



# Coronary Heart Disease

## Why in News?

[Cardiovascular diseases](#) are the leading cause of death worldwide, with **coronary heart disease** being a major concern among researchers.

## What is Coronary Heart Disease?

- **About:**
  - **Coronary heart disease (CHD)** is a condition in which the **blood vessels** that supply the heart with oxygen-rich blood become narrow due to the **buildup of fatty deposits (plaques) inside the arteries**.
  - Over time, these deposits can **harden and narrow the arteries**, reducing the flow of blood to the heart.
- **Causes:**
  - **Unhealthy lifestyles**, poor diets, physical inactivity, tobacco use, and harmful levels of alcohol consumption are the major contributors to **coronary heart disease**.
    - Damaged heart tissue cannot be regrown in humans, and the **only option is to undergo [heart transplant](#)**, which comes with its own complications.
- **Recent Studies:**
  - A group of scientists has come up with a **solution where healthy skin cells from an adult can be converted into heart cells** using special proteins.
    - Converting cells from one form to another, known as [cellular reprogramming](#), involves specific proteins called **transcription factors**, which alter the expression of genes within a cell and direct it to take on a new cellular identity.
  - The researchers established a **recombinant protein toolbox consisting of six potential cardiac transcription factors: GATA4, MEF2C, TBX5, ETS2, MESP1, and HAND2**.
    - Each of these proteins plays a significant role in **reprogramming fibroblasts**.
  - The advantage of using recombinant proteins is that they work their miracle inside the nucleus and eventually disappear over time **without leaving behind their toxic waste**, unlike their generic counterparts.

## What are the Initiatives to Promote Awareness About Cardiovascular Diseases?

- **Indian:**
  - [National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke \(NPCDCS\)](#)
  - [ST-Elevation Myocardial Infarction \(STEMI\) Project](#)
- **Global:**
  - [World Heart Day \(29<sup>th</sup> September\)](#)

## Conclusion

This study offers a safer approach for direct cardiac reprogramming using [recombinant proteins](#), which can then be used to **reprogram cardiac fibroblasts and provides hope for those suffering from heart disease** and the possibility of developing a **personalised treatment** option that is both safe and efficient.

[Source: TH](#)

PDF Refernece URL: <https://www.drishtias.com/printpdf/coronary-heart-disease>