

Tekst 6

# Darwin's Revenge

Why are we getting fat?



By Fred Guterl with Anne Underwood

- 1 Of nature's many weather conditions, winter at the Arctic Circle would have to be one of the harshest. It's hard to imagine that humans would have survived generations of frigid climate without some adaptation giving them a way to cope. Scientists have in fact put forward a theory about a "thrifty genotype" that some humans acquired 30,000 or so years ago during their migration from Asia, across a land bridge at what's now the Bering Strait, to North America. These genes may have given cold warriors an ability to store fat and metabolize it sparingly, a handy trait for the dark, cold months when food is scarce.
- 2 Now that the land bridge is long gone, the descendants of these first North Americans are stuck with genes optimized for life in the Ice Age. The same traits that allowed their ancestors to thrive in the Arctic wilderness may be making them uniquely vulnerable to the high-fat, high-cholesterol, sedentary American lifestyle. The problem with evolution is that it can't keep pace with the modern world.

- 3 Asians are thought to possess many of the "thrifty-genome traits", which may explain why the number of obese Chinese doubled between 1992 and 2002 to 60 million, according to China's Health Ministry. Some Mediterraneans and Africans may not have acquired the thrifty genes of Arctic peoples, but their hunting-and-gathering ancestors didn't leave them a whole lot better equipped. Half of Brazil is now overweight, and one in eight is obese. In France and Italy, about one in three is overweight, and the proportion is rising. All told, about 1.2 billion people in the world are fat, and another 350 million are obese. Obesity-related illnesses, such as heart disease and diabetes, are rising.
- 4 Scientists are beginning to appreciate the variations in how different people respond to diet. For most people, particularly Asians, eating food rich in saturated fats will generally increase the level of "bad" cholesterol and decrease the "good" cholesterol. "When Asians move from their traditional environment to the West" - or when they start eating at their local McDonald's in Tokyo or Beijing - "they immediately get into trouble with obesity and heart disease - more than Caucasians," says Jose Ordovas, director of the Nutrition and Genomics Laboratory at Tufts University. By the same token, Northern Europeans and Celts, and some Mediterranean populations, tend to have the same cholesterol levels no matter what they eat - the work of a gene inherited from Viking ancestors.
- 5 A person's vulnerability to the diseases associated with obesity depends not just on diet but on his level

of activity as well. And there's some evidence that activity is a product of biology as well as culture. A paper published by Dr. James Levine, a nutritionist and endocrinologist at the Mayo Clinic in Rochester, Minnesota, reports that a genetic predisposition to obesity may turn on how much a person fidgets. People who fidget turned out to expend 350 calories a day more on average than those who don't - the equivalent of a weight gain of 30 or 40 pounds in a year - merely by getting up and moving around more. Studies suggest a neurochemical basis for the natural tendency to fidget. 29, rats injected with the neuropeptide orexin began to "run around their cages like crazy," says Levine. But scientists are

only beginning to get a handle on the problem. There's a possibility that fat in the body slows down the metabolism over the long term. What's certain is that thrifty genes work in more complex ways than scientists appreciate at present. "There's a profound interplay going on between the amount of energy people take in and their level of activity," he says.

- 6 The question scientists would ultimately like to answer is how to compensate for the obsolete genes we've inherited from our primitive ancestors. Identifying the hundreds of genes involved - let alone figuring out how to 32 their ill effects - won't be easy. Undoing thousands of years of evolution never is.

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- 1p **26** How is paragraph 2 related to the matter discussed in paragraph 1?  
Paragraph 2
- A discredits scientific research into the "thrifty genotype".
  - B gives an explanation for the successful transformation of the "thrifty genotype".
  - C presents the negative consequences of people having the "thrifty genotype".
  - D questions the presence of the "thrifty genotype".
- 2p **27** Geef voor elk van de onderstaande beweringen aan of deze wel of niet in overeenstemming is met de inhoud van alinea 3.
- 1 China underestimates the consequences of its population getting too fat.
  - 2 There is a global increase in the number of people suffering from weight problems.
  - 3 Some people in Africa and the Mediterranean have healthier diets than elsewhere.
  - 4 The genetic make-up of Asians is the most ancient in the world.
- Noteer het nummer van elke bewering, gevolgd door "wel" of "niet".
- 1p **28** Which of the following characterises paragraph 4?
- A It excludes the role of genetic factors causing weight problems in Asians.
  - B It gives more information on the possible impact of genetic factors in causing weight problems.
  - C It outlines how genetic factors influence people's diets.
  - D It presents theories which do not focus on genetics to explain weight problems.
- 1p **29** Which of the following fits the gap in paragraph 5?
- A Apart from this
  - B Besides
  - C For instance
  - D Nevertheless
- 1p **30** What is the main point made in paragraph 5?
- A Cultural differences explain why some people are physically more active than others.
  - B Only a healthy balance between dieting and working-out can prevent weight problems.
  - C People's tendency to get fat is probably determined by a combination of genetic factors.
  - D Scientists underestimate the hard work involved in finding a cure against obesity.

- 1p 31 “Undoing ... never is.” (last paragraph)  
Which of the following touches on the same point as the quotation does?  
A “It’s hard ... to cope.” (paragraph 1)  
B “Now that ... Ice Age.” (paragraph 2)  
C “Scientists are ... to diet.” (paragraph 4)  
D “Studies suggest ... to fidget.” (paragraph 5)
- 1p 32 Which of the following fits the gap in paragraph 6?  
A categorize  
B duplicate  
C neutralize  
D recognize