



**Medical  
Blueprints**

## **AI PREDICTS HOW LONG YOU HAVE TO LIVE REPORT #2722**

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**BACKGROUND:** When congestive heart failure (CHF) happens, blood and fluid can back up in your body and make it harder for your kidneys to flush out sodium and water. That makes you hold on to too much fluid, which then causes swelling. There is no cure for CHF. Your doctor may recommend medication to help lower blood pressure, relax your blood vessels, make your heart beat stronger, or ease swelling. Diet and lifestyle changes are known to help, too. Nearly 5 million Americans are currently living with CHF, and approximately 550,000 new cases are diagnosed in the U.S. each year. CHF affects people of all ages, from children and young adults to the middle-aged and elderly. Almost 1.4 million people with CHF are under 60 years of age; and 2 percent of persons age 40 to 59; and more than 5 percent of persons age 60 to 69 have CHF.

(Source: <https://www.webmd.com/heart-disease/heart-failure/congestive-heart-failure-facts> and <https://www.emoryhealthcare.org/heart-vascular/wellness/heart-failure-statistics.html>)

**SYMPTOMS, DIAGNOSIS AND TREATMENT:** The diagnosis of congestive heart failure is based on knowledge of the individual's medical history, a careful physical examination, and selected lab tests. The treatment can include lifestyle modifications, addressing potentially reversible factors, medications, heart transplant, and mechanical therapies. It is important to know that both sides of the heart may fail to function at the same time, and this is called biventricular heart failure. This often occurs since the most common cause of right heart failure is left heart failure. The most common symptom of left heart failure is shortness of breath and may occur while at rest, with activity or exertion, while lying flat, while awakening the person from sleep, fluid (water, mainly) accumulation in the lungs or the inability of the heart to be efficient enough to pump blood to the organs of the body when called upon in times of exertion or stress. Chest pain or angina may be associated, especially if the underlying cause of the failure is coronary heart disease.

(Source: [https://www.medicinenet.com/congestive\\_heart\\_failure\\_chf\\_overview/article.htm](https://www.medicinenet.com/congestive_heart_failure_chf_overview/article.htm))

**AI USED TO PREDICT HEART ATTACKS:** New research says artificial intelligence (AI) could be used to predict those at risk of a fatal heart attack up to five years in advance. Experts at the University of Oxford have developed a “fingerprint”, or biomarker, using machine learning. The fat radiomic profile (FRP) detects biological red flags in blood vessels that supply blood to the heart, identifying inflammation, scarring and changes to the vessels. All these red flags point to a future heart attack. There’s currently no routine method used by doctors to spot underlying red flags of a future heart attack. Researchers hope their AI tool will bridge this gap. Lead researcher, Charalambos Antoniades, professor of cardiovascular medicine and British Heart Foundation senior clinical fellow at the University of Oxford, said, “By harnessing the power of AI, we’ve developed a fingerprint to find ‘bad’ characteristics around people’s arteries. This has huge potential to detect the early signs of disease, and to be able to take all preventative steps before a heart attack strikes, ultimately saving lives.”

(Source: <https://www.digitalhealth.net/2019/09/artificial-intelligence-predicts-heart-attacks/>)

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