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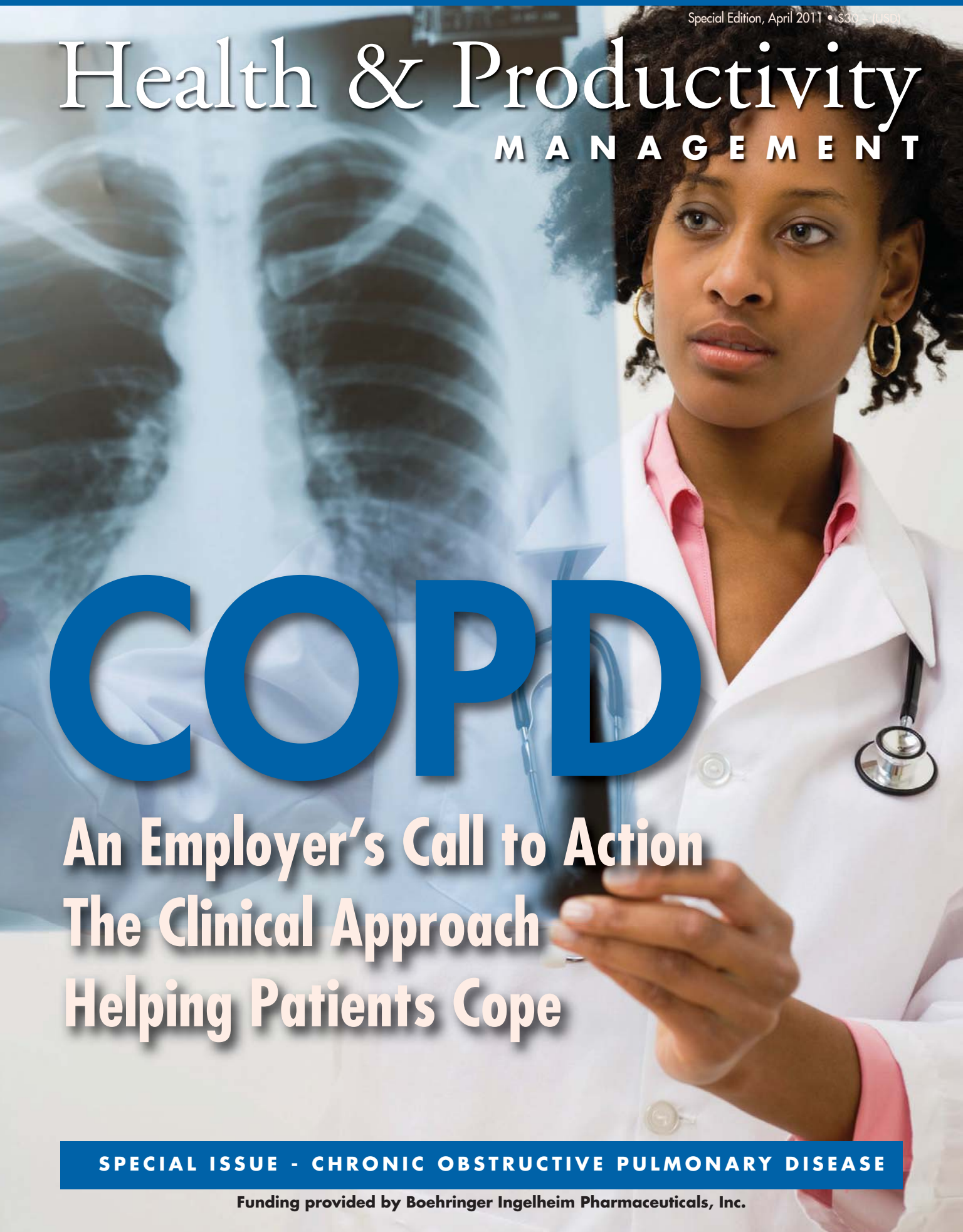

COPD

An Employer's Call to Action
The Clinical Approach
Helping Patients Cope

SPECIAL ISSUE - CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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He served on various committees of the Pan American Health Organization, World Health Organization, Caribbean Latin American Action, Americas' Healthnet, Center for Telemedicine Law, the InterAmerican Development Bank and URAC. He helped design, implement and enhance telecommunication and digital healthcare solutions in the U.S. and other countries.

