

Acid rain, also called **acid precipitation** or **acid deposition**, precipitation possessing a pH of about 5.2 or below primarily produced from the emission of sulphur dioxide (SO_2) and nitrogen oxides (NO_2 ; the combination of NO and NO_2) from human activities, mostly the combustion of fossil fuels. In acid-sensitive landscapes, acid deposition can reduce the pH of surface waters and lower biodiversity. It weakens trees and increases their susceptibility to damage from other stressors, such as drought, extreme cold, and pests

Normal rainwater is weakly acidic because of the absorption of carbon dioxide (CO_2) from the atmosphere—a process that produces carbonic acid—and from organic acids generated from biological activity. In addition, volcanic activity can produce sulphuric acid (H_2SO_4), nitric acid (HNO_3), and hydrochloric acid (HCl) depending on the emissions associated with specific volcanoes. Other natural sources of acidification include the production of nitrogen oxides from the conversion of atmospheric molecular nitrogen (N_2) by lightning and the conversion of organic nitrogen by wildfires. However, the geographic extent of any given natural source of acidification is small, and in most cases it lowers the pH of precipitation to no more than about 5.2..

Acid rain that may fall directly in these water bodies or may be washed into them as surface runoff, alter their chemical environment. The flora and fauna in these water bodies are adapted for life in the original pH value of the water. Altered acidity of their environment may be a threat to their survival. Acid rain falling on the soil, change soil acidity. In its bid to neutralize this change in pH, soil releases substances that are toxic for trees growing on it. Acidic water also dissolve nutrients in the soil and as it runs off the surface, it carries these essential minerals away

with it, before they can be absorbed by flora growing on the forest floor. The emissions of nitrogen oxide and sulphur dioxide cause respiratory problems like throat, nose and eye irritation; headache; asthma; and dry coughs. Acid rain is particularly harmful for those who have difficulty in breathing or suffer from asthma. In fact, even the lungs of healthy people can be damaged by the pollutants in acid air.

- i. One of the most fundamental acid rain solutions is to utilize fuels that burn more cleanly, or to burn coal more efficiently. This will greatly reduce the possibilities of acid rain developing in the atmosphere.
- ii. For industrial power plants, there are many more acid rain solutions that must be enforced, as they are clearly the biggest contributors to the formation of acidified water droplets in the atmosphere. Industries must regularly inspect and clean all their emission equipment and chimneys and pipes.
- iii. Besides fossil fuels, there is a wide range of alternative energy sources that can generate electrical power. These include wind energy, geothermal energy, solar energy, hydropower, and nuclear power. Harnessing these energy sources can offer effective electrical power alternatives instead of using fossil fuels.
- iv. turning off lights or electrical appliances when not using them; use public transport; use energy efficient electrical appliances; and use of hybrid vehicles or those with low NO₂ emissions.

Drug addiction, also called substance use disorder, is a disease that affects a person's brain and behaviour and leads to an inability to control the use of a legal or illegal drug or medication. Substances such as alcohol, marijuana and nicotine also are considered drugs. When you're addicted, you may continue using the drug despite the harm it causes.

Drug addiction can start with experimental use of a recreational drug in social situations, and, for some people, the drug use becomes more frequent. For others, particularly with opioids, drug addiction begins with exposure to prescribed medications, or receiving medications from a friend or relative who has been prescribed the medication.

The risk of addiction and how fast you become addicted varies by drug. Some drugs, such as opioid painkillers, have a higher risk and cause addiction more quickly than others.

As time passes, you may need larger doses of the drug to get high. Soon you may need the drug just to feel good. As your drug use increases, you may find that it's increasingly difficult to go without the drug. Attempts to stop drug use may cause intense cravings and make you feel physically ill (withdrawal symptoms).

You may need help from your doctor, family, friends, support groups or an organized treatment program to overcome your drug addiction and stay drug-free.

Symptoms

Drug addiction symptoms or behaviours include, among others:

- Feeling that you have to use the drug regularly — daily or even several times a day
- Having intense urges for the drug that block out any other thoughts
- Over time, needing more of the drug to get the same effect
- Taking larger amounts of the drug over a longer period of time than you intended
- Making certain that you maintain a supply of the drug
- Spending money on the drug, even though you can't afford it
- Not meeting obligations and work responsibilities, or cutting back on social or recreational activities because of drug use
- Continuing to use the drug, even though you know it's causing problems in your life or causing you physical or psychological harm
- Doing things to get the drug that you normally wouldn't do, such as stealing
- Driving or doing other risky activities when you're under the influence of the drug
- Spending a good deal of time getting the drug, using the drug or recovering from the effects of the drug
- Failing in your attempts to stop using the drug
- Experiencing withdrawal symptoms when you attempt to stop taking the drug