The
Pulmonary Paper

Dedicated to Respiratory Health Care
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Staying Cool in Summer's Heat



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We are hiding The Pulmonary Paper logo on our front cover. Can you find it?



Summer Heat Quiz

1. What type of clothes should you wear to stay cool?
   a. Brightly colored clothing
   b. Tight fitting clothing
   c. Loose fitting clothing
   d. None of the above

2. What is the best surface to walk on to keep cool in the summer?
   a. Concrete
   b. Dirt paths
   c. Pavement
   d. All of the above

3. Which of the following foods can help you stay hydrated the most?
   a. Tomato
   b. Cucumber
   c. Pear
   d. All of the above

4. Applying ice to which of these spots can help you stay cool?
   a. Nose
   b. Ears
   c. Wrists
   d. Toes

5. Adding which of these to a glass of water can help you feel cool?
   a. Lemon
   b. Sugar
   c. Fresh mint
   d. Strawberries

6. True or False? Drinking a super cold drink can keep your body cool for up to an hour.

7. True or False? Stay away from salty foods to prevent heat exhaustion.

8. Why is it especially good to eat watermelon, papaya and celery to stay cool on a hot day?
   a. They are rich in antioxidants.
   b. They have high amounts of Vitamin C.
   c. They contain potassium and sodium.
   d. All of the above.

Answers to "Pulse Oximeter Quiz" in the last newsletter

1. **What level must your oxygen saturation read on your oximeter for five minutes in order to qualify for Medicare coverage?** 88% or below.
2. **What things can affect your pulse oximeter reading?** All of the above: dark nail polish, cold hands or poor circulation, and bright light in the room.
3. **Nonin (www.nonin.com) was the first company to market pulse oximeters to the home oxygen user. What is the significance of the name "Nonin"?** It stands for non-invasive. You no longer need your blood drawn to get your oxygen saturation reading.
4. **True or False? You can also tell what your carbon dioxide level is when using a pulse oximeter.** False.



Editor's Note

"It's a smile,
it's a kiss,
it's a sip of wine …
it's summertime!"
— Kenny Chesney

You never know what life has in store for you. Going to Alaska with the Sea Puffers, you would think we would find ourselves in cool weather. We wore sunglasses and short sleeves most of the trip! The advice to dress in layers that you can peel off paid off.

We have to be prepared in layers to deal with chronic lung disease. Keeping cool and keeping your cool are equally important. Work to be your own advocate by learning and staying involved in your treatment course and having the extra tools to use. Your oximeter may tell you to increase your oxygen while walking the dog. Take that layer off when you are sitting down watching television. Knowing you have a rescue inhaler available, when you find yourself in times of trouble, will help you remain calm, cool and collected! Attending a pulmonary rehabilitation program or monthly support group gives you a layer of very valuable social contact.

When you have the layers you need, you will also have the confidence to stay cool in every season!



(L-r): The Good Time Girls – Kathy, Debbie, Peggy and Elaine – went to Alaska to escape the summer heat!



Joan and Mark Helm kept cool in front of a glacier!

Tips to Help You Stay Cool in Any Heat Wave!

1. Alter your pattern of outdoor exercise to take advantage of cooler times (early morning or late evening).
2. Fill a spray bottle with water and keep it in the refrigerator for a quick refreshing spray to your face after being outdoors. A small battery-powered fan which attaches to a water bottle will spray a refreshing, cooling mist.
3. Try storing lotions or cosmetic toners in the refrigerator to use on hot, overtired feet.
4. Combat dehydration by drinking plenty of water along with sports drinks or other sources of electrolytes.
5. Instead of hot foods, try frequent small meals or snacks containing cold fruit.
6. Fans can help circulate air and make you feel cooler even in an air-conditioned house.
7. If you don't have air conditioning, arrange to spend at least parts of the day in a shopping mall, public library, movie theater or other public space that is cool.
8. Just because a drink is cold doesn't mean it will keep you cool. Compensate for the dehydrating effects of alcohol by alternating a glass of water with each alcoholic beverage.