He has served as Chief Medical Officer, Medical Director, Chief Information Officer and Chief Clinical Information Officer for several companies. He speaks nationally on healthcare trends, healthcare economics, telecommunications and digital solutions for healthcare. Dr. Nevins has authored chapters on telemedicine and medical call center software and technology.

Dr. Nevins graduated from the University of Oklahoma School of Medicine. Following an emergency medicine residency, he practiced emergency and family medicine for 22 years. He has been a diplomat of the American Board of Family Practice since 1978 and a Fellow of the American Academy of Family Physicians since 1981.

He was a Clinical Associate Instructor in Emergency Medicine and Family Practice for the University of Kansas School of Medicine. In 1988 he was the recipient of the first "Heartiest Five" award from the American Heart Association for excellence in teaching and practicing the principles of cardiovascular risk factor reduction.

A graduate of Temple University and Hahnemann Medical College in Philadelphia, **David G. Tinkelman**, MD, served his residency in pediatrics at the St. Christopher's Hospital for Children, also in Philadelphia. He then did his fellowship training program at National Jewish Health (formerly, National Jewish Medical and Research Center) in Denver, and successfully completed his board examinations in Pediatrics and in Allergy and Immunology.

Dr. Tinkelman was in private practice with the Atlanta Allergy Clinic for nearly 20 years and also was Clinical Professor in the Department of Pediatrics in the Section of Allergy and Immunology at the Medical College of Georgia. While in Atlanta he served as President of the Allergy and Immunology Society of Georgia and the American Lung Association of Atlanta. He then returned to Denver, as Vice President of Health Initiatives at National Jewish Health.

Dr. Tinkelman is a past president of the Joint Council of Asthma, Allergy and Immunology. He was previously Section Chairman of the Section of Allergy and Immunology of the Academy of Pediatrics and Chairman of the Asthma Guidelines Project for the Academy of Pediatrics. He was the editor of the *Journal of Asthma* from 1988 to 2009 and has served on the editorial boards of several other journals.

Dr. Tinkelman is author of more than 150 published scientific articles, scholarly reviews, and book chapters. In addition, he has been the co-editor of four textbooks related to pediatric allergic and asthmatic conditions, and has recently expanded his research to include socioeconomic and wellness issues in healthcare. While continuing in a senior management position at National Jewish, Dr. Tinkelman maintains his clinical interest by seeing patients in the Clinic at National Jewish. His professional goals are to meld the standards of academic excellence and optimal medical care with the goals of cost-effective healthcare delivery systems.

In addition to being Vice President of Health Initiatives at National Jewish Health, Dr. Tinkelman is academic title of Professor of Pediatrics at both National Jewish and the University of Colorado, Denver. His chief responsibilities include business development, wellness initiatives, growth of the clinical laboratory, professional education and institutional marketing. Over the past 14 years, he has created and served as Medical Director for the Asthma and COPD disease management programs, the smoking cessation program (Quit Line) and, most recently, a multi-media weight management program, FitLogix®.

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SPECIAL EDITION

AT A GLANCE

While the U.S. and many other countries are in the throes of dealing with the consequences of a "global epidemic" of Type II diabetes and related obesity, and its growing impact on medical spending and workplace productivity, the next great epidemic is appearing on the horizon – ***Chronic Obstructive Pulmonary Disease*, or COPD**.

