The
# Pulmonary Paper

*Dedicated to Respiratory Health Care*
May/June 2018 Vol. 29, No. 3




**Learn your options in oxygen equipment.**

**Find the right POC for you in the Annual Guide to POCs.**

**Compare POC Pulse Delivery Volumes in an easy to read chart.**

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

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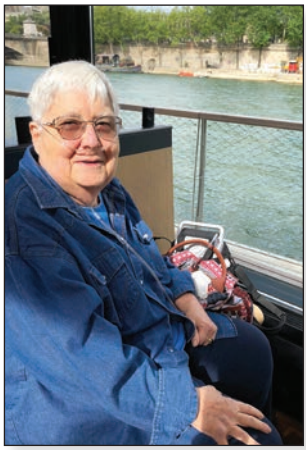
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## For Fun


**28** | Sea Puffer Cruises: Plan to have an adventure with the SeaPuffers in the Southern Caribbean, Alaska, or in New England and Canada next year!




*Using a POC that meets yours needs will definitely put a smile on your face!*



*Pam from Texas enjoys a boat ride down the Seine in Paris!*

### Education and Support

Many people tell us they are unable to find a support group in their area. Try asking your pulmonologist's office staff if they know of one. Call your local hospital and ask for the Pulmonary Rehabilitation or Respiratory Care Department. If there is an American Lung Association in your area, they will know of existing groups – often there are groups for specific respiratory problems as Pulmonary Hypertension, Alpha-1 Emphysema and Pulmonary Fibrosis. Online support groups are excellent to keep up-to-date with news and tips but meeting in person adds another element to the experience.

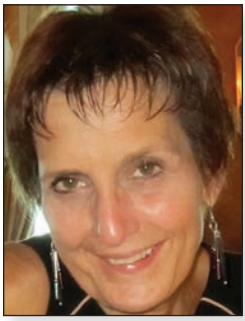
**How to Connect:**

Look under "Support & Community" at *www.lung.org* for those with COPD or call 1-800-LUNGUSA (586-4872).

For those with Alpha-1 Emphysema visit *www.alpha1.org* and search for support groups or call 1-877-228-7321.

For Pulmonary Fibrosis, call 1-844-TalkPFF (825-5733) or visit *www.pulmonaryfibrosis.org/life-with-pf/support-groups*

People with Pulmonary Hypertension can find help at *https://phassociation.org/support* or call 1-301-565-3004.



# Editor's Note

*"Education is the most powerful weapon which you can use to change the world."*
*Nelson Mandela*

**We met a man** who was big in stature and using oxygen with one of the smallest portable oxygen concentrators (POC) on the market. He said the unit was recommended to him by his home care company, but he was always short of breath. When he tried a POC with a bigger oxygen output, his life became a lot more bearable. We later found out, this successful businessman could easily have had his pick of any POC available but relied on others to guide him.

You have to be your own advocate in your life with respiratory problems. Learn all you can about your options. Your physician will know of new medications that may help you but cannot possibly keep up with all the developments in oxygen equipment. You might just inform them of something new that you read about. Maybe they don't know that a setting of 2 on one POC does not give you the same amount of oxygen that a setting of 2 on another POC does and that a setting of 2 is not the same as 2 Liters per Minute that you get from a tank. You are now empowered with Ryan's comparison chart to explain the difference! *(See pages 14-19.)*

Because of drastic cuts in payments by Medicare for oxygen therapy, many companies have gone out of business. If you still have liquid oxygen, consider yourself very lucky! Take that step to get involved in a pulmonary rehabilitation or Better Breathers group for education, support and camaraderie. Nothing will change without your involvement.

Cassie




*Using your oxygen keeps you involved in life!*



*Dr. Michael Bauer*

# Calling Dr. Bauer …

**Dear Dr. Bauer,**

**I have a lot of trouble sleeping at night – is this related to my COPD?** Vicky M., Florida

**Many of us** have a love-hate relation with sleep. We love it when we get that great night of refreshing sleep but become frustrated on those many nights when sleep doesn't go well. Our readers with lung disease may have special concerns and causes for having sleep difficulties.

There are four major causes for sleep-related breathing disorders in those with COPD. First is a low oxygen level while sleeping. It's reported that up to 70 percent of people with COPD have oxygen reductions below 88 percent. Next would be a co-existing diagnosis of sleep apnea. This common condition occurs in those with or without lung disease. Next is a condition called hypoventilation during sleep. All of us breath shallower during sleep. Those with elevated carbon dioxide levels at baseline (seen commonly in people with bad lung disease) can have further elevations while they sleep. Finally, the wheezing and airflow obstruction seen in COPD frequently cause arousals throughout the night.



Coexisting conditions such as obesity, smoking, heart failure and opioid use can all increase the risk of sleep-related breathing problems.

Treatment depends in large part according to the type of problem as well as the severity. Night time oxygen can be very helpful in selected people. CPAP or BiPAP may be indicated for sleep apnea. As much as sleeping pills of all sorts can be thought of … they usually depress respiratory effort and make oxygen levels dip even further during sleep.

My best wishes are that all you have better sleep and sweet dreams!

**Questions for Dr. Bauer? You may write to him at The Pulmonary Paper, PO Box 877, Ormond Beach, FL 32175 or by email at info@pulmonarypaper.org.**

**Good Luck to Dr. Bauer who is working on completing his over 2,100-mile Appalachian Trail adventure. He is in the third year of this endeavor. Look for him heading south, follow along at *https://mikectown.com***

## Oral Appliances for Adult Sleep Apnea

Oral appliances are devices that can be used to treat some people who have mild or moderate Obstructive Sleep Apnea (OSA) and snoring.

They hold your tongue in place so that your airway stays open while you sleep. Oral appliances are placed into your mouth at night before you go to bed, and worn for the entire time you are sleeping, and taken out when you are awake.

### How do oral appliances work?

Oral appliances work by pushing or pulling your lower jaw forward. By doing this, your tongue is kept in a position that does not block your airway. This reduces the risk of snoring or that your tongue may obstruct your airway during sleep. If this device is helping you, the sound of snoring should be gone entirely or lessened.



### How do I know if my oral appliance is working?

When an oral appliance is working well, there should be no snoring. If you are wearing the appliance because of sleep apnea, you may see improved sleepiness, fatigue and other symptoms of sleep apnea. A good way to find out if you are getting the help you need from your oral appliance is to have a repeat overnight sleep study with the oral appliance in place. If the study shows that wearing the oral appliance has helped your OSA, you should continue to use if every night. If it is not helping your sleep apnea, other treatments (such as CPAP) will be recommended.

This information is an except from a public service piece of the American Thoracic Society. For more information, visit *thoracic.org*

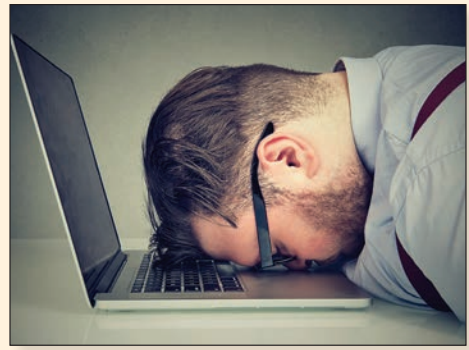
Approximately 70 million Americans suffer from one type of sleep disorder.

Approximately 4 percent of American men and 2 percent of women suffer from **obstructive sleep apnea** which temporarily blocks breathing in the upper airways, causing loud, labored snoring and stressful sleep interruptions frequently throughout the night.