Dr. Michael Bauer

Calling Dr. Bauer …

Those with chronic medical conditions often ask, "Is there something 'new' to treat my illness"? I would like to tell you about a new therapy available to some people with chronic moderate-to-severe asthma who do not respond to standard inhaler options.

Some people with allergy-based asthma have high circulating levels of a blood protein called **Immunoglobulin E** (IgE) and/or high amounts of white blood cells named **eosinophils**. When elevated, these indicate asthma may be out of control. These blood components cause the release of other proteins that trigger airway inflammation and obstruction (wheezing) plus all sorts of typical allergy symptoms.

A new class of medication called "biologic therapies" has been developed in the past decade that can effectively block the release of chemical triggers of inflammation. Biologics are taken with control medications to stop underlying biological responses which cause inflammation in the lungs. This therapy is an injection usually given about every two to four weeks. It typically takes several weeks/months to provide its benefit and needs to be given on a long term basis. When effective, the result is better asthma control, i.e., fewer exacerbations, improved daily symptoms and less need for oral steroids.

Xolair and Nucala are the brand names of the medications available for the past few years. Additional but very similar biologics, Fasenra and Dupixent, are also available. Side effects are generally minimal and well tolerated.

Questions for Dr. Bauer? You may write to him at The Pulmonary Paper, PO Box 4275, Ormond Beach, FL 32175-4275 or by email at info@pulmonarypaper.org.

As you might imagine, all these medications are VERY expensive – without insurance it can cost anywhere between $1,000 to $3,000 per month. In my experience, most insurance carriers will cover the cost because of expected improved asthma control.

If you have difficult-to-manage asthma and think you might "fit the profile", ask your health care provider whether you might be a candidate for a biologic therapy.

The FDA's Arthritis Advisory Committee supports Ofev as a therapy for systemic sclerosis-associated interstitial lung disease (SSc-ILD), according to the Agency and manufacturer Boehringer Ingelheim. Currently marketed to treat idiopathic pulmonary fibrosis (IPF), nintedanib would become the first drug approved for SSc-ILD, a condition with few other options for treatment. SSc-ILD is the leading cause of death in systemic sclerosis, also known as scleroderma, which affects multiple organ systems. About one in four people with SSc develops lung disease within three years of diagnosis. A study in the journal *PLOS One*, also found Ofev may be of benefit to those with Pulmonary Arterial Hypertension, by preventing cells of blood vessel walls from changing.

Fibrosis File



A recent study found that nearly one-third of people with idiopathic pulmonary fibrosis (IPF) were malnourished. According to Alana Kessler, MS, RD, a registered dietitian and nutritionist, the following guidelines are recommended for people with IPF:

- Maximize antioxidant intake: This helps with combating free radicals the body emits. Great sources include all types of leafy greens, sweet potatoes, broccoli and other cruciferous veggies, carrots, tomatoes, squash, garlic, herbs and spices, citrus, mangoes, cherries, melon, all types of berries, cocoa, green tea, and sea vegetables.
- Lean protein such as fish, grass-fed meat, and poultry are best. It's important to ensure there is minimal chemical interference with the food as these substances can wreak havoc on an already compromised immune system.
- Omega 3 fatty acids from salmon, sardines, flax and hemp should be included.
- Probiotic foods such as cultured vegetables and yogurt are also recommended.
- Hydration is key: Water, vegetable juices, and herbal tea infusions are great. Good options are licorice root and holy basil.
- Avoid refined and processed foods, including fried foods, fast foods, and those made with refined grains, added sugar and hydrogenated fats.
- For GERD, include bone broths, which provide amino acids, minerals, and electrolytes for hydration.
- Apple cider vinegar can also help with reflux symptoms.
- Reduce or eliminate foods containing arachidonic acids, found in shellfish, meat, and egg yolks, which can trigger asthma. Avoid foods that produce mucus, including dairy products (especially ice cream), wheat, corn, cold and raw foods, watermelon, bananas, salty foods, soda, and other sweet foods containing simple processed sugars.