COPD is the fourth – soon to become the third – leading cause of mortality in the world, and the only one that is on the rise. In addition, it produces a huge total burden of illness that includes lost work time, diminished productivity at work, and increasing disability. The principal cause of this rising tidal wave is several generations of aging smokers and former smokers who will continue to present the nation with an increasing medical bill – and employers with even larger costs in lost time and workplace performance.

Just as the earlier epidemic of diabetes and obesity led IHPM to establish a Workplace Center for Metabolic Health to address its consequences in the workplace, so this new epidemic of smoking-related COPD has led us to create a new Workplace Center for Respiratory Health for a similar purpose.

This special issue of ***Health & Productivity Management*** is the first product of this Center – aimed at educating employers, providers and patients on the seriousness of COPD and showing them what they can do to mitigate the impact of this increasingly prevalent chronic disease. The special issue has been created under the leadership of IHPM's Chief Clinical Officer, Dr. Rick Nevins, working with Dr. David Tinkelman, Vice President of Health Initiatives at National Jewish Health and a pulmonary expert.

The three articles in this publication speak in turn to each of the critical parties in the prevention, diagnosis and management of COPD – the employer who bears the workplace burden of this serious and widespread chronic illness, the physician who needs to do much more to reduce the future incidence and total costs – human and financial – of the disease, and the patient – also the employee – who must either stop smoking or live with the long-term consequences of a debilitating and, ultimately, terminal illness. A final section provides a resource guide for education, assessment, and disease management. HPM

SEAN SULLIVAN
PRESIDENT & CEO
INSTITUTE FOR HEALTH AND PRODUCTIVITY MANAGEMENT

COPD and the Patient

By Rick Nevins, MD

Chronic Obstructive Pulmonary Disease (COPD) is a serious lung disease that needs early detection and comprehensive management. COPD is usually caused by cigarette smoke[1] and results in shortness of breath, frequent coughing, and an excess of mucus.[2]

If you have COPD or are at risk for it, or have a family member or friend with COPD, this article is for you. It will discuss what COPD is and what causes it, as well as the treatments that are available to manage it. The article also emphasizes the importance of what you can do to reduce the impact of COPD on your health, your life and your family.

WHAT IS COPD?

Chronic Obstructive Pulmonary Disease (COPD) is:[3]

- Chronic – long-lasting
- Obstructive – partially blocking the flow of air
- Pulmonary – relating to the lungs
- Disease – an illness

COPD is a lung disease that causes problems with the way the lungs push "used" air out, resulting in not enough room left to take in "new" air. More than 12 million American adults have been diagnosed with COPD and about 12 million more have impaired lung function but have not been diagnosed.[4]

COPD is the only major fatal illness for which there is still an increasing death rate[2] and is fourth after cardiovascular disease (reduced blood supply to heart muscles resulting in a heart attack, angina and heart failure), cancer, and cerebrovascular disease (reduced blood supply to the brain resulting in stroke and transient ischemic attack or TIA).[1,2] And the COPD death rate is rising so rapidly that it is expected to be the third-leading cause of death globally by 2020.[2,5]

WHAT CAUSES COPD?

The main cause of COPD is cigarette smoking. Approximately one out of three smokers gets COPD[6] and 80 percent to 90 percent of COPD is due to smoking.[1] Other things that may raise the chances of getting COPD include:[2]

1. being around other people's smoking (secondhand smoke);
2. working or living in an area polluted by dust or chemicals;
3. frequent respiratory infections; and
4. having had problems with lung growth and development (such as being born at a low birth weight or with a rare hereditary deficiency of a needed substance in the lungs).[2]

Some of these things – such as problems with lung growth – you cannot control. But others, such as smoking, you can control. If you have COPD you can do a lot to keep it from getting worse. If you smoke, quitting is the most important thing you can do, and it may help slow down the progression of your disease.[2]

WHAT HAPPENS WHEN YOU HAVE COPD?

