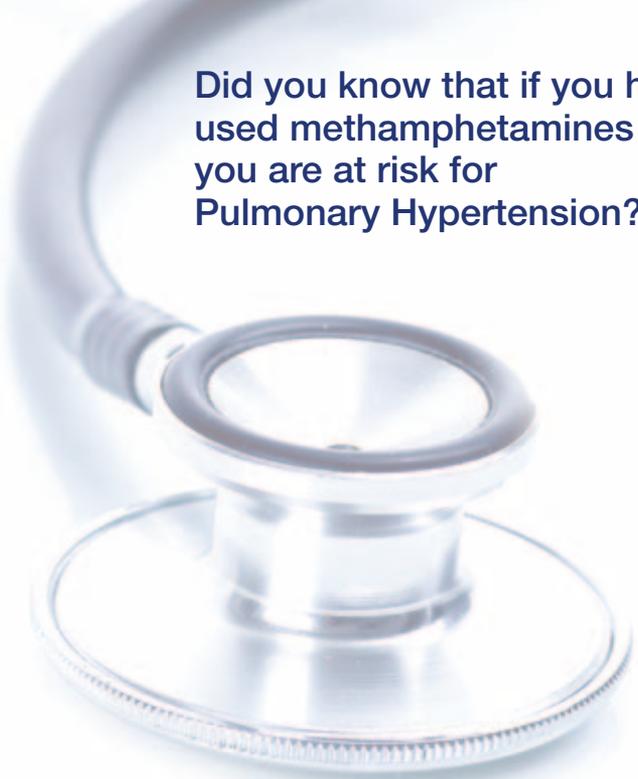
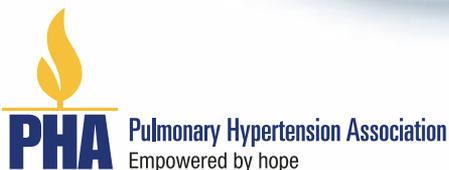


Methamphetamine Use

PH Pulmonary
Hypertension

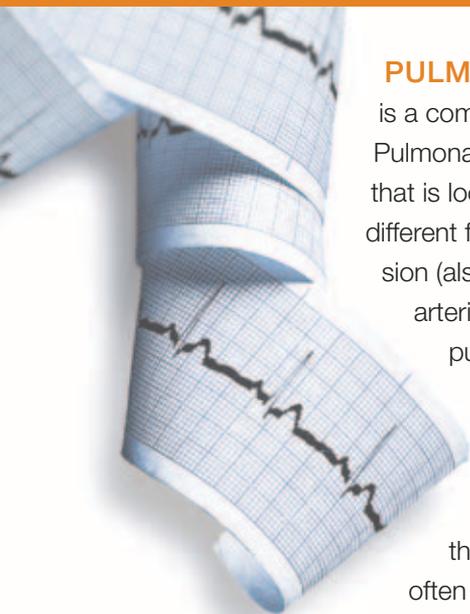


Did you know that if you have
used methamphetamines
you are at risk for
Pulmonary Hypertension?



www.PHAssociation.org

About Pulmonary Hypertension



PULMONARY HYPERTENSION, OR PH,

is a complex and often misunderstood disease. Pulmonary hypertension means high blood pressure that is located in the lungs. Pulmonary hypertension is different from regular hypertension. In regular hypertension (also known as high blood pressure), a person's arteries throughout the body are constricted. In pulmonary hypertension, the blood vessels in the lungs become narrowed and the heart has to work harder to pump blood through them. PH can also be caused by multiple blood clots, diseases that damage the lung, or heart failure. Early symptoms are often non-specific and diagnosis is often delayed.

Pulmonary hypertension affects people of all ages and ethnic backgrounds. The most common symptoms are shortness of breath with physical activity, fatigue, lightheadedness and sometimes fainting. Because these symptoms can be caused by any number of other problems, diagnosing a case of pulmonary hypertension can be difficult and may require a specialist. Once pulmonary hypertension is diagnosed, however, treatment can begin immediately.