Sleep apnea afflicts more than 936 million people worldwide, almost 10 times as many people as previously estimated, according to a report presented by ResMed at a recent American Thoracic Society meeting.

Other forms of sleep disorders include **advanced sleep phase disorder** which occurs when your biological clock sets to rise earlier than it should. This commonly affects seniors and is often linked to changes in seasons.

**Narcolepsy** is one of the most dangerous sleep disorders which affects approximately 100,000 Americans. A dysfunction in the brain causes a person to instantly fall asleep during normal daily activities.



**Restless Leg Syndrome**, whose cause is unknown, causes the lower legs to burn, ache, itch, twitch, and tingle upon falling sleep. It has been suggested to cut caffeine intake and alcohol consumption to help with the symptoms.

You might visit the American Sleep Association website *(www.sleepassociation.org)* for support and information or *http://sleepeducation.org* sponsored by the American Academy of Sleep Medicine.

## The Best Exercises for COPD Patients

*Deborah Leader RN of www.verywell health.com has an excellent article about exercises for people with COPD.*

Shortness of breath, weakness, and lack of energy often tie into fear of exercise for those with lung problems. Learning the basics of exercising when you have COPD will get you well on your way to living a healthier lifestyle and simply feeling better every day.

There are many reasons why exercise is beneficial for people with COPD including:

- Helping your body to utilize the oxygen you breathe in more efficiently
- Increasing your energy level and reducing fatigue
- Increasing walking distance
- Increasing your strength
- Reducing shortness of breath
- Reducing depression and other mood disorders
- Improving cognitive function
- Managing weight if you are overweight (excess weight means a greater requirement for oxygen in the body)
- Promoting socialization (people with COPD often become isolated from others)
- Fewer hospitalizations and reduced exacerbations.

In order to obtain lasting results from exercise, you must develop a life-long commitment to it. This means exercising even when you don't feel like it. The following steps will help you assess your own personal exercise needs:

1. **Talk to your doctor.** If there is not a pulmonary rehabilitation program in your area you could attend, speak with your health care provider to make sure the exercise program you choose is safe. Your doctor can discuss possible alternatives that may better suit you and advise you on oxygen use.
2. **Set goals.** You will reap the greatest rewards from exercising if you work toward a reachable goal. Determine what your goals are by writing them down. Keep your goals in mind when you hit a rough spot that may cause you to feel discouraged. Whether your goals are to breathe better or to rely less on others, identifying your goals will help you better accomplish them. Many people skip this step, thinking the time to journal exercise less important than actually doing the exercise, but making and keeping a record of your progress is wonderful incentive to continue on those days when you just don't feel like exercising.
3. **Exercise with a friend/be accountable to someone.** If you have someone who can exercise alongside you, all the better. Being accountable to another can help bridge the gap on those days you're tempted to give up.



4. **Identify how far you can go.** When you first start to exercise, you may quickly become fatigued. Don't be discouraged. It is important that you initially determine the level of exercise that feels safe and comfortable for you. As your endurance level builds, you will be able to exercise longer with less effort.

## Types of Exercises

Flexibility exercises are designed to help you improve your range of motion, posture, and breathing. You should do these before and after exercising. Flexibility exercises include stretches of your neck, shoulders, and calves. Yoga is another form of flexibility exercise that may be beneficial.

Improving your endurance helps improve the function of your lungs, as well as your heart and blood vessels. In the long run, these are the best types of exercises to help you withstand activities of daily living. Endurance exercises (often called cardiovascular endurance) include walking, biking and swimming, among others.

Help build and strengthen your muscles with strength training. Strong muscles will allow you to perform daily activities, such as housework or mowing the lawn, with less effort. Examples of strength training include lifting weights, body weight exercises and working with stretchy bands.

## Breathing during Exercise

Understanding how to properly breathe during exercise will improve your chances of success and sticking with a program. Doing pursed-lip breathing during exercise will help you maintain adequate oxygen levels and reduce shortness of breath. In addition, always try to exhale, or breathe out, during the most difficult part of the exercise, and inhale, or breathe in, during the easiest part of the exercise. For example, exhale when you raise your arms above your head and inhale as you lower them.

## Using the Dyspnea Scale

The dyspnea scale measures shortness of breath and ranges from 0 to 10 (10 being very, very severe). You can use the dyspnea scale during exercise to determine how hard you are working to breathe, and then pace



yourself accordingly. For example, if your shortness of breath is slight, you are at a level 1. If your shortness of breath is moderate, you are at a level 3. You are at a level 5 if you feel that your shortness of breath is severe, and if you cannot catch your breath at all, you are at a level 10. Keeping your level of dyspnea between levels 3 and 5 is best during exercise unless your doctor or pulmonary rehabilitation team tells you otherwise.

## Recognizing Signs of Overexertion

While exercise is strongly encouraged, it's important to know your limits. Stop exercising if you notice any of the following signs of overexertion:

- Unusual or an increasing level of shortness of breath
- Chest discomfort or chest pain
- Burning, pressure, tightness or heaviness in your chest
- Unusual pain in your jaw, neck, shoulders, arms or back
- A racing feeling in your heart
- Heart palpitations (feeling that your heart is skipping a beat)
- Lightheadedness or dizziness; Nausea
- Feeling more tired than usual
- Unusual pain in the joints



*Mark Mangus, RRT*
*EFFORTS Board*

# Ask Mark …

**Bruce B. from California tells Mark he was told that blowing up balloons was dangerous for those with emphysema but good for asthmatics. Those with emphysema risk bursting bullae blowing against too much pressure or even straining too hard holding their breath. Is this true?**

**Mark answers,** A bullae is an air-filled sac that sits along the lining of the lung in some people with emphysema. If this should rupture, the air escapes into the chest cavity causing a pneumothorax (air between the lung and chest cavity) which can result in a collapsed lung.

I cringe every time I learn yet another person has been taught that balloons are dangerous for those with emphysema. It's utter nonsense that is not based in any evidence or an understanding of physics. It is an old notion that has somehow carried over through the years going back to the 1970s when we had a breathing exercise called 'blow bottles'. It was a system that used two bottles filled with water that we dropped a blue colored pill into to turn the water blue so the user could see it better than without color. The bottles were interconnected with tubing such that when you blew into the tube connected to the bottle with water in it, the air pressure you generated in the bottle pushed the water through another tube and on into the empty bottle. You would then blow into the other bottle and send the water back into the bottle you had just emptied into it. You went back and forth from one bottle to the other.



Doing this caused you to generate 'sustained' airway pressures that could exceed 100 cm of water pressure. Instead of expanding the airways, as it was intended, the practice often collapsed smaller airways and increased pressure in the airways beyond those that did collapse. This could potentially foster bursting of blebs or bullae in those with bullous emphysema. In other people, even without lung disease, it caused lung collapse, the very problem we were trying to prevent.

Blow bottles were taken off the market in the mid to late 1970s but along the way, some misguided people postulated that blowing up balloons

**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.**

could generate the same dynamics and potential for injury. The problem is blowing up balloons simply does not generate anywhere near similar pressures or dynamics unless one tries to blow really hard and fast when inflating a balloon.

The fact of the matter is that coughing generates many times the pressure of blowing up a balloon – even a fresh one out of the package. So, coughing is by nature more likely to cause a bleb to burst. Another fact to consider is that the percentage of people with emphysema who have bullous lung disease is less than 10 percent. So, to apply an unsupported caution to the entire population is misdirected.