COPD is not just one disease, but a group of different lung disorders, most often including chronic bronchitis and emphysema.[7] ***Characteristic symptoms of COPD include excess phlegm production, chronic progressive shortness of breath and cough.***[2,7]

When you have COPD, there are changes in your lungs that affect your breathing. If you have chronic bronchitis, the walls inside your airways become swollen and thick, and your airways become narrow. Large amounts of mucus form, also blocking the airflow.[7]

If you have emphysema, the air sacs at the ends of your airways are damaged and get stiffer.[7] Air gets trapped in the tiny air sacs, which get stretched too much and break down, so that they begin to function improperly. This results in having a few large air sacs instead of many tiny ones. Not all the air in the larger space gets pushed out when you breathe out. Your blood may not get enough oxygen and you have to work harder to breathe – to get rid of the carbon dioxide.[8]

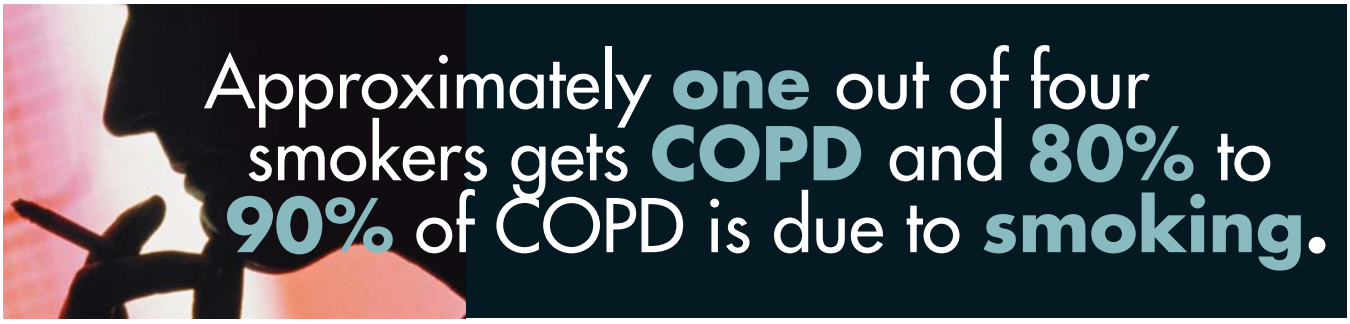
ASTHMA IS NOT COPD

Asthma also is a disease that affects the airways, but it is a different disease, and ***asthma and COPD need different treatments***.[9]

Asthma is sometimes confused with COPD and COPD with asthma by both patients and healthcare practitioners. In a study published in 2006, half (52 percent) of patients with a study diagnosis of COPD were previously misdiagnosed with asthma.[12] This trend toward misdiagnosis has important implications for your care, since the treatments for asthma and for COPD are different.[9]

COPD can be caused by smoking or being around smoking.[2] It also can be caused by working or living in an area polluted by dust or chemicals, while asthma is caused by being sensitive to something (like a certain food or pollen in the air) that causes an allergic reaction. It also can be caused by being sensitive to non-allergenic factors such as infections, exercise, and some drugs.[2]

COPD is a long-lasting disease that often gets worse over time and usually has some continuous symptoms between



Photos: Jupiter Unlimited

flare-ups, while asthma attacks come and go, often without symptoms between attacks. COPD usually starts in people over 40 years of age, and asthma usually starts in childhood.[2]

If you have COPD symptoms that are not controlled, and are being treated with asthma medication only, review your medication list with your pharmacist and healthcare practitioner to be sure that you are on the right medications.

HOW IS COPD DIAGNOSED?

COPD should be suspected in any adult over 40 years of age with a history of smoking for a period of time and any respiratory symptoms (cough, wheezing, shortness of breath with exertion or at rest).[2] The physical examination may not be of much help in many cases until the disease has progressed.[2] Sometimes a chest x-ray will show findings that could be from COPD.

