



Moderna begins trialing mRNA shot that is injected directly into the HEART to treat heart attack patients

## Description

- The shot encodes for relaxin, a hormone which is known to improve blood flow
- Patients have received the injection in a phase one trial looking at dosage levels
- **Moderna CEO Stéphane Bancel told Sky News: 'It's like science fiction medicine'**

[Moderna](#) is developing an mRNA shot that is injected directly into the hearts of heart attack and heart failure patients.

The 'vaccine' uses the same technology as the company's [flagship Covid jab](#) and is designed for people weeks or months after a heart attack to help them recover.

It works by instructing human heart cells to generate a hormone that is known to improve blood flow, helping restore damaged heart muscles.

During a heart attack, muscle cells can start to die and cannot be re-generated. Roughly one in five people who have had a heart attack will be readmitted to the hospital for a second one within five years.

Patients with stable heart failure have received the shot in a phase one clinical trial, Moderna said this week. The injection encodes for relaxin, a naturally occurring hormone that is known to improve blood flow

This week, the drug maker announced that the first patients were given the injection in a phase one clinical trial.

Moderna CEO Stéphane Bancel told Sky News Australia in October: 'We have now in the clinic a super exciting program where we inject mRNA into people's hearts after a heart attack to grow back new blood vessels to help revascularize the heart.

'It's a bit like science fiction medicine but that's what is really exciting to me.'

In its latest business update, Moderna this week announced that the first patients have been given the injection, called mRNA-0184, in a phase 1B clinical trial.

The patients have stable heart failure and the trial will determine how safe the shot is and how well patients can tolerate it, as well as perfecting the dosage amount and frequency.

Heart attacks occur when there is a loss of blood supply to the heart, while heart failure is when the heart is unable to pump blood around the body efficiently.

Heart failure can develop after a heart attack if the muscle was severely damaged.

The new shot uses messenger RNA, which carries a cell's instructions for making proteins.

DNA, which is stored in a cell's nucleus, encodes the genetic information for making proteins or hormones.

mRNA transfers a copy of this genetic information outside of the nucleus, to a cell's cytoplasm, where it can be made into proteins and hormones.

The synthetic mRNA encodes for relaxin, a naturally occurring hormone that is known to cause changes to blood flow that are 'potentially beneficial for heart failure patients', Moderna said.

By injecting the heart with synthetic mRNA that encodes for relaxin, the mRNA shot directs human cells to generate the hormone.

Moderna said: 'The mRNA sequence of mRNA-0184 is engineered to instruct the body to produce relaxin with an extended half-life, with the goal of producing a sustained clinical benefit in heart failure patients – this longer half-life may result in more durable effects compared to previous approaches.'

Increased blood movement allows for new blood vessels to grow and helps restore blood flow along arteries and veins.

By Caitlin Tilley, Health Reporter For Dailymail.Com

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