One form of PH is called pulmonary *arterial* hypertension (PAH). In PAH, the blood vessels that carry blood to the lungs (known as the pulmonary arteries)

are narrowed, thickened and stiff. Because of this, the pressure in those arteries is abnormally high. This means that the right side of the heart has to pump much harder to move blood. There are several types of PAH. In what is known as idiopathic PAH (IPAH), the cause of the PAH is never known. In what is known as familial PAH (FPAH), the disease is inherited, meaning another member or members of the patient's family was diagnosed with pulmonary hypertension. PAH can also be associated with other medical conditions such as connective tissue diseases (scleroderma and lupus, for example), chronic liver disease, congenital heart disease,



sickle cell disease and HIV infection. Finally, PAH can be associated with past or present drug use, such as methamphetamines or certain diet pills.

Some patients who are diagnosed with PH also suffer from other specific problems as well. These other problems might include left-sided heart disease (for example, people who have had heart attacks, have hypertension or heart valve disease), chronic obstructive pulmonary disease (COPD) and emphysema, and chronic thromboembolic disease (chronic blood clots in the lungs).

PAH is a serious condition, and without treatment, symptoms can only become

worse, leading to heart failure and even death. Therefore, it is essential that patients follow the advice of their doctor. PAH, like PH itself, is rare and its signs and symptoms are vague and often confused with other disorders. Proper diagnosis and therapy are essential. Increasing public awareness of PAH (and PH) will help patients seek treatment earlier, which can lead to better long-term health. While no cure has yet been found for PH, increased research has resulted in new and better medications and therapies that allow PH patients to live longer, fuller lives with far less interference from the disease. Even more promising research is being conducted every day, and advances are made every year.



PH in Association with Methamphetamine Use

My doctor recently told me that I have pulmonary hypertension, and also asked me if I had ever used stimulants like methamphetamines (speed). Why am I being asked this?

Research continues into the causes and development of pulmonary hypertension (PH). In particular, scientists are trying to identify factors that lead to what we currently call idiopathic pulmonary arterial hypertension (IPAH), or PAH where the cause of the condition is not yet known. It is essential that you be honest and open with your doctor about all activities in your life, including past or present drug use, since establishing these connections can help your doctor with your treatment plan. It also helps researchers understand the risk factors that apply to patients like you, and to others.

What is the connection between stimulants and PH?

Information from a new study suggests that methamphetamine (speed) use is associated with the occurrence of IPAH. In that study, individuals with IPAH were 10 times more likely to have used stimulants than individuals with PAH associated with other known risk factors.

Interestingly, that risk figure was similar to one found in studies of individuals who developed PAH and had used appetite stimulants (also known as anorexigens). While these are not controlled studies, they do make medical professionals aware of a strong association between stimulant use and PAH. How the two are associated, however (in terms of exactly how a specific stimulant would cause or contribute to the development of PAH), remains unknown.

In addition, we know that amphetamines are similar to diet pills like fenfluramine, which is most well known as one component of the once-popular anti-obesity drug known as Fen-Phen. Fen-Phen has since been withdrawn from the market because of a potential link between use of that drug and development of PH and heart valve problems.

A high rate of stimulant use (including methamphetamine or cocaine depending on the region of the country) is also common among individuals who are both HIV-infected and who have PAH. Scientists are not sure how infection with HIV increases the risk of PAH, but it is possible that stimulant use has played a role in some of those patients.

What kinds of symptoms should I tell my doctor about?

As mentioned previously, it is important to be completely honest with your health care providers about all aspects of your life. In addition, always report symptoms like fatigue or shortness of breath on exertion, or swelling of the hands or feet. If these symptoms are already present, be sure to notify your doctor if they worsen or become more pronounced.

How can a doctor be sure it's PH?

Several different types of screening tests are available, and some are more effective than others. An echocardiogram is a good screening tool but may not always be accurate. A right heart catheterization remains the most accurate diagnostic test.