At the end of the day, the quality of the food you eat greatly influences the ability of the body to get oxygen into the blood and throughout the body. When this is prioritized, there is a marked decrease in fatigue and shortness of breath. A diet rich in lean protein, phytonutrients, and Omega 3 fatty acids is a key support anchor in the management of pulmonary fibrosis.

Less than five percent of the U.S. population participates in clinical trials, yet 77 percent say they would participate if recommended to do so by their doctor. Clinical trials are at the heart of medical advances and they are the only path to developing new medications for diseases like IPF. Without your participation, researchers cannot test new therapies, and the availability of new drugs slows down. By joining monARC's Patient Research Network, you will receive a free consolidated and digitized version of your medical record which makes it easier to have informed conversations with your doctor and connect to clinical trials. To register and for more information visit *https://prn.monarcbio.com/join* or call 1-888-550-3078 ext 101.

As many as one in four people with IPF may have the illness as a result of inhaling vapors, gas, dust or fumes at work, according to an official statement by the American Thoracic Society and the European Respiratory Society. These findings, researchers say, call for policy makers to take serious measures to provide protection for workers around the globe who are exposed to recognized hazards.



Mark Mangus, RRT
EFFORTS Board

Ask Mark …

Yet once again, we hear the story of a lady using oxygen, who was breathless and in extreme distress and whose lips were blue from severe lack of oxygen (hypoxia). Understand that in order for hypoxia to cause blue lips, your saturation has to be around or below 80 percent. When asked why she hadn't increased her oxygen flow (her portable oxygen system was capable of delivering more oxygen than the setting of 2 that was on), she declared that her doctor and supplier had scolded her not to increase her oxygen or it would cause her to stop breathing from a build-up of carbon dioxide.

Once again, the "Hypoxic Drive" theory developed in the 1950s, was taught to an oxygen user, who then went around with dangerously low oxygen levels, fearful of increasing her oxygen flow. I would like to try to put a sensible perspective on this practice once and for all and to help oxygen users understand what they should know and practice themselves. Using adequate oxygen will not cause people who do not retain carbon dioxide to start to retain it.



The drive to breathe in people who do retain carbon dioxide normally, who are stable and functioning and able to engage in their normal daily activities, will not be suppressed by keeping their oxygen saturation in the 90 percent to 94 percent range – the recommended range by many current guidelines. The only documented cases in the literature attributed to using too much oxygen are all confined to those who presented to the Emergency Department with acute respiratory failure because of an exacerbation of their disease. Their condition was arguably driven by the infection or other reason that caused the exacerbation, not the oxygen level being used.

While using enough oxygen to maintain saturation in the 90 percent to 94 percent range has been shown to increase carbon dioxide levels in people who have COPD and who also retain carbon dioxide, it has been repeatedly shown in any study to be short lived in those who are in a stable condition. Further, it has never been shown to cause someone to stop breathing in any study. The recommendation in guidelines by the American Thoracic Society and American College of Chest Physicians is that it is more important to ensure adequate oxygenation than to withhold oxygen for fear of what 'could' happen to a person's breathing.

Oxygen users should never be forced to function with low oxygen levels. Adequate and safe oxygenation must be the goal of supplemental oxygen use.

Mark Mangus RRT, BSRC, is a member of the Medical Board of EFFORTS (the online support group, Emphysema Foundation For Our Right To Survive, www.emphysema. net). He generously donates his time to answer members' questions.

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Ryan Diesem

The Ryan Report

Home Oxygen Guru – The HO_2G Pen

Oxygen, Activity and Your Health

I **strongly encourage** all oxygen users to be as active as possible. Activity is incredibly important in maintaining your health. Survival rates are shown to be much greater in oxygen users who get regular exercise from walking and other activities. The challenge that so many face today is having the right equipment to provide adequate supplemental oxygen to remain active and conditioned.

Home Oxygen Concentrators

The home oxygen concentrator was developed in the 1970s. The first portable oxygen concentrator (POC), the **AirSep LifeStyle**, came along 30 years later. It had a battery life of about 45 minutes and can still be found for sale on the internet today.