I used balloon inflation exercises in my pulmonary rehab program for the entire time I managed it. That covers a few thousand people over more than 20 years. I had many with bullous lung disease who used the exercise. Not once did anyone ever blow a bleb while blowing up those balloons. I did have a few people who indeed blew blebs while coughing very hard during a coughing jag.

**EFFORTS readers recently asked about pulmonary function testing and why you are asked to keep repeating the test!**

**Mark tells us,** It can take five or six repetitions to achieve the required three results that must be in a close percentage of each other. Among other measurements, we determine your Forced Vital Capacity (FVC) which is the maximum amount of air you can exhale after a maximal inhalation and your Forced Expiratory Volume in one second (FEV-1) which is the amount of air you can forcibly exhale in one second.

This testing tells us about the mechanics of your lungs ability to 'move air'. Under the GOLD Global Initiative for Chronic Obstructive Lung Disease *(www.goldcopd.org)* guidelines and American Thoracic Society standards, we classify folks into a stage of their disease (I, II, III, IV) based on the results of pulmonary function tests. Considerations for treatment choices are loosely tied to what stage a person is in. Also (more loosely), mortality expectations are extrapolated from those stages.

Doing the test might be uncomfortable but it should not be painful. Drinking water during the testing maneuvers may help reduce the 'burning' people feel with the maximum exhalations.

What is important for clinicians like me is to know what the FVC and FEV-1 are. Those two values require the absolute maximum effort you can generate to provide reliable results to interpret. Less than maximum effort can make a person look 'sicker' than they actually are.

Many people undergo the tests on a yearly basis, the need for that kind of frequency in those with 'stable' COPD is questionable. I would suggest that one should undergo spirometry testing at least every five years. After age 70, it is reasonable to do it every two years or every year, especially if statistically and clinically significant changes are observed. After 80 though, unless the person's condition is not 'stable', I don't see great value in arbitrary testing. As a physician friend always says, "They pretty much tell us what we already know without needing the numbers."



# Fibrosis File



## Best of Care

The Pulmonary Fibrosis Foundation (PFF) has added 15 treatment sites to its nationwide Care Center Network – centers with recognized expertise in diagnosing and treating people with pulmonary fibrosis. These sites raise the total to 60 such centers in the United States. Care centers use a multidisciplinary approach to PF care. Experts in pulmonary medicine, rheumatology, radiology, pathology, and nursing specializing in interstitial lung disease comprise the care team at each recognized center. They also assist with continuing care, help in obtaining social services, joining support groups (including one for caregivers) and in possibly participating in clinical trials and research studies.

The 15 centers are located at:

- Banner University Medical Center, Phoenix, AZ
- Baylor University Medical Center, Dallas, TX
- Cleveland Clinic, Cleveland, OH
- Cleveland Clinic Florida, Weston, FL
- Henry Ford Hospital, Detroit, MI
- Houston Methodist Hospital, Houston, TX
- LeBauer Health Care at Cone Health, Greensboro, NC
- Loyola University Medical Center, Maywood, IL
- Spectrum Health System, Grand Rapids, MI
- Luke's Hospital, Chesterfield, MO
- UC Davis Interstitial Lung Disease Program, Sacramento, CA
- University of Colorado Anschutz Medical Campus, Aurora, CO
- University of Florida, Gainesville, FL
- University of Iowa, Iowa City, IA
- University of Wisconsin, Madison, WI

## Clinical Trial News

An investigative drug developed by Kadmon called KD025 was shown to be safe and effective to prevent lung function decline in patients with idiopathic pulmonary fibrosis (IPF). The ongoing trial (NCT02688647) is expected to include about 36 people with IPF who have previously been treated with Esbriet (pirfenidone) or Ofev (nintedanib), or both. Data collected after 24 weeks showed that the investigational drug could effectively improve lung function and prevent IPF progression. In general, it was well-tolerated, with no serious drug-related adverse events reported.

The rate of decline in lung function in people with IPF before they are treated with Genentech's Esbriet (pirfenidone) influences the effects of the medication, researchers have found. Those classified as rapid progressors, who experience accelerated declines in lung function, benefited more from Esbriet than those considered slow progressors. The study was published recently in the journal *Scientific Reports*.

**A blog on** *www.pulmonaryfibrosisnews.com* posed the questions, *"Why am I having so much trouble thinking clearly? Is it from pulmonary fibrosis?"*

They asked Dr. Noah Greenspan, Director of the Pulmonary Wellness and Rehabilitation Center in New York to comment. He said that many factors may contribute to why we have trouble thinking clearly, and although it can be tempting to attribute all of our struggles to pulmonary fibrosis, the disease is not always the culprit. Possible explanations include:

**Chronic hypoxia:** Hypoxia is a fancy way of saying you aren't getting enough oxygen to your brain and other organs. It is possible that chronically having less than 90 percent oxygen saturation could cause changes in your brain, which could cause you to think less clearly.

**Decreased blood flow:** This can be related to atherosclerosis (plaque in the arteries), particularly in the carotid arteries that supply blood to the brain. It could also be related to changes in the vessels of the brain itself. This is more common as we age and can cause subtle changes in your thinking and in your brain's abilities.

**Emotional stress:** We may not realize the long-term emotional effects that dealing with a chronic illness can have on us. We are constantly forced to wrestle with our mortality and the grief that it entails. We also experience stress because of lifestyle changes, the effect that our illness has on others, and the everyday stress of making sure you can breathe – not to mention the frequent clinic visits, medical exams, and procedures. It is common to experience anxiety, depression, and difficulty thinking clearly when dealing with so much physical and emotional stress.

**Something else:** Our bodies are incredibly amazing and incredibly complicated. There could be many other reasons.

There are lots of ways to care for your body and manage your stress:

**Oxygen levels:** It is important to keep your oxygen saturation at a safe level – Dr. Greenspan recommends above 93 percent.

**Blood pressure management:** If your blood pressure is too high, your heart is working too hard to pump blood to the rest of your body. Pulmonary fibrosis as a disease puts extra pressure on our hearts. Ask your primary care doctor or cardiologist for help to manage your blood pressure.

**Practice relaxation techniques:** Our bodies need a way to relax from the constant stress we are under. Stress relaxation techniques, as well as tai chi and Qigong, are very helpful.

**Establish routines to help yourself:** A lot of routines can help with thought organization. Write down lists of things you need to remember and accomplish.



CALL TODAY!

# What POC is Right for Me?

## Main Clinic will match you to a POC that fits you and your needs!




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### The Inogen® One G4 System

With settings 1-3, the Inogen G4 is a very light model. Hand, shoulder or waist carry for ease in portability.

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- Half the size of the G3.

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- Advanced Intelligent Oxygen Delivery, with five flow settings.



*Inogen® One G3*

$2495

NIGHT-TIME SLEEP OXYGEN

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The *new* Inogen GS-100 is one of the lightest, quietest and travel-friendly 5 LPM continuous flow oxygen concentrators on the market. At approximately 18 pounds, it is half the weight of other home oxygen concentrators.

- True Constant Flow Oxygen 1-5 LPM; travels easily with optional travel case.
- Powerful enough to add 100 feet of tubing.
- Easy-to-use controls are perfect to operate day or night.



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*Ryan Diesem*

We hope this information helps you in some way to determine what POC would be a good fit for you or someone you know. There is a lot of information here, and it certainly isn't the most user-friendly to look at and absorb, especially in limited space such as a magazine. As always, feel free to contact me if you have any questions about POCs at my email address below.

