

# Chronic obstructive pulmonary disease increases the risk of sudden cardiac death

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People suffering from the common lung disease, chronic obstructive pulmonary disease (COPD), have an increased risk of sudden cardiac death (SCD), according to new research published online today (Wednesday) in the *European Heart Journal*.

When compared with people of the same [age](#) and sex who do not have the disease, those with COPD have a 34% increased risk of SCD overall, but their risk almost doubles more than five years after first being diagnosed with COPD. In COPD patients who have frequent exacerbations (sudden worsening of their symptoms, such as shortness of breath and cough), the risk of SCD increases more than three-fold after five years.

The Rotterdam study of nearly 15,000 people aged 45 and older is the first to show that COPD is associated with an increased risk of SCD in the general population and that this remains the case even when taking into account the fact that COPD is known to increase the risk of death from any cause.

The researchers say that their findings should help doctors to assess their patients' risk of SCD more accurately, as well as suggesting directions for further research into how to target preventive action more effectively for patients with COPD. Preventive treatments could include beta-blockers, implantable cardioverter defibrillators (ICD) to regulate heartbeat, or the withdrawal of drugs that prolong the interval between the two waves (Q and T) of the heart's electrical cycle, such as

adrenaline, various cold remedies, some antibiotics and anti-depressants.

"Sudden cardiac death (SCD) is a major health problem; however, risk stratification remains difficult and probably not all risk indicators have been identified," they write in their EHJ paper. "Chronic [obstructive pulmonary disease](#) (COPD) has been associated with an [increased risk](#) of [cardiovascular disease](#) and with SCD in specific high-risk patient populations. This study shows that COPD is a risk indicator for SCD in the general population and that the risk increases with COPD severity. This provides directions for further measures to prevent SCD."

Dr Lies Lahousse, who led the research and is a post-doctoral researcher in the Department of Respiratory Medicine at Ghent University Hospital, Belgium, said: "We are carrying out further research to explore the mechanisms that could explain the high risk of SCD in patients with COPD. We are also looking at the links between the causes of arrhythmias - irregular heart beats - and SCD and COPD."

A co-author of the paper, Dr Marieke Niemeijer, a medical doctor and PhD student in the Department of Epidemiology at Erasmus Medical Centre, Rotterdam, The Netherlands, said: "The most important way to prevent COPD and SCD is not to smoke and to have a healthy lifestyle. If a person does develop COPD, then this is even more important, as smoking, an unhealthy and a sedentary lifestyle have been proven to increase the risk of SCD. Therefore, smoking cessation is not only important for the course of COPD but also for the development of heart problems and, subsequently, the occurrence of SCD."

SCD is a sudden, unexpected death caused by the heart ceasing to work. It is responsible for approximately half of all the four to five million [heart disease](#) deaths worldwide. It has a number of causes, which makes it difficult to assess adequately a person's risk and to plan prevention strategies. COPD is the world's third leading cause of death, with

smoking as the most significant cause of the disease. It is also more likely to develop as people age. Chronic inflammation in the airways and lungs leads to progressive limitation of airflow, and patients have a two- to three-fold higher risk of developing diseases of the heart and blood vessels.

The ongoing Rotterdam study, which started in 1990 in The Netherlands, has been following 14,926 people living in the community, aged 45 and older, for up to 24 years. The participants have regular medical examinations and are continuously monitored so that deaths and medical conditions and diseases are recorded.

The researchers in The Netherlands and Belgium included 13,471 people from the study in their analysis; of these, 1615 were diagnosed with COPD. Of the 5197 (39%) study participants who died, 551 died due to SCD during the follow-up period and of these 82 (15%) had COPD and 469 (85%) did not. People with COPD who died due to SCD were more likely to die during the night.

**More information:** "Chronic obstructive pulmonary disease and sudden cardiac death: the Rotterdam study", by Lies Lahousse et al. European Heart Journal. [DOI: 10.1093/eurheartj/ehv121](https://doi.org/10.1093/eurheartj/ehv121)

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