Concentrators draw in room air which is then forced through a sieve bed composed of silicate granules. These granules absorb and release the nitrogen of the room air and concentrate the oxygen. Oxygen accumulates until the desired purity is reached and it is delivered. Room air contains about 21 percent oxygen, the POC will deliver air that should be at least 90 percent oxygen.

The bigger the sieve beds are, the more oxygen can be delivered. The most important consideration for a POC is its ability to supply adequate supplementary oxygen to meet your needs. Unfortunately, this is not always the POC that is the smallest size.

Product Development and Oxygen Delivery

I most certainly have thought about product development. The biggest drawback, as far as technology goes, is utilizing oxygen separation technology. That technology just isn't as efficient as we'd like it to be, which is why many of the POCs that can deliver continuous flow are over 10 pounds. Until there are significant advancements in that area, as well as less power consumption and more battery life, I don't think we'll see truly lightweight POCs that can meet the needs of most oxygen users.

It is hard enough to understand the differences of the portable oxygen concentrators on the market today but it is very confusing when the same product is sold by different manufacturers under different names. The bottom line, it is the same product, only the name and/or manufacturer labels are different. For example, the **OxyGo** POC *(https://oxygo.life/?oxygo-products=oxygo)* is simply a rebranded **Inogen One G3** POC (*https://www.inogen.com/products/g3-systems/)*.

Liquid oxygen is currently the lightest, most efficient oxygen delivery

Ryan Diesem is Research Manager at Valley Inspired Products, Apple Valley, MN. Contact Ryan at rdiesem@inspiredrc.com with questions or comments.

system, but because of Medicare rules and other issues related to the costs of providing liquid oxygen, it has largely been phased out as an option for most oxygen users. We have gone backwards in the last ten years, and I really hope we can reverse course and start getting liquid systems back in use and available. They are the best options for those with higher flow needs.

The next significant advancement in oxygen delivery will be the implementation of oximetry that is fed directly into the oxygen delivery system, either wired or wirelessly. It will track your oxygenation status and increase or decrease oxygen delivery based on the current readings. For example, if someone is at rest and showing an oxygen saturation of 92 percent or above, the system will not deliver any oxygen at all. If the system sees a sudden decrease to 85 percent, it will rapidly increase delivery to try and overcome the desaturation. This will be an incredible advantage; but even this, if released now, would still be limited by the oxygen delivery systems we currently have.

Oxygen Conserving Devices

I had several readers ask about oxygen conserving devices (OCDs) that are used on tanks of oxygen to conserve flow. They work in much the same way as a pulse dose POC works – delivering the oxygen only on inspiration.

Back in 2007, my company, Valley Inspired Products, published an oxygen conserving device comparison. (You can download it at *http://www.inspiredrc.com/images/documents/OCD2007.pdf*). POCs have rendered most OCDs obsolete.

The **Smart Dose** by DeVilbiss, **Drive/CHAD Bonsai** and **Precision EasyPulse** are the primary devices in use by many durable medical equipment companies that supply your oxygen.



SmartDose



Bonsai Velocity

There is no one right product for all applications of oxygen therapy. The person's needs are the driving factor that should be considered and every person's needs will be very different. Understanding the capabilities of each oxygen device on the market will give users, clinicians, marketers and manufacturers knowledge that can be used to ask the right questions, evaluate the user's needs, and make an informed decision when buying and using oxygen equipment.

How Do You Stay Out of the Hospital When You Have COPD?



1. Know your medications and be able to consistently use the correct technique when taking your inhalers.
2. Self-manage your COPD with specific written care plans to guide you, should symptoms change.
3. Graduate from a Pulmonary Rehabilitation Program – in person or online.
4. See your physician for evaluation visits.
5. Attend a smoking cessation program if you have not already quit.

Sharing the Health!