*– Ryan*

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

# The Ryan Report

## Home Oxygen Guru – The $HO_2G$ Pen

### 2018 Portable Oxygen Concentrator Guide

**Welcome to the** 2018 version of our annual Portable Oxygen Concentrator (POC) Guide. One of the many questions we get on a regular basis as we approach this issue is, "Is there a POC capable of 5 LPM continuous flow that is smaller than the continuous flow POCs now available?" Unfortunately, the answer is still "no", and it's especially disheartening that we don't even have a POC that *can* put out 5 LPM yet, let alone one that is smaller and lighter than anything currently out there. I really do hope that changes sooner rather than later, but if you are hoping to find a new POC that can produce more oxygen than any of the devices you may already be familiar with, I'm afraid we're still not there yet. As for what *is* new, here are some changes of note from the 2017 version of the guide:

- GCE released the 2 LPM continuous flow capable Zen-O™ POC and the intermittent flow Zen-O™ Lite POC shortly before last year's guide was published and, unfortunately, we did not get the information until after publication. However, both units are now represented here. The Zen-O™ can be most closely compared to the Respironics SimplyGo, while the Zen-O™ Lite can be most closely compared to the Inogen One G3.

- There is another 2 LPM continuous flow-capable POC now on the market from Precision Medical, the EasyPulse TOC (Total Oxygen Concentrator). Unique features of the EasyPulse TOC include continuous flow settings of 1/8 LPM and 1/4 LPM and pulse setting specifications that match the delivery characteristics of Precision's EasyPulse 5 intermittent flow POC pulse settings (meaning, for example, that you get the same oxygen delivery at a pulse setting of 2 on either device).

- Much to our surprise at the end of 2017, CAIRE/SeQual discontinued production of the SeQual Equinox POC, the smaller version of their Eclipse 5 POC, after only three years (meanwhile, the Eclipse line has been on the market since 2005). It's a disappointing move, especially given it was the smallest 3 LPM continuous flow-

*Continued on page 20*

# 2018 Portable Oxygen Concentrators

*Please consult with your doctor or therapist before deciding to use or purchase any of these devices.*

| INTERMITTENT FLOW (PULSE ONLY) POCS | | | | |
|---|---|---|---|---|
| | AirSep Focus™ | AirSep FreeStyle™ 3/5 | GCE Zen-O™ lite | Inogen One G2 |
| |  |  |  |  |
| **PRODUCTION AND DELIVERY** | | | | |
| Maximum Oxygen Production (mL/min) | 333 mL/min (0.33 LPM) | 500 mL/min (FreeStyle)<br>1000 mL/min (FreeStyle 5) | 1,050 mL/min (1.05 LPM) | 1,260 mL/min (1.26 LPM) |
| Available Settings | None Selectable | 1 to 3 (FreeStyle)<br>1 to 5 (FreeStyle 5) | 1 to 5 | 1 to 6 |
| Pulse Delivery Type | Minute Volume Delivery | Minute Volume Delivery | Combination Fixed/Minute Volume Delivery | Minute Volume Delivery |
| **DOSE VOLUMES PER BREATH*** ** | | | | |
| 2 LPM Continuous Flow: 15 BPM: 44mL 30 BPM: 22 mL<br>4 LPM Continuous Flow: 15 BPM: 88mL 30 BPM: 44 mL<br>6 LPM Continuous Flow: 15 BPM: 133mL 30 BPM: 66 mL | | | | |
| Maximum Delivered Pulse Volume | 15 BPM: 22 mL | 15 BPM: 33/67 mL | 15 BPM: 55 mL | 15 BPM: 84 mL |
| | 30 BPM: 11 mL | 30 BPM: 17/33 mL | 30 BPM: 35 mL | 30 BPM: 42 mL |
| **WEIGHT (UNIT + STD. BATTERY); ADD UP TO 5LBS. FOR ACCESSORIES** | | | | |
| Unit & Battery (Approx.) | 3 lbs. | 5 lbs./7 lbs. | 6 lbs. | 7 lbs. |
| **STANDARD SINGLE BATTERY OPERATION TIMES** | | | | |
| Approx. Battery Time at Pulse Setting 2 | 1.5 hours | 3.5 hours (FS)<br>2.5 hours (FS5) | 4.0 hours | 4.0 hours |
| **ALL UNITS APPROVED FOR FLIGHT BY FAA** | | | | |
| Max. Altitude | 10,000 ft. | 12,000 ft. | 13,000 ft. | 10,000 ft. |

# 2018 Portable Oxygen Concentrators

*Please consult with your doctor or therapist before deciding to use or purchase any of these devices.*

| INTERMITTENT FLOW (PULSE ONLY) POCS | Inogen One G3/OxyGo | Inogen One G4/OxyGo Fit | Inova Labs Activox™ 4L | Invacare Platinum |
|---|---|---|---|---|
| |  |  |  |  |
| **PRODUCTION AND DELIVERY** | | | | |
| Maximum Oxygen Production (mL/min) | 1050 mL/min (1.05 LPM) | 630 mL/min (0.63 LPM) | 480 mL/min (0.48 LPM) | 880 mL/min (0.88 LPM) |
| Available Settings | 1 to 5 | 1 to 3 | 1 to 4 | 1 to 4 |
| Pulse Delivery Type | Minute Volume Delivery | Minute Volume Delivery | Minute Volume Delivery | Minute Volume Delivery |

*** Approximate Continuous Flow volumes at 2, 4, and 6 LPM are provided for comparison to maximum volumes delivered by the selected POC for a user breathing at a 1:2 I:E ratio.

| | | | | |
|---|---|---|---|---|
| Maximum Delivered Pulse Volume | 15 BPM: 67 mL | 15 BPM: 42 mL | 15 BPM: 32 mL | 15 BPM: 59 mL |
| | 30 BPM: 33 mL | 30 BPM: 21 mL | 30 BPM: 16 mL | 30 BPM: 29 mL |
| **WEIGHT (UNIT + STD. BATTERY); ADD UP TO 5LBS. FOR ACCESSORIES** | | | | |
| Unit & Battery (Approx.) | 5 lbs. | 3 lbs. | 5 lbs. | 6 lbs. |
| **STANDARD SINGLE BATTERY OPERATION TIMES** | | | | |
| Approx. Battery Time at Pulse Setting 2 | 3.0 hours | 2.3 hours | 8.3 hours | 2.5 hours |
| **ALL UNITS APPROVED FOR FLIGHT BY FAA** | | | | |
| Max. Altitude | 10,000 ft. | 10,000 ft. | 10,000 ft. | 10,000 ft. |

