so is the mortality level, now at 5,000 deaths a year. What is so tragic, is that these are deaths that should not happen.

Asthma is characterized by reversible airway obstruction, airway inflammation, and increased airway responsiveness. The obstruction is measured by spirometry, and the FEV₁, the forced volume of air you can breathe out of your lungs in one second. But unlike COPD, the FEV₁ changes greatly

according to the amount of asthma symptoms at the time of testing.

Some common allergic triggers are animal danders, dust mites, molds, cockroaches and pollens. Three to 10% of asthmatics are **aspirin-sensitive**. That means that their asthma gets worse if they take aspirin or other NSAIDs. This type of sensitivity is often associated with nasal polyps.

In **cough-variant asthma**, the only symptom may be a cough, though this *may* progress to other manifestations. If the cough goes away with a trial of a bronchodilator, such as Albuterol, you've made the diagnosis.

Occupational asthma occurs in response to a substance(s) found in the workplace. This often causes a late asthmatic response, which may manifest itself hours after leaving work. High risk industries include working with platinum salts, gum acacia, and isocyanates, as well as animal handlers and bakers.

Exercise induced bronchospasm often occurs perhaps 5 or 10 minutes after stopping exercise and may be caused by drying of the airway mucosa, which results from rapid breathing of cool, dry air.

In all forms of asthma, airway inflammation causes airway changes which can result in permanent scarring if this inflation is left untreated. Incidentally, if you need to get up at night with your asthma more than 2 times a month you may be a candidate for better medications. *If you have nighttime symptoms more than once a week, have daily*

symptoms, need daily use of short acting bronchodilators, and have exacerbations 2 times or more a week, you probably need to be on inhaled corticosteroids.

There is an early and late asthmatic response to allergens. The **early response** may occur almost immediately, in a matter of minutes. The **late phase** may occur 6 or 7 or even 8 hours after exposure.

Drug therapy for asthma includes bronchodilators: short acting beta-agonists, such as **Albuterol**, long acting beta-agonists used only twice a day, such as **Salmeterol** and anticholinergics, such as **Ipratropium**. Anti-inflammatory medications include inhaled and systemic corticosteroids, **Cromolyn** and **Nedocromil**, and leukotriene modifiers. **Theophylline** is rarely used these days.

Inhaled corticosteroids, are the most effective medications for the control of airway inflammation. They are much safer than prednisone (taken by mouth) for long term use and are considered safe in the pediatric population.

There is a *lot* more to say about asthma medications, but we can continue with that next month's April edition of the Second Wind, if you are interested.

Until then, stay well and

Remember to Rally for Research!



If you wish to receive the Second Wind in the mail we request \$20 a year to cover our expenses. Check may be mailed to PERF, PO Box 1177, Lomita, CA 90717.