Dr. Noah Greenspan, Director of the Pulmonary Wellness and Rehabilitation Center in New York, NY, along with our own Mark Mangus RRT and Ryan Diesem (newly graduated Respiratory Therapist) all collaborated on the article *Oxygen Manifesto, Part 2: The Devices*. You may read at this link, *https://copdnewstoday.com/2019/06/19/oxygen-manifesto-part-2-devices-advice-respiratory-specialists/*

Dr. Greenspan also hosted a webinar on "All Things Oxygen" that you may see at *https://vimeo.com/327196321*

Remote and self-monitoring can increase CPAP usage for people with sleep apnea, according to a study presented at American Thoracic Society's Annual Conference. Average adherence to positive airway pressure use is approximately 50 percent. Researchers found significantly higher rates when the devices were connected to the internet where daily usage could be monitored.

Nancy Behrendt of EFFORTS (Emphysema Foundation for Our Right to Survive), shares information on their web site about the location of pulmonary rehabilitation programs across the country. Visit *www.emphysema.net/bindex.asp*

You will also find the latest lung health news, along with many other subjects of concern to people coping with COPD.





Walmart will stop selling tobacco or e-cigarette products to anyone under the age of 21 in the United States. The changes took effect July 1 at all American Walmart and Sam's Club locations. They will also stop selling sweet-flavored e-cigarettes, which have become popular among teenagers.

The policy shift comes after Walmart received a letter from the FDA for not fully prohibiting kids under 18 from buying tobacco products at its stores.

A recent study published in the *American Journal of Respiratory and Critical Care Medicine* raises valid concerns about vaping adding to the growing list of health problems facing those who use e-cigarettes, including popcorn lung, wheezing and nicotine addiction.

The researchers found that e-cigarettes with nicotine hampered mucus clearance so not only are your lungs filling with toxic chemicals when you vape, but it also makes it harder to clear them. The nicotine impairs the lung's ability to raise the secretions, dehydrates airway fluid and creates more viscous phlegm. This "sticky mucus" can get trapped in the lungs, which could leave your lungs more vulnerable to illness and infection.

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1. Burudpakdee C, et al. Pulmonary Therapy 2017;3(1):163–171.
2. Svenningsen S, et al. COPD 2016;13(1):66–74.



Fran and Joy Lynch
Edmonds, WA

My wife has been on 24/7 oxygen for about nine years. We have still managed to take major trips at least twice a year. Most trips have been cruises because of the obvious advantages for people with limited energy and mobility. Traveling with oxygen is more complex and expensive than other traveling, but it's doable and worth it. We think flying is the only way to go. We live in the northwest corner of the United States, so we do a lot of long flights. Here's our two cents.

Airport: When you make your reservation, order a wheelchair and use the airport's "professional pusher", even if it's in your personal chair. Don't be macho. While this service was very spotty a few years ago, it has improved dramatically in the past couple of years. It gets you through Security without waiting in endless lines. If using an airport chair, have them leave it with you while waiting to board so you will have one when the boarding rush begins. You should be boarded first so you can get organized. Also tip those people pushing you!

The Letter: All airlines require their own medical statement for oxygen users. We fill it out and get our doctor to sign it. You will generally not be able to print boarding passes at home, since the airline claims it wants to see the letter. Our experience with airlines has been all over the map. Sometimes, the ticket agent doesn't even want to see it. Other times they act like they are going to give a "second medical opinion". Once we had a gate agent who wanted to look at the statement just as we were boarding the aircraft! Whenever an agent even looks funny at the letter, I say loudly "Is there a problem? Let's call your supervisor" – 100 percent of the time the agent smiles and allows us to continue.

Aircraft Seating: If you can't fly first class, try to book the premium cabin seats. Every bit of room helps. The oxygen user is usually assigned an aisle or window seat, so any companion will end up in the dreaded middle seat. Also try to book direct flights. The extra money spent to do so will save a lot of energy.

