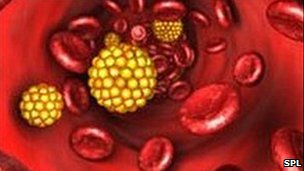
8 March 2011 Last updated at 22:02

**BBC**

**Edinburgh study finds cholesterol link to immune system**



Lowering cholesterol could help the body's immune system fight viral infections, researchers have said.

A study by Edinburgh University scientists found when the body succumbs to a viral infection a hormone in the immune system lowers cholesterol.

Cholesterol produced by cells is needed for viruses to grow.

Therefore limiting the body's cholesterol would curb the chance for viruses to thrive, the researchers said.

The academics also said it may be possible to use cholesterol-lowering drugs to boost the immune system.

Professor Peter Ghazal, of the university's division of pathway medicine, said: "What we have discovered is that a key immune hormone stimulated upon infection can lower cholesterol levels and thereby deprive viral infections of the sustenance they need to grow.

"Drugs currently exist to lower cholesterol levels, but the next step would be to see if such drugs would also work to help bolster our immune systems."

The research was funded by the Wellcome Trust, the Biotechnology and Biological Sciences Research Council, the Engineering and Physical Sciences Research Council and the British Heart Foundation.

**REUTERS**

**Curbing cholesterol may fight infections: study**

By Kate Kelland

Tue Mar 8, 2011 10:00pm GMT

Lowering cholesterol levels could help the body's immune system fight infections, British scientists said on Tuesday.

A study in mice by researchers at the University of Edinburgh found a direct link between the workings of the immune system and cholesterol levels.

"What we have discovered is that a key immune hormone stimulated upon infection can lower cholesterol levels and thereby deprive viral infections of the sustenance they need to grow," said Edinburgh's Peter Ghazal, whose study was published in the Public Library of Science (PLoS) Biology journal.

"Drugs currently exist to lower cholesterol levels, but the next step would be to see if such drugs would also work to help bolster our immune systems," he said.

Medicines called statins, such as Pfizer's Lipitor, AstraZeneca's Crestor, and a generic called simvastatin, are widely prescribed to lower "bad" or LDL cholesterol -- a risk factor for heart disease -- and are credited with being among the most successful drugs in helping to prevent heart attacks and strokes.

In a telephone interview, Ghazal said many years of research work lay ahead before these findings could be translated into human treatments, but he thought statin-like drugs could in future be developed to have potent anti-infective effects as well as being able to reduce levels of bad cholesterol.

Currently, antiviral drugs are used to fight viral infections by targeting the machinery that enables viruses to multiply.

Antibiotics are used to fight bacterial infections, but bugs are able to mutate and develop new strains that are drug-resistant, prompting the need for new and more powerful medicines to be developed all the time.

Ghazal said his research team hoped to use the studies to find news ways of combating infections, which could for example involve mimicking immune signals sent out to lower the production of cholesterol.

Such treatments would help overcome the problems of drug resistance, Ghazal said, since they would aim to enhance the way the body responds to an infection, instead of focusing on attacking the bug itself.

SOURCE: [bit.ly/i8qJvH](http://bit.ly/i8qJvH) Public Library of Science (PLoS) Biology, online March 8, 2011.

The Daily Telegraph (London)

March 9, 2011 Wednesday   
Edition 2;   
National Edition

**Statins 'could help body fight** **infection'**  
**SECTION:** NEWS; Pg. 14  
  
**LENGTH:** 181 words

Statins could boost the immune system and lower the risk of infection, new research has found.

Scientists from the University of Edinburgh have found that the body naturally lowers cholesterol levels during an infection because viruses like to "feed" off it.

Limiting its production by using statins therefore curbs the invader's ability to thrive.

Professor Peter Ghazal, who led the study, said: "A key immune hormone stimulated upon infection can lower cholesterol levels and thereby deprive viral infections of the sustenance they need to grow.

"Drugs currently exist to lower cholesterol levels, but the next step would be to see if such drugs would also work to help bolster our immune systems."

While he said statins could work to boost the immune system, smart drugs could potentially be created which worked in a much more targeted way.

Such drugs could provide alternatives to antibiotics, he said.

They would avoid the problem of bacteria developing antibiotic resistance, because they would work on the way the body itself responded to infection, rather than attacking the bacteria.

The Scotsman

March 9, 2011, Wednesday   
1 Edition

**Lower cholesterol could help fight viruses**  
**BYLINE:** Lyndsay Moss Health Correspondent  
  
**SECTION:** Pg. 19  
  
**LENGTH:** 433 words

Cutting cholesterol could help the body's immune system fight viral infections, researchers in Scotland have suggested.

The scientists, from the University of Edinburgh, said they had found a "direct link" between the workings of the immune system and cholesterol levels in the body.

Their research, published in the journal PLoS Biology, found that when the body succumbs to a viral infection a hormone in the immune system sends signals to blood cells, causing cholesterol levels to fall.

Cholesterol produced by the body is needed by viruses and certain types of bacteria to maintain growth.

Limiting the body's production of cholesterol would help curb the opportunity for the viruses to thrive by cutting off this source of energy.

The researchers said the findings could lead to new ways of treating viral infections, targeting the actions of cholesterol in the body.

Currently drugs such as antibiotics are used to fight infections by targeting the bug directly.

But a new treatment would help overcome the problems associated with antibiotic resistance, as it enhances the way the body responds to an infection, instead of focusing on attacking the infection itself.

Cholesterol is a fatty substance which is found in the blood and is mainly made in the body.

The substance plays an essential role in how cells in the body work, but too much cholesterol in the blood can increase the risk of heart problems.

A common cause of high blood cholesterol levels is eating too much saturated fat and people are often advised to change their diet to reduce their risk of heart problems.

Doctors also frequently prescribe drugs known as statins which help lower cholesterol and cut people's risks.

Statins are one of the most commonly prescribed drugs in Scotland.

It now seems that reducing cholesterol levels could have an extra benefit in helping the body to fight infections.

Professor Peter Ghazal, of the university's Division of Pathway Medicine, said cutting off the supply of cholesterol needed by viruses could help in the battle against infections.

"What we have discovered is that a key immune hormone stimulated upon infection can lower cholesterol levels and thereby deprive viral infections of the sustenance they need to grow," the researcher said.

"Drugs currently exist to lower cholesterol levels, but the next step would be to see if such drugs would also work to help bolster our immune systems."

The research was funded by the Wellcome Trust, the Biotechnology and Biological Sciences Research Council, the Engineering and Physical Sciences Research Council and the British Heart Foundation (BHF).

The Sun (England)

March 9, 2011 Wednesday   
Edition 1;   
Scotland

**Fats link to viruses**  
**SECTION:** NEWS; Pg. 24  
  
**LENGTH:** 86 words

CUTTING cholesterol could help people fight off illnesses, scientists have found.

A team at Edinburgh University discovered a "direct link" between the substance and how the immune system battles viral infections.

Drugs that cut cholesterol could be used like antibioics, but wouldn't face the problems of resistance building up.

The research was published in the journal PLoS Biology.