# 2018 Portable Oxygen Concentrators

*Please consult with your doctor or therapist before deciding to use or purchase any of these devices.*

| INTERMITTENT FLOW (PULSE ONLY) POCS | | CONTINUOUS FLOW POCS | |
|---|---|---|---|
| **Precision EasyPulse 3/5** | **Respironics SimplyGo Mini** | **DeVilbiss® iGo** | **GCE Zen-O™** |
|  |  |  |  |
| **PRODUCTION AND DELIVERY** | | | |
| 520 mL/min EasyPulse 3<br>780 mL/min EasyPulse 5 | 1,000 mL/min (1.0 LPM) | 3,000 mL/min (3.0 LPM) | 2,000 mL/min (2.0 LPM) |
| 1 to 3 (EasyPulse 3)<br>1 to 5 (EasyPulse 5) | 1 to 5 | 1 to 6<br>Continuous 1 to 3 LPM | Pulse 1 to 6<br>Continuous 0.5 to 2 LPM |
| Minute Vol. Delivery | Combination Fixed/Minute Volume Delivery | Fixed Delivery 14 mL per setting | Combination Fixed/Minute Volume Delivery |
| **DOSE VOLUMES PER BREATH*** ** | | | |
| 2 LPM Continuous Flow: 15 BPM: 44mL 30 BPM: 22 mL<br>4 LPM Continuous Flow: 15 BPM: 88mL 30 BPM: 44 mL<br>6 LPM Continuous Flow: 15 BPM: 133mL 30 BPM: 66 mL | | | |
| 15 BPM: 35 mL/52 mL<br>30 BPM: 17 mL/26 mL | 15 BPM: 55 mL<br>30 BPM: 33 mL | 84 mL | 15 BPM: 66 mL<br>30 BPM: 66 mL |
| **WEIGHT (UNIT + STD. BATTERY); ADD UP TO 5LBS. FOR ACCESSORIES** | | | |
| 5 lbs. / 7 lbs. | 5 lbs. | 19 lbs. | 10 lbs. |
| **STANDARD SINGLE BATTERY OPERATION TIMES** | | | |
| 4.0 hours (EasyPulse 3)<br>3.4 hours (EasyPulse 5) | 4.5 hours | 4.7 hours (20 BPM) | 4.0 hours (18 BPM)**** |
| **ALL UNITS APPROVED FOR FLIGHT BY FAA** | | | |
| 9,000 ft. | 10,000 ft. | 13,123 ft. | 13,000 ft. |

# 2018 Portable Oxygen Concentrators

*Please consult with your doctor or therapist before deciding to use or purchase any of these devices.*

## CONTINUOUS FLOW POCS

| O2 Concepts Independence | Precision EasyPulse TOC | Respironics™ SimplyGo | SeQual® Eclipse 5 |
|---|---|---|---|
|  |  |  |  |
| **PRODUCTION AND DELIVERY** | | | |
| 3,000 mL/min (3.0 LPM) | 2,000 mL/min (2.0 LPM) | 2,000 mL/min (2.0 LPM) | 3,000 mL/min (3.0 LPM) |
| Pulse 1 to 6 | Pulse 1 to 5 | Pulse 1 to 6 | Pulse 1 to 6* |
| Continuous 1 to 3 LPM | Continuous 0.13 to 2 LPM | Continuous 0.5 to 2 LPM | Continuous 0.5 to 3 LPM |
| Fixed Delivery 16 mL per setting | Combination Fixed/Minute Volume Delivery | Combination Fixed/Minute Volume Delivery** | Fixed Delivery 16 mL per setting |

*The **SeQual® Eclipse 5** also has pulse settings of 128, 160 and 192 mL, which have additional breath rate restrictions for use. See device manual for more information. **The **SimplyGo** has two IF delivery modes: Pulse Mode and Night Mode. Shown volumes are for Pulse Mode. Night Mode has minute volume delivery. ****The **Independence** and **Zen-O™** POCs are capable of holding (2) batteries that can be used simultaneously, doubling the reported operating time.

| | | | |
|---|---|---|---|
| 96 mL | 15 BPM: 52 mL | 15 BPM: 72 mL | 96 mL* |
| | 30 BPM: 26 mL | 30 BPM: 66 mL | |
| **WEIGHT (UNIT + STD. BATTERY); ADD UP TO 10 LBS. FOR ACCESSORIES** | | | |
| 19 lbs. (w/2 batteries) | 11 lbs. | 10 lbs. | 18 lbs. |
| **STANDARD SINGLE BATTERY OPERATION TIMES** | | | |
| 2.9 hours (20 BPM)**** | 3.0 hours | 3.0 hours (20 BPM) | 5.1 hours (12 BPM) |
| **ALL UNITS APPROVED FOR FLIGHT BY FAA** | | | |
| 13,123 ft. | 10,000 ft. | 10,000 ft. | 13,123 ft. |

# 2018 POC Pulse Delivery Volumes

| | POC Pulse Volumes | | | Setting 1 | | Setting 2 | |
|---|---|---|---|---|---|---|---|
| | Model | Max Oxygen | Delivery Type | 15BPM | 30BPM | 15BPM | 30BPM |
| INTERMITTENT FLOW (PULSE ONLY) POCS | **AirSep Focus™** | 333 mL/min | Minute Volume | | | 333 mL/min | |
| | | | | | | 22 mL | 11 mL |
| | **AirSep FreeStyle™ 3/5** | FS: 500 mL/min<br>FS5: 1000 mL/min | Minute Volume | 228 mL/min | | 420 mL/min | |
| | | | | 15 mL | 8 mL | 28 mL | 14 mL |
| | **GCE Zen-O Lite** | 1050 mL/min | Fixed/ Minute | up to 1050 mL/min | | up to 1050 mL/min | |
| | | | | 11 mL | 11 mL | 22 mL | 22 mL |
| | **Inogen One G2** | 1260 mL/min | Minute Volume | 210 mL/min | | 420 mL/min | |
| | | | | 14 mL | 7 mL | 28 mL | 14 mL |
| | **Inogen One G3 / OxyGo** | 1050 mL/min | Minute Volume | 210 mL/min | | 420 mL/min | |
| | | | | 14 mL | 7 mL | 28 mL | 14 mL |
| | **Inogen One G4 / OxyGo Fit** | 630 mL/min | Minute Volume | 210 mL/min | | 420 mL/min | |
| | | | | 14 mL | 7 mL | 28 mL | 14 mL |
| | **Inova Labs Activox™ 4L** | 480 mL/min | Minute Volume | 120 mL/min | | 240 mL/min | |
| | | | | 8 mL | 4 mL | 16 mL | 8 mL |
| | **Invacare Platinum** | 880 mL/min | Minute Volume | 220 mL/min | | 440 mL/min | |
| | | | | 15 mL | 8 mL | 31 mL | 15 mL |
| | **Precision Easy Pulse 3/5** | EP3: 520 mL/min<br>EP5: 780 mL/min | Minute Volume | 240 mL/min | | 380 mL/min | |
| | | | | 16 mL | 8 mL | 25 mL | 13 mL |
| | **Respironics SimplyGo Mini** | 1000 mL/min | Fixed/ Minute | up to 220 mL/min | | up to 440 mL/min | |
| | | | | 11 mL | 8 mL | 22 mL | 15 mL |
| CONTINUOUS FLOW POCS | **DeVilbiss® iGo** | 3000 mL/min | Fixed Pulse | 14 mL | | 28 mL | |
| | **GCE Zen-O** | 2000 mL/min | Fixed/ Minute | up to 2000 mL/min | | up to 2000 mL/min | |
| | | | | 11 mL | 11 mL | 22 mL | 22 mL |
| | **O2 Concepts Independence** | 3000 mL/min | Fixed Pulse | 16 mL | | 32 mL | |
| | **Precision EasyPulse TOC** | 2000 mL/min | Minute Volume | 240 mL/min | | 380 mL/min | |
| | | | | 16 mL | 8 mL | 25 mL | 13 mL |
| | **Respironics™ SimplyGo** | 2000 mL/min | Fixed/ Minute | up to 2000 mL/min | | up to 2000 mL/min | |
| | | | | 12 mL | 12 mL | 24 mL | 24 mL |
| | **SeQual® Eclipse 5** | 3000 mL/min | Fixed Pulse | 16 mL | | 32 mL | |
| | **Continuous Flow Volumes** | | | 1 LPM | | 2 LPM | |
| | | | | 22 mL | 11 mL | 44 mL | 22 mL |