The diagnosis of COPD is made with the use of a breathing test known as spirometry.[2] Spirometry measures the amount of air blown out of the lungs (exhalation) over a period of time and may confirm a diagnosis of COPD, show how severe the COPD is,[2] help your healthcare practitioner decide what medicines and other health instructions to use, and show how well the medicine and the other disease management components are working.

(See the Resource Section of this publication for a sample COPD risk survey and more information on spirometry.)

Your responses to this survey may indicate that you have COPD symptoms or are at risk for COPD. A survey like this, combined with spirometry, is very useful for your healthcare practitioner in determining if you have COPD.

MANAGING YOUR COPD

COPD cannot be cured,[7] but it can be managed. You can do a lot to feel and live better with it. The best management for COPD includes paying attention to all of the following components of care:

1. TAKING YOUR COPD MEDICATIONS

Most patients get several medications to help control symptoms.[2] There are two major categories of medications used in the management of COPD:

Maintenance medicines

Maintenance medicines should be taken every day to keep your symptoms under control and reduce or eliminate the need for rescue medications.[7] Maintenance medicines will help you breathe more easily. They start to work gradually and may last 4 to 24 hours. They are bronchodilators (medications that dilate or open the airways) taken through an inhaler, nebulizer, pill or capsule or as combination medicines.[2]

Maintenance medicine should be taken as prescribed even if the symptoms of COPD are totally controlled or stable, not just when they're getting worse.[11] You should follow an Action Plan previously created by you and your healthcare practitioner for the management of flare-ups. **(See the Resource Section of this publication for more information about an Action Plan.)**

Rescue medicines

Rescue medicines are taken as needed to help you with difficulty breathing when usual symptoms get suddenly

Asthma is sometimes confused with COPD and **COPD** with **asthma** by both patients and healthcare practitioners. In a study published in 2006, half (**52 percent**) of patients with a study diagnosis of COPD **were** previously **misdiagnosed** with asthma.

worse.[7] This kind of medication can quickly improve your breathing for about 4-6 hours.[7] Rescue medicines include bronchodilators that are taken through an inhaler.[2]

Rescue medicines should not be used to prevent your symptoms, but are designed to treat them. Needing to use rescue medicines every day usually indicates that you need to contact your healthcare practitioner, who may make an adjustment in your maintenance medication.

If you get relief from your maintenance medication, don't assume that the medication is no longer needed and stop taking it. The consequences of that decision can be a flare-up of symptoms, requiring emergency department treatment or hospitalization, especially if a rescue medication has not been prescribed for flare-ups.

Likewise, when you get immediate improvement of symptoms from using a rescue medication, don't decide that the maintenance medication is no longer needed or could be taken less often than prescribed. The consequence of doing so is poor management of COPD symptoms that often results in urgent or emergency care. **(See the Resource Section of this publication for more information about Maintenance and Rescue Medications.)**

2. OTHER MEDICATIONS FOR COPD

Antibiotics are used to treat respiratory infections caused by bacteria.[7] They are not used on a long-term basis but only when respiratory infection is present.[12]

Corticosteroids (steroids) are given by mouth, inhaler and intravenously[7] and are usually used for a short time when symptoms are getting worse or hospitalization is needed.[2] With the exception of severe or very severe patients, they are used on a daily basis.[2] Steroids work to improve breathing by reducing inflammation in your airways.[7]

3. DO NOT SMOKE

If you smoke, quitting is the most important thing you can do. Stopping smoking is the only action that may stop your disease from getting worse.[2] Try to stay away from people who smoke, because secondhand smoke is harmful. Also avoid dust, chemicals and air pollution.[2] If you smoke, talk with your healthcare practitioner about a smoking cessation program to help you stop the use of tobacco.

