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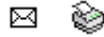
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VOICE ONE:

This is Sara Long.

VOICE TWO:

And this is Bob Doughty with Science in the News, a VOA Special English program about recent developments in science. Today, we tell about efforts by scientists to identify special genes. They are the genes of the bacterium that causes the disease plague, the gene for a language disorder and the gene that enables people to live to be very old.

((THEME))

VOICE ONE:

Scientists have identified all the genes of the bacterium that causes plague. The new genetic information could help scientists develop treatments and vaccines to prevent the disease.

Plague is one of the most feared of all diseases. It has killed more than two-hundred-million people during the past one-thousand-five-hundred

one-thousand-five-hundred years. In recent weeks, plague has again become a concern. Some reports say terrorists could use it as a biological weapon. The disease usually results in death if patients are not treated.

VOICE TWO:

Scientists at the Sanger Center in Cambridge, England identified the genetic material in the plague bacterium. They described their work in the publication Nature. Their work helps explain how the disease developed.

Studies have shown that the deadly bacterium developed about one-thousand-five-hundred years ago. Before then, the bacterium caused mild stomach pains in people infected with the disease. Researchers say it changed to a deadly disease by gaining and losing genetic material.

VOICE ONE:

Plague is spread when a flea bites an animal infected with the disease. Then the insect bites a human victim. The bacteria infect the lymph nodes in an area near the bite. This causes areas of skin to expand and become painful. The disease also causes high body temperatures, body pain and tiredness.

The bacteria may also enter blood passages and spread to other parts of the body. In some cases, the bacteria can spread to the lungs. Victims can spread the bacteria when they cough or sneeze. This form of the disease can quickly cause death.

VOICE TWO:

Plague has killed large numbers of people during several periods of history. The most famous was in the Fourteenth Century. The disease killed one-third of the population of Europe. It became known as the Black Death. Modern plague first spread from southern China in Eighteen-Ninety-Four. By Nineteen-Hundred the disease had spread around the world. It killed more than twelve-million people in India alone.

Today, plague is still a problem in some parts of the world, including the southwestern United States. Up to three-thousand cases of the disease are reported each year around the world. The disease kills about two-thousand people each year, mostly in Africa and Asia.

Antibiotic drugs are an effective treatment. There also are vaccines to prevent the disease. However, treatments must be given soon after someone becomes

infected.

VOICE ONE:

Some scientists fear that the bacterium may be used as a weapon by terrorists. They are concerned there would not be enough treatments for the possible large numbers of victims. This had led to a debate about releasing genetic information about such diseases. However, officials say the information would not be helpful for terrorists. A scientist at Britain's biological defense laboratory said he saw no danger in publishing the genetic information about plague. He said the findings are much more valuable for scientists who want to develop vaccines and antibiotics against the disease.

((MUSIC BRIDGE))

VOICE TWO:

You are listening to the Special English program SCIENCE IN THE NEWS on VOA. This is Bob Doughty with Sarah Long in Washington.

((MUSIC BRIDGE))

British scientists say they have identified a gene linked to human speech and language. It the first gene identified as a cause of a speech and language disorder. The discovery supports the idea

discovery supports the idea that information in genes controls language ability in humans. A group led by Anthony Monaco (MAH-nuh-ko) led the study. He is director of the Wellcome Trust Center for Human Genetics at the University of Oxford in England. His team reported its findings in Nature magazine.

VOICE ONE:

The scientists identified the gene through the study of a large British family. About half the family members have a rare speech and language disorder. Affected individuals have trouble saying words correctly. They have trouble moving their lips, tongues and mouths. They do not use the correct rules of language.

The study shows that all the affected people have a changed piece of D-N-A in one gene. The gene is on chromosome seven. That is the seventh of forty-six chromosomes found in human cells. Independent genetic studies of an unrelated person with the same disorder helped confirm the findings.

VOICE TWO:

The scientists believe the affected gene is important in the development of some areas of the brain. They say those areas are probably involved in the development of language

the development of language.

Mister Monaco is now studying the structure of the gene and its development in animals. He is attempting to find out if the gene developed faster in humans than animals.

VOICE ONE:

Other scientists, however, say they believe the gene may be less involved in language than it seems. Bruce Tomblin is a speech expert at the University of Iowa. He agrees that the speech disorder appears to have a genetic cause. But he notes that the gene and the ones it controls may have additional duties.

The head of the Center of Language Research at the University of California at San Diego agrees with this position. Elizabeth Bates says other studies show that the family with the disorder has problems with musical sounds and with hand movements. To her, this suggests the gene is involved with more than just speech and language.

((MUSIC BRIDGE))

VOICE TWO:

In the year Nineteen-Hundred, a baby born in the United States could expect to live to be about forty-nine years old. Today, the life expectancy for a baby in the United States is

seventy-seven years. The main reasons for this change are better food, improved medical care and cleaner water and waste removal systems.

Some scientists say this may explain why people live to be seventy or eighty. But only an extremely small number of Americans live to be one-hundred years old. Many of these people have brothers or sisters older than ninety. Some scientists believe these people have genes that help protect them from diseases.

VOICE ONE:

A group of researchers from Boston, Massachusetts wanted to find out more about such family groups. They studied one-hundred-thirty-seven groups of very old brothers and sisters. One person in each group was at least ninety-eight years old. The brother or sister was at least ninety-one. There were three-hundred-eight people in the study. The oldest was one-hundred-nine years old.

VOICE TWO:

The researchers say they made progress in finding the gene that may permit some people to live extremely long lives. The scientists took blood samples and tested the genes of all the sisters and brothers in the study. They compared

genetic structures to find genes that might be linked to aging. They found an area in one chromosome that appears to contain a gene or genes that may be linked to extreme old age. This one part of the chromosome has between one-hundred and five-hundred genes. The scientists say it is not clear which one or how many of the genes may affect long life.

VOICE ONE:

The researchers believe the gene or genes may somehow provide resistance to disease. This may explain why many people older than one-hundred remain healthy and active. The researchers reported the results of their study in the Proceedings of the National Academy of Sciences.?

Scientists say more work needs to be done to find the gene or genes involved in living to be very old. They say such work could result in drugs that could help people without those genes to live longer.


((THEME))


VOICE TWO:

This SCIENCE IN THE NEWS program was written by George Grow and Nancy Steinbach. It was produced by George Grow. This is Bob Doughty.

VOICE ONE:

And this is Sarah Long. Join us again next week for more news about science in Special English on the Voice of America.

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