The SeQual® Eclipse 5 also has pulse settings of 128, 160 and 192 mL, which have additional breath rate restrictions for use. See device manual for more information. The SimplyGo has two IF delivery modes: Pulse Mode and Night Mode. Shown volumes are for Pulse Mode. Night Mode has minute volume delivery. Approximate Continuous Flow volumes per breath

| Setting 3 | | Setting 4 | | Setting 5 | | Setting 6 | |
|---|---|---|---|---|---|---|---|
| 15BPM | 30BPM | 15BPM | 30BPM | 15BPM | 30BPM | 15BPM | 30BPM |
| | | | | | | | |
| | | | | | | | |
| 500 (FS)/630 (FS5) mL/min | | 840 mL/min (FS5) | | 1000 mL/min (FS5) | | | |
| 33/42 mL | 17/21 mL | 56 mL | 28 mL | 67 mL | 33 mL | | |
| up to 1050 mL/min | | up to 1050 mL/min | | up to 1050 mL/min | | | |
| 33 mL | 33 mL | 44 mL | 44 mL | 55mL | 35 mL | | |
| 630 mL/min | | 840 mL/min | | 1050 mL/min | | 1260 mL/min | |
| 42 mL | 21 mL | 56 mL | 28 mL | 70 mL | 35 mL | 84 mL | 42 mL |
| 630 mL/min | | 840 mL/min | | 1050 mL/min | | | |
| 42 mL | 21 mL | 56 mL | 28 mL | 70 mL | 35 mL | | |
| 630 mL/min | | | | | | | |
| 42 mL | 21 mL | | | | | | |
| 360 mL/min | | 480 mL/min | | | | | |
| 24 mL | 12 mL | 32 mL | 16 mL | | | | |
| 660 mL/min | | 880 mL/min | | | | | |
| 41 mL | 20 mL | 49 mL | 25 mL | | | | |
| 520 mL/min | | 660 mL/min (EP5) | | 780 mL/min (EP5) | | | |
| 35 mL | 18 mL | 44 mL | 22 mL | 52 mL | 26 mL | | |
| up to 660 mL/min | | up to 880 mL/min | | up to 1000 mL/min | | | |
| 33 mL | 22 mL | 44 mL | 29 mL | 55 mL | 33 mL | | |
| 42 mL | | 56 mL | | 70 mL | | 84 mL | |
| up to 2000 mL/min | | up to 2000 mL/min | | up to 2000 mL/min | | up to 2000 mL/min | |
| 33 mL | 33 mL | 44 mL | 44 mL | 55 mL | 55 mL | 66 mL | 66 mL |
| 48 mL | | 64 mL | | 80 mL | | 96 mL | |
| 520 mL/min | | 660 mL/min | | 780 mL/min | | | |
| 35 mL | 18 mL | 44 mL | 22 mL | 52 mL | 26 mL | | |
| up to 2000 mL/min | | up to 2000 mL/min | | up to 2000 mL/min | | up to 2000 mL/minL | |
| 36 mL | 36 mL | 48 mL | 48 mL | 60 mL | 60 mL | 72 mL | 66 mL |
| 48 mL | | 64 mL | | 80 mL | | 96 mL | |
| **3 LPM** | | **4 LPM** | | **5 LPM** | | **6 LPM** | |
| 67 mL | 33 mL | 89 mL | 44 mL | 111 mL | 56 mL | 133 mL | 67 mL |

are provided for comparison to pulse setting volumes delivered by a select POC for user breathing at a 1:2 I:E ratio.

***No POC has CF settings above 3.***

*Continued from page 13*

capable POC available, albeit comparatively more expensive as well. As a result, the Equinox has been removed from the guide for this year. If you have or are looking at an Equinox currently, do know that its oxygen production output and all available settings are exactly the same as on the Eclipse 5, so you can use that information for comparison purposes.

- ResMed Corp., which acquired Inova Labs and their Activox line of POCs in 2016, recently announced their Mobi POC for release some time this year. As far as we can tell, this 'new' POC is just going to be an update of the Inova Labs Activox™ 4L unit. Until the Mobi is made available, we will continue to publish the information for the Activox™ 4L as ResMed continues to sell and support the Activox™ 4L POC.

- In 2016, the Inogen G3 was updated to provide additional oxygen production and pulse settings up to 5. The 2016 and 2017 guides published information on both pre- and post-2016 versions of the G3. Going forward, we are only publishing information on the newer version of the G3. Information on the older G3 model (identifiable via a maximum pulse setting of 4) can be found in the older guides, though performance and output at pulse settings 1 to 4 are the exact same as on the new G3 from settings 1 to 4.

### Understanding Guide Information:

- **Intermittent Flow POCs:** These are POC units with pulse delivery settings *only*, and do not have any continuous flow delivery settings. These units tend to weigh between 3 to 10 pounds when carrying all accessories.

- **Continuous Flow POCs:** These are POC units that have both pulse delivery and continuous flow delivery settings. The units tend to weigh between 10 to 20 pounds when carrying all accessories.

- **Maximum Oxygen Production:** This is the maximum amount of oxygen the POC can produce in one minute. Values are reported in milliliters (mL) per minute, or mL/min. In general, the smaller the POC, the less oxygen it can produce.

- **Available Settings:** These are the ranges of pulse and continuous flow settings available on each device. All intermittent flow (pulse only) POCs have pulse settings *only*.

- **Pulse Delivery Type:** This is the method of oxygen delivery that the POC employs when in pulse mode.

    - **Minute Volume Delivery:** When set to a given pulse setting, the POC will produce a specific volume of oxygen per minute, regardless of the user's breath rate. As a result, the device will automatically reduce the pulse volume delivered per breath as the user's breath rate rises. Users may need to increase the pulse setting when active to ensure they are getting enough oxygen per breath to maintain oxygen saturations generated while at rest.

    - **Fixed Pulse Delivery:** When set to a given pulse setting, the POC will deliver a fixed pulse of oxygen per breath, and maintains that volume no matter what the user's breath rate is. All currently available POCs that generate 3000 mL/min of oxygen utilize fixed pulse delivery.

- **Combination Fixed/Minute:** These POCs maintain a fixed pulse delivery method at a given setting up until the user's breath rate exceeds the specified production capacity of the device at that setting, at which time the POC automatically begins reducing the pulse volume delivered the higher the user's breath rate goes. This is currently only a published feature of the GCE and Respironics POCs.

- **Maximum Delivered Pulse Volume:** This is the volume of oxygen delivered per pulse at the highest available setting on the POC, reported in milliliters (mL). All minute volume and combination fixed/minute volume delivery POCs have these values reported at a resting rate of 15 breaths per minute (BPM) and active rate of 30 BPM. All fixed pulse delivery POCs deliver the same volume at both 15 and 30 BPM, so only one volume value is shown in the cell.

- **Unit & Battery (Approx.):** This is the approximate weight of the base unit and one single battery. This weight does not include any additional accessories (like power supplies or carts) and will be higher if the user installs a 'double' battery. In general, add 2 to 5 pounds for intermittent flow POC extra batteries and accessories, and 5 to 10 pounds for continuous flow capable POC extra batteries and accessories.

- **Approx. Battery Time at Pulse Setting 2:** This is the amount of time a user might expect to be able to operate the POC on a full battery charge when the device is set to a 2 pulse setting, the most commonly prescribed setting. Battery operating times will decrease with an increase in pulse setting and respiratory rate. Batteries will lose the ability to hold a full charge the older they get and the more they are used, also reducing operating time.