COPD FLARE-UPS

A flare-up or exacerbation occurs when some or all of your COPD symptoms suddenly get worse.[7]

Examples of flare-up symptoms include:

- increased cough;
- having a cough with yellow or green mucus;[7]
- increased amounts of sputum;
- using more puffs of medicine from the rescue inhaler;
- feeling that the medicine is not working as well as it should;
- having a harder time breathing;
- coughing up blood streaks;
- having sudden shortness of breath with or without chest pain.[13]

Flare-ups have a variety of causes, including:

- smoking or being around smoke;
- infections such as colds or flu;
- strong fumes such as car exhausts;
- fumes or odors from cleaning products;
- fumes or odors from paint and perfume;
- air pollution;
- very cold or very humid air.

You should follow an Action Plan previously created by you and your healthcare practitioner. The plan should include specific reasons to contact the healthcare practitioner, and contact information including phone numbers.

COPD exacerbations are significant events, often with slow recovery periods. These events can limit your quality of life and overall prognosis[2,5] by potentially contributing to a more rapid reduction in lung function over time. ***Exacerbations should be managed quickly to avoid emergency room visits and inpatient hospitalizations.***[2]

(See the Resource Section of this publication for more information about Flare-Ups.)

COLDS, FLU AND PNEUMONIA

Colds, flu and pneumonia are all respiratory infections. People with COPD and any of these infections can get very sick.[7] For this reason, you should get your healthcare practitioner's help in having immunizations to prevent the seasonal flu and pneumonia.[7] (There are no immunizations available for preventing colds.)

IMPACT OF CO-MORBIDITIES

COPD can coexist with, and sometimes aggravate, comorbidities.[2] Patients with COPD are at increased risk for numerous co-morbid conditions, including:

- myocardial infarction (heart attack);
- angina;
- poor blood supply to heart muscles;
- heart failure;
- loss of heart rhythm;
- enlarged or thickened heart;
- reduced blood supply to the brain (stroke or pre-stroke);
- hypertension;

- osteoporosis;
- respiratory infection;
- asthma;
- bone fractures;
- depression;
- diabetes;
- sleep disorders including apnea (episodes of not breathing during sleep);[7]
- anemia;
- excessive weight loss;
- muscle wasting;
- glaucoma.[2]

The presence of COPD also may increase the risk of lung cancer.[2] Your healthcare practitioner also should manage the co-morbidities you have, given the impact of these conditions on the management and prognosis for your COPD.

MANAGING YOUR DIET

COPD may cause you to use extra energy to breathe – more energy than someone who does not have COPD.[14] Eating a healthy diet[7] will not cure COPD, but it may help you have the energy you need to be more active, improve the way your lungs work, fight infections, keep a healthy weight and feel better in general.[14]

Work with your healthcare practitioner or a dietician to design the proper nutrition plan for your COPD and any other medical conditions that you have. Your plan will be specific for your needs. For most people with COPD, a healthy diet includes items from each of the basic food groups – fruits, vegetables, cereals, whole grain foods, proteins such as meat or fish, and dairy products such as milk or cheese (but limited if you have cholesterol problems).

You should limit salt and caffeine, avoid overeating, and avoid foods that cause gas – such as carbonated drinks, fried or spicy foods, beans and cabbage.[14]

To help prevent shortness of breath while eating or right after eating, try to eat six more small meals daily instead of three big meals.[14] In addition, eat while sitting up, eat slowly, chew foods well, drink liquids at the end of your meal and control your salt intake.[14] To improve your appetite:[14]

- avoid non-nutritious drinks such as black coffee and tea;
- try to eat more protein such as chicken and fish;
- eat fewer simple sugars such as sodas and sweet cereals;
- eat small meals and snacks in between;
- walk or do light physical activity.

Check with your healthcare practitioner or dietician before you try any of these tips.

COPD AND WEIGHT

You need to stay at a healthy weight when you have COPD. How much you weigh affects how well your body works.

If you weigh too much, your heart and lungs have to work harder and breathing is harder.[7,14] If you weigh too little you may have less energy, feel weak and tired, and be more likely to get an infection.[14]

Ask your healthcare practitioner or dietician what weight is right for you. Try to get to that weight and stay there. Ask about food plans and activities you should do before you start your own plan.