Power: Charge your POC battery every chance you get, especially while waiting in the gate area. We pack a small outlet strip in our carry-on. Most airports have upgraded their gate areas to provide lots of outlets, but if they are all taken, you can just share an outlet with somebody. Do not rely on the outlets on the aircraft. They are often insufficient to support a POC charger. It is a pain to change batteries in the tiny space you have on the aircraft, so install a full battery just before boarding if you have not been able to charge it in the gate area.

Travel with Professionals: Whenever we can, we go with Sea Puffers. The trip leaders are not your personal assistants. Don't expect them to push your wheelchair around London. However, they are terrific at organizing the overall trip, arranging for the rental of any medical equipment you need on the ship, organizing day tours in ports that are appropriate for oxygen users, and assisting with emergencies large and small. On cruises, they find you great cabin locations near elevators and even handicapped-accessible staterooms. When you arrive in a major European city and find that the brand-new voltage converter you bought back home doesn't work, you can panic or you can call the trip leaders. We called and in five minutes they solved our issue!

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Left: The Sea Puffers recently got together in Alaska for a Whale Party!

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Respiratory News

Long-term treatment with antibiotics should not be an option in those with COPD since they are not effective, cause adverse effects and lead to resistance. By contrast, the selective targeting of pathogens in the lower airways has great potential as an intervention. A University of Buffalo team has received a National Institutes of Health grant aimed at developing a much more precise method of treatment.

A study in *BMJ Open Respiratory Research* recommended hand-held oscillatory positive expiratory pressure (OPEP) devices for patients with stable COPD to remove secretions. OPEP devices have people exhale against a fluctuating resistance. Several exhalations through a device, such as the Aerobika®, create positive pressure that sustains expiratory airflow and prevents airway collapse, while vibrations help with sputum clearance.

The Centers for Disease Control conducts studies to measure the benefits of seasonal flu vaccination each flu season to help determine how well flu vaccines are working. The flu vaccine for the 2018-2019 season was only 29 percent effective. The main reason for the vaccine's ineffectiveness was a strain of H3N2 flu that developed in the spring. The effectiveness is difficult to predict because the flu virus constantly mutates, so scientists have to develop a new vaccine every year. The flu vaccine still prevents hundreds of thousands of illnesses every year and increases a region's "herd immunity".



Getting vaccinated can help protect you from contracting the flu but it's not a guarantee you won't get sick. The virus's ability to rapidly mutate means a vaccine developed for one strain won't work against a strain that develops later which is what happened last flu season. Vaccine effectiveness was estimated at 49 percent during the period that H1N1 was dominant. Once H3N2 began spreading, effectiveness plunged to 9 percent. Vaccine effectiveness rates in recent years have been as low as 19 percent and as high as 52 percent. Please get ready to get your vaccination!

The first-ever universal influenza vaccine is currently being tested in people at the National Institutes of Health Clinical Center in Bethesda, Maryland. Also in the works is a vaccine created with the computer program Smart Algorithms for Medical Discovery (or SAM for short) started clinical trials in the United States. A drug developed by SAM would work in tandem with the existing flu vaccination to make it more effective.

Aspiration Pneumonia is Very Serious

UC Berkeley School of Public Health wants you to be aware of aspiration pneumonia which happens when you accidentally inhale food particles, liquid, saliva or regurgitated stomach contents into the airways and it gets into your lung tissue. Substances breathed into your lungs may be contaminated with bacteria, viruses or other microorganisms that can cause serious infection; and aspirated stomach acid can inflame and damage lung tissue. The infection can spread to other places in your body and lead to serious complications. A few simple steps can help prevent aspiration pneumonia:

- **Practice good oral hygiene.** Brush, floss, see your dentist regularly, clean dentures well and don't wear dentures when you sleep.
- **Seek help for swallowing problems.** See your doctor who may refer you to a gastroenterologist for an accurate diagnosis.
- **Drink responsibly.** Impairment raises your risk of inhaling foods, liquids or vomit.
- **Don't lie flat in bed.** If you have swallowing problems, prop your head up with several pillows or raise the head of the bed when you sleep.

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As we cannot assume responsibility, please contact your physician before changing your treatment schedule.

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