- **Max. Altitude:** This is the maximum recommended altitude in which to operate the POC without the POC losing the ability to perform within specification. The higher the altitude, the more the unit needs to 'work' to generate oxygen, which can reduce oxygen purity and battery operating times. *Note:* When traveling by plane, cabins are typically pressurized to simulate altitude of 8,000 to 10,000 feet.

In addition to the comparison guide, due to many questions about and requests for individual pulse volumes at each setting, we also offer a second table that shows how much oxygen is delivered and/or produced at each of the POC's pulse settings. This table is meant to be useful when comparing the pulse volumes at a given setting between devices. It is important to remember that just because the POC is set to a 2 pulse setting, it does not mean that the user is getting 2 LPM of oxygen, nor does it mean that another device set to 2 will give the same volume. Looking closely at this table will help better understand the differences in pulse volumes delivered by POCs when set to the same pulse setting, as well as the maximum oxygen production capable of each POC.

***Please note:*** *All data in the chart is taken from product specifications, manufacturer supplied information, or other known entities. All effort has been made to ensure data is current and correct, but neither I nor The Pulmonary Paper make claims to its accuracy as products/specifications may have changed or data may have been erroneous. Please contact Ryan via email with any corrections or errors.*

# SUMMER QUIZ:

It is time for Summer Vacation! And just for fun, list the titles of these movies that took place during the Summer.

1



2



3



4



5



6



7



8



9



10



11



12



# Device Quality Matters.



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Reference:
1. Svenningsen S, *et al.* COPD 2016;13(1):66–74.

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# Sharing the Health!

**Russell Winwood from** Australia is known as a COPD athlete – he has completed the Boston Marathon and is a qualified Iron Man! Phillips Respironics has teamed with Russ to raise awareness of COPD and to inspire those who have been diagnosed with lung disease to live their lives to the fullest. You can follow the 52-year old man's activities at *www.copdathlete.com*, where there is also information on COPD including podcasts by health professionals.



**Be careful when** you show the love to your favorite singer – seems like you actually can scream your lungs out! *The Journal of Emergency Medicine* reports a teenager was admitted to the hospital with shortness of breath and a collapsed lung after forceful screaming at a concert she attended.

**I received a** Pneumovax vaccine to protect against pneumonia many years ago which I was told works against 23 strains of pneumonia. My physician has recommended that I get an additional dose of Pneumovax every five years. He also suggested one called Prevnar 13 to boost my immunity against 13 more strains of pneumonia. I thought one pneumonia vaccination would protect me for my life but after learning 4,000 people die from pneumonia every year, I am going for maximum protection. Thought I would spread the word!

**Rick Adams, Florida**

**Bronchial thermoplasty has** been a treatment option for people with severe asthma since 2010. Their problems with thick smooth muscle in their airways is relieved by heat treatment with radio-frequency thermal energy. The procedure is done in three sessions at least three weeks apart. Each session takes 30 to 45 minutes. More than 6,800 people in 33 countries have been treated. After bronchial thermoplasty, fewer asthma exacerbations, emergency room visits and hospitalizations have been reported. On average, corticosteroid use was also reduced.

**Professional clown Fran** Etzkorn, known as Kolo, also happens to be an oxygen user. She has always wanted to zip line and finally got her chance. Kolo is an inspiration to all of us who think we can't do something!



*Photo courtesy of Ralph Turkle*

## Airline Travel, Altitude and Oxygen Saturation

On a recent cruise vacation, an oxygen user who lives in New Mexico at a high altitude, was able to go without his oxygen at sea level. His oxygen saturation stayed above 90 percent during the trip. On the other hand, people who travel to altitude have to deal with the opposite problem. When high altitude is starting to cause problems, you may feel tired, have a headache or feel dizzy.

Oxygen tension decreases at higher altitude. As altitude increases, barometric pressure decreases, which in turn decreases the pressure of oxygen in the air. There normally is 21 percent oxygen in room air. At altitudes of 5,000 to 8,000 feet, this can drop to 15 to 17 percent. This is the same pressure that an airplane is during flight.

Your physician may order a High Altitude Simulation Test or HAST. It involves you breathing a mixture of oxygen that is 15 percent to mimic what would happen during your flight. Your oxygen saturation is monitored to see if it decreases to determine how much oxygen you will need during the trip.

*The European Respiratory Journal* recommends that people with COPD who have a FEV-1 (Forced Expiratory Volume in one second) of less than 1.5 Liters be tested before they board an airplane. They recommend using an equation to determine what your blood oxygen level would be in the air.



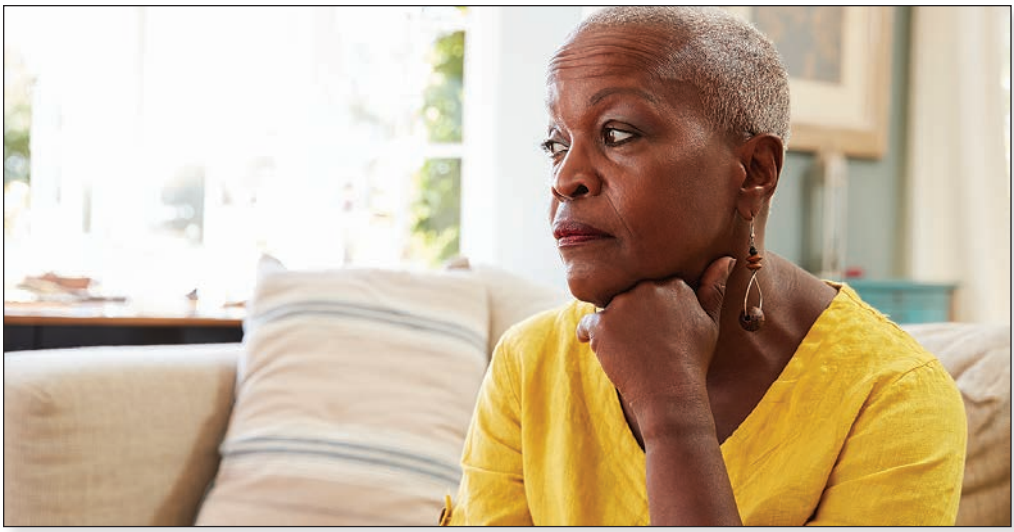
**Trelegy is a** maintenance medication for people with COPD that combines three separate medications in one inhaler – a long acting bronchodilator to open your airways, a long acting muscarinic agent to keep your airways open by relaxing the muscles around them and an inhaled corticosteroid to reduce inflammation of your airways. The effects of Trelegy is said to last for a full 24 hours and is used to reduce flare ups and infections. To learn more, receive a free information kit, and possible savings on the drug, visit *www.trelegy.com*

**Edna Fiore from** Colorado shares an article from *Medical News Today* that discusses everything you wanted to know about coughing at *https://tinyurl.com/yd8llmqk*

**Mike, a member** of the Facebook group "COPD Navigator," shares that Propeller Health is offering a free inhaler tracking/reminder device to the first 300 Navigators who sign up at *http://navigator.propellerhealth.com* These devices connect to your smartphone or tablet to offer insights on how you're using your COPD medications. You can track triggers, time of day, all that sort of thing. The device can even help find your inhaler if you misplace it! Become a member of COPD Navigator and other similar groups on Facebook to connect and share with others.



**Kelly B., Knoxville,** TN, shares a report by a student dietitian from Australia on nutrition for people with lung disease. Read it at *https://tinyurl.com/yavkv2kh*



## Pulmonary Hypertension News

Pulmonary arterial hypertension (PAH) affects around 133 million Americans. People from Scotland with PAH can now be treated with Actelion's Uptravi® (selexipag) through the country's National Health System. The use of this will be restricted to adults whose symptoms are not manageable or do not tolerate other available PAH therapies. Uptravi® helps vessels in the lungs to relax and widen, easing blood flow.