MANAGING YOUR FITNESS WITH COPD

Some people with COPD think exercise will make their breathing worse, but the opposite is actually true. In fact, lack of activity can make it worse. Getting physical activity (at all stages of COPD) may actually help you feel less short of breath, give you more strength and endurance while you do your daily activities, improve heart health and keep you in a better mood.

Talk with your healthcare practitioner about what and how much you should do before you start. Your practitioner may suggest a consultation with an exercise specialist, stretching (also good to warm up and cool down before and after exercise), walking, slow dancing, riding a stationary bike,[15] and proper use of your inhalers while exercising.

(See the Resource Section of this publication for more information on Nutrition, Exercise, Weight Management and Fitness for COPD.)

Maintenance medicines should be taken **every day** to keep your symptoms under **control and reduce** or **eliminate** the need for rescue medications.

PULMONARY REHABILITATION

Your healthcare practitioner may want you to undergo pulmonary rehabilitation. This program is planned specifically to your needs and may include education, breathing exercises, medical and nursing management, exercise training, nutrition counseling, help with your psychological and social needs,[7] answers to your questions on how and when to take your medicines, and recommendations for healthy lifestyle changes.

Pulmonary rehabilitation can help you learn how to:

- breathe easier
- possibly reduce your need for some medicines, health care practitioner visits and hospital stays
- relieve stress and anxiety
- increase your ability to do daily activities and exercise
- have a better quality of life.[8,15]

MANAGING MOODS

Sometimes, having COPD may make you feel frustrated or helpless. You may feel this way especially if you are not able to be as active as you want to be or once were. It can be helpful to take the time to understand what is causing your frustration and to find new ways of doing things that will allow you to stay active, such as breaking down activities into steps with rest times in between.

Depression – We all feel sad or "blue" at times, but depression is more than that. Different people have different symptoms from depression. See your healthcare practitioner if you have any of the following:

- feel sad, nervous, or "empty" for a period of time
- feel like things are hopeless
- feel guilty, worthless or helpless
- lose interest or pleasure in hobbies and activities you used to enjoy
- have less energy, feel tired, or "slowed down"
- have trouble concentrating, remembering or making decisions
- have problems sleeping or over-sleeping
- lose your appetite and lose weight, or overeat and gain weight
- have thoughts of death or suicide
- feel restless or irritable
- have physical symptoms that do not respond to treat ment, such as headaches, digestive problems, and long-lasting pain

Depression can be treated. If you think you may be depressed, talk to your healthcare practitioner. Counseling, medicine or both may help you feel better.

Worries, stress and anxiety

You may worry about shortness of breath, lifestyle changes, and loneliness. Stress and anxiety use up energy. You need energy to breathe. Talk with your healthcare practitioner to find ways to deal with worry, stress, and anxiety, such as yoga, relaxation techniques and breathing exercises.

SUMMARY

If you have COPD it is important to work with your doctor and focus on several components in the management of COPD:

- differences between COPD and asthma
- use of maintenance and rescue medications
- smoking cessation
- managing COPD flare-ups
- managing co-morbidities
- managing diet
- managing weight
- managing fitness
- managing moods
- pulmonary rehabilitation

COPD is a progressive disease that is under-recognized, under-diagnosed and under-treated. COPD management clearly requires a team of experts to produce the best results. You are the most important member of that team!

- You must learn about COPD and how it should be treated.
- You must use your maintenance and rescue medication as directed by your healthcare practitioner.
- You must work with your healthcare practitioner to develop an Action Plan to prevent and manage flare-ups.
- You must work closely with your healthcare practitioner to minimize the impact of other health issues on your COPD.
- You must take care of yourself through nutrition, exercise, fitness and mood management, all of which can have a significant impact on living with your COPD. HPM

Go to www.ihpm.org/respiratory-health.php to obtain references for this Chapter