

**Pulmonary
Hypertension and
Methamphetamine
Use**

PH &

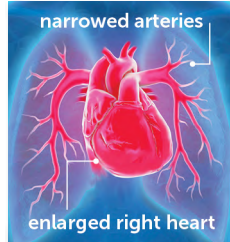


Pulmonary Hypertension Association
Empowered by hope

ABOUT

PULMONARY HYPERTENSION

Pulmonary hypertension is a complex and often misunderstood disease. PH sometimes is confused with systemic hypertension or “high blood pressure” that affects arteries throughout the body.



PH refers to pressure within the blood vessels of the lungs. The blood vessels can become stiff and narrow, which makes it more difficult for the right side of the heart to pump blood through them.

There are five types of PH based on different causes. Each form of PH is different, so it is important for newly diagnosed patients to find PH specialists who can pinpoint the cause of their PH. The specialist then develops a treatment plan specifically for the patient’s type of PH.

Every person with PH is different, and scientists continually conduct new research to improve the outlook for people living with PH. With proper care and treatment, people with PH can live many years.



NORMAL mean pulmonary artery pressure is between 8-20 mmHg at rest.

PULMONARY HYPERTENSION is defined as a resting mean pulmonary artery pressure at or above 20 mmHg.



PH Related to Meth Use

Pulmonary arterial hypertension, or Group 1 PH, occurs when arteries in the lungs become narrow, thick or rigid. The right side of the heart must work harder to push blood through the narrowed arteries. The extra stress can cause the heart to lose its ability to pump enough blood through the lungs to meet the needs of the rest of the body.

Methamphetamine use is a risk factor for developing PAH. Methamphetamine is a highly addictive central nervous system stimulant. Meth can be inhaled, smoked, snorted, taken orally or injected.

Meth use has been associated with an increase in heart diseases, including diseases of the coronary

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arteries and the heart muscle. Meth use is also associated with an increase in lung diseases, such as acute bleeding of the lungs, excess fluid in the lungs, collapsed lungs and pulmonary hypertension.

In 2020, nearly 2.5 million Americans 12 and older reported having used meth in the past year.

Symptoms of PAH related to meth use include:

- > Fatigue.
- > Shortness of breath with exertion.
- > Swelling of the hands or feet.

People with PAH symptoms should notify their health care teams about past or present drug use. Talking openly and honestly about all activities, including drug use, can help doctors determine a prognosis and treatment plan.

Information about drug use also helps researchers understand risk factors for this disease. For example, amphetamines are similar to diet pills like fenfluramine, which was part of the once-popular diet pill Fen-Phen. Fen-Phen is no longer available because of its potential link to PH and heart valve problems.

Diagnosing PH

Doctors who suspect PH can order any of these diagnostic tests:

Echocardiogram: An ultrasound of the heart that provides a rough estimate of the pressure in the lungs. It assesses the function of how blood flows through the heart by examining the right and left ventricles, valves, etc.

Pulmonary function tests: Non-invasive tests that measure how much air the lungs can hold, how much and how quickly someone can blow air, and how oxygen and carbon dioxide are exchanged between the air entering the lungs and the blood circulating through the lungs (diffusion capacity of carbon monoxide).

Ventilation-perfusion (V/Q) scan: Determines whether there are undissolved clots in the blood vessels of the lungs.

Natriuretic peptide tests: Measure specific proteins in a blood sample and help screen for heart failure. Tests of the proteins NT-proBNP (N-terminal pro b-type natriuretic peptide) and BNP (brain natriuretic peptide) are two examples. Elevated levels of these proteins can signify heart failure.

Right heart catheterization: The most accurate diagnostic test for PH. It measures the pressures and flow directly in the pulmonary artery. The invasive procedure usually takes place on an outpatient basis in the hospital. Doctors guide a small tube (catheter) through the right side of the heart and into the pulmonary artery to directly measure the pulmonary artery pressure.

In addition to directly measuring pressures in the heart and lungs, a right heart catheterization can determine whether patients have problems with a stiff left side of the heart. Left heart disease also can cause PH. In those cases, doctors refer patients to a cardiologist to treat the heart disease.

Treatment Options

There are no formal guidelines on the best approach to treat PAH associated with methamphetamine use. Physicians may use FDA-approved therapies for PAH to treat PAH associated with meth. Treatment approaches can vary depending on the physician or treatment center's experience with PAH associated with methamphetamine use.

All patients benefit from following simple, basic measures, such as paying attention to fluid balance and therapies that improve heart function. Those treatments can include supplemental oxygen, diuretics (water pills) and supervised cardiopulmonary rehabilitation programs.

A variety of medications have shown that they slow damage and relieve the symptoms from PAH. The medications are complex, so it's important to consult a physician with knowledge and expertise in treating PAH, such as a specialist at a PHA-accredited PH Care Center.

There also are several ongoing clinical trials to test the performance and safety of new PAH treatments.

People who have stopped using methamphetamine have been observed to respond better to PAH treatment than those who continue to use drugs. However, scientific study on the subject is limited.





ADDITIONAL RESOURCES

988 Suicide & Crisis Lifeline:
For 24/7 emotional and substance
use support, call or text 988.

SAMHSA's National Helpline:
800-662-HELP (4357).

REFERENCES

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and Prevention, 2019 Annual
Surveillance Report of Drug-
Related Risks and Outcomes,
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About the Pulmonary Hypertension Association

Headquartered in Washington, D.C., the Pulmonary Hypertension Association is the oldest and largest nonprofit patient association dedicated to the pulmonary hypertension community. PHA's mission is to extend and improve the lives of those affected by PH.

PHA engages people with PH and their families, caregivers, health care providers and researchers, who work together to advocate for the PH community, provide support to patients, caregivers and families, offer up-to-date education and information on PH, improve quality patient care, and fund and promote research. For information, visit PHAssociation.org.

PHA's mission is to extend and improve the lives of those affected by pulmonary hypertension. PHA's vision is a world without PH, empowered by hope.



-  **301-565-3004**
-  **Support Line: 800-748-7274**
-  **PHAssociation.org**
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