How is PH treated in patients who have a history of drug use?

Despite the fact that individuals with IPAH were 10 times more likely to have used stimulants than individuals with PAH associated with other known risk factors, there is still a relatively small number of cases where patients have admitted to stimulant use. Therefore, very little data exists on the treatment of this group of patients. Healthcare professionals believe that those who have used stimulants and who now have PAH can be treated the same way as other patients, with similar results.



PHA Resources



The Pulmonary Hypertension Association (PHA) was founded by and for PH patients. The organization has led the way in bringing pulmonary hypertension into the national and international consciousness. PHA is constantly increasing its services to the medical community through educational programming, membership sections for medical professionals, and much more:

Website:

PHA's website is a comprehensive source of information for patients, caregivers and medical professionals. Please visit us at www.PHAssociation.org.

Find a Doctor:

The "Find a Doctor" section of PHA's website allows patients and referring physicians to search for PH-treating physicians by state at: www.PHAssociation.org/Patients/FindADoctor. While PHA does not endorse any of these physicians, PHA strongly recommends that all PH patients see a PH specialist who will be able to provide them with the best PH care.

Pulmonary Hypertension: A Patient's Survival Guide:

This extraordinary 300+ page book was written by a patient and medically reviewed. It presents the illness in a very human and readable way. It is available from PHA at minimal cost, at a discount for PHA members, and one complimentary copy is provided to members of PHA's professional membership bodies. *The Survival Guide* is available for purchase online at www.PHAssociation.org/SurvivalGuide.

Online information about PH:

For information on PH diagnosis, symptoms, treatments and more, visit www.PHAssociation.org/Patients/AboutPH.

Support Groups:

From the first support group started in 1990 around a kitchen table in Florida, PHA grew to 45 in 2001, and to over 215 in 2010. In many places, patients have the opportunity to meet, learn from, and find common understanding with others in similar circumstances. Find a support group in your area at www.PHAssociation.org/LocalSupportGroups.

About the Pulmonary Hypertension Association



The mission of the Pulmonary Hypertension Association is to find ways to prevent and cure pulmonary hypertension, and to provide hope for the pulmonary hypertension community through support, education, advocacy and awareness. PHA's members stand as part of a community that is fighting back against this terrible illness.

PHA fulfills its mission through:

- Funding for research
- Quarterly medical journal *Advances in Pulmonary Hypertension*
- PHA Online University offering free CME credits and the latest information on pulmonary hypertension (www.PHAOnlineUniv.org)
- Professional membership sections:
 - ▶ PH Clinicians and Researchers (PHCR)—for physicians and doctorate-level researchers
 - ▶ PH Resource Network—for nurses and allied health professionals
- Educational conferences and materials for medical professionals and patients
- 300+ page patient's survival guide
- PH patient support groups
- Quarterly newsletter *Pathlight*
- Advocacy and awareness campaigns
- Toll-free Patient-to-Patient Helpline (1-800-748-7274)
- PHA website with PH discussion boards, email groups and online support chats (www.PHAAssociation.org/ConnectOnline)

More Information on Methamphetamine Use

Partnership for a Drug-Free America: www.drugfree.org

PHA would like to thank the following members of the PH medical community for their work in the writing, review and development of this brochure:

Harrison W. Farber, MD

Boston University School of Medicine, Boston, Mass.

Michael A. Mathier, MD, FACC

University of Pittsburgh School of Medicine, Pittsburgh, Penn.



801 Roeder Road, Suite 1000
Silver Spring, MD 20910
Phone: 301-565-3004
Fax: 301-565-3994
Email: PHA@PHAssociation.org
www.PHAssociation.org.

This publication was supported by Contract Number 200-2007-M-22234 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention, the Department of Health and Human Services or the U.S. government.

This publication was produced through an unrestricted educational grant from Actelion Pharmaceuticals US, Inc., Gilead Sciences, Inc. and Pfizer, Inc.

Copyright © 2010 Pulmonary Hypertension Association