Serena Lawrence of *Pulmonary Hypertension News* writes of her frustration when well-meaning people say things they don't realize are frustrating. *Healthline.com* put together a list of things you should never say to people dealing with a chronic illness. We thought you might identify with some!

***"That's probably just in your head."*** or ***"You look fine! You don't look sick at all!"*** If people can't see your disease, they often don't think you have a disease. Pulmonary hypertension has several symptoms that are just internal and are most of the time invisible for those who don't know them.

It's not just in your head and you're not overreacting.

***"I'm so sorry for you!"*** When people are trying to be nice and trying to empathize with you, they can express pity as a way to try and connect with you. Most of the time, people simply don't know what to say. You would probably rather hear something like, "I'm here for you" or "You can count on me" as opposed to people saying they're sorry.

***"I'm sure things will get better."*** If you have a chronic illness, it means you will have to live with that disease for the rest of your life. Sure, you will have ups and downs and some moments will be better than others, and at some point, you will feel better, but the disease will always be with you. Even though people might want to show you support, saying that things will get better is not fair. Living with a chronic illness is like being on a roller coaster all the time; you can't predict what's going to happen next.

*"You look great! How did you lose all that weight?"* Sometimes society wants us to believe that everyone should have the perfect body: slender with just the right amount of muscle. So it's understandable that, if you lose weight, people may compliment you – and that would be fine, if the reason you lost weight was not a health issue.

*"I know exactly how you feel!"* In an attempt to relate to you, people may compare themselves to you. For example, if you have PH, you might feel tired most of the time, be out of breath and have no will to go out. Your friend, who has been having some pain in their lower back, may try to relate to you by saying they "know how you feel."

*"You'll be fine! I have a friend who has a cousin who suffers from the same thing and she's doing great!"* Not everyone is the same, and the exact same health condition can affect different people in very different ways. While that friend of a friend may suffer from PH and has some very bad days, that does not mean you will go through the exact same thing they are going through.

*"Well, you could have a more severe disease! It could be way worse."* Every health condition is a serious health condition. People tend to tell you that things could be worse, that you could have a more serious disease, but no one knows what you're going through.

---

## LAST ISSUE'S ANSWERS: Spring Quiz

1. Jazz standard originally performed by Freddy Martin but made most famous by Count Basie. **April in Paris**
2. Irene Hunt novel about the American Civil War, often considered the first Young Adult novel. **Across Five Aprils**
3. Common distress signal to denote a life-threatening emergency. **May Day**
4. Poet and novelist, writer of 'Phenomenal Woman' and 'I Know Why the Caged Bird Sings'. **Maya Angelou**
5. Character from the tea party scene in 'Alice in Wonderland' **March Hare**
6. News reporter and friend to the Teenage Mutant Ninja Turtles **April O'Neil**
7. Song from 'Sounds of Silence' by Simon and Garfunkel. **April Come She Will**
8. Nickname for either John Philip Sousa or Kenneth J. Alford. **March King**
9. Date noted in history for the assassination of Julius Caesar. **Ides of March**
10. Dave Matthews Band song from 'Under the Table and Dreaming'. **Ants Marching**
11. Cold War-era Burt Lancaster and Kirk Douglas movie about a planned military coup against the President. **Seven Days in May**
12. Richard Matheson novel or its adaptation starring Robin Williams about the afterlife. **What Dreams May Come**
13. Aquatic insect closely related to the dragonfly. **Mayfly**
14. Creators of the only known writing system in pre-Columbian America. **Maya Civilization**
15. Song by Sublime from their self-titled album about the Rodney King riots. **April 29, 1992**
16. Ship that famously transported the Pilgrims to the New World. **Mayflower**
17. Holiday noted for practical jokes and hoaxes. **April Fools Day**
18. The protagonist of 'Little Women'. **Jo March**
19. Common name for the NCAA Men's Division I Basketball Championship. **March Madness**
20. Foundation formerly referred to as the National Foundation for Infantile Paralysis. **March of Dimes**

# Just Go Away! Visit the Southern Caribbean,

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"One of my best trips and groups!" PJ, Florida

"Experienced new sights." JJ, New York





# 2019 TRIPS

## SOUTHERN CARIBBEAN CRUISE

**February 24-March 6, 2019**
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Leave from Fort Lauderdale and enjoy the **beauty of the southern Caribbean**!
This journey will have you exploring:

- **Half Moon Cay**
- **Grand Turk**
- **Amber Cove**
- **Bonaire Curaçao**
- **Aruba**




## ALASKAN CRUISE!

**July 20-27, 2019 (on the Ruby Princess)**





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Leave Boston and end the cruise in Montreal, Canada. Experience the beautiful fall season sailing the Atlantic coast.
**Highlights: Bar Harbor, Maine In Canada: Halifax and Sydney (Nova Scotia), Charlottetown (Prince Edward Island), Quebec City • Montreal (Quebec)**



# Respiratory News

**A type of** plant-produced chemicals known as flavonoids found in dark-pigmented fruits like red grapes and blueberries may slow the lung function decline that occurs with aging, according to new research by John Hopkins researchers. Anthocyanins, the type of flavonoid investigated in the current study, appear to reduce mucus and inflammatory secretions and had slowed the rate of decline of lung function.

**For those looking** for information on stem cell therapy, you may read current technical medical reports published in *Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation* at *http://doi.org/10.15326/jcopdf.5.2.2018.0140*

**The U.S. Food** and Drug Administration (FDA) has filed two complaints in federal court seeking permanent injunctions to stop two stem cell clinics from marketing their stem cell products without FDA approval and for significant deviations from current good manufacturing practice requirements. A permanent injunction is being sought against US Stem Cell Clinic of Sunrise, FL, and California Stem Cell Treatment Center Inc., in Rancho Mirage and Beverly Hills, CA.

**Research with mice** shows blocking a protein that stimulates the production of white blood cells could prevent the destructive inflammation of COPD. These white blood cells called neutrophils and macrophages fight lung infections but can also attack the lungs' elastic fibers. A new study, in the *Journal of Clinical Investigation*, opens the way for what could be the first treatment that actually prevents the disease from progressing, and provides a new biomarker to screen people for much earlier diagnosis. For more information on the University of Melbourne research visit *www.futurity.org/lungs-copd-inflammation-1752872-2/* More research with mice in the journal *EMBO Molecular Medicine* found blocking a cellular pathway related to cholesterol metabolism shows early promise in treating COPD.

**Three-quarters of** COPD cases have their origins in poor lung function pathways beginning in childhood. These pathways are associated with exposures in childhood, and amplified by factors in adulthood, according to a study published in *The Lancet Respiratory Medicine* journal. While smoking remains the biggest risk factor for COPD, the study demonstrates that childhood illnesses (such as asthma, bronchitis, pneumonia, allergic rhinitis, eczema) and exposures to parental smoking are also linked to the disease.

**Researchers at the** University of Portsmouth found the blood thinner heparin significantly improves lung function and breathing in those with COPD. The heparin is turned into an aerosol, which can be inhaled through a face mask twice a day for three weeks. It thins mucus in the airways and also acts as an anti-inflammatory. It's not clear yet whether the drug will need to be used every day, or just when symptoms are particularly bad. The researchers are now planning a trial to see if heparin inhaled daily can benefit those with cystic fibrosis.

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