

The end of the male gene pool?

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- 1 Nature deals some unkind blows, but none is more hurtful to the pride of man than the looming demise of the Y chromosome.
- 2 When it comes to sex chromosomes, women are XX and men are XY. But the modern male chromosome is not what it used to be. Over millions of years of evolution, the biological keeper of all things male has withered and shrunk. So dramatic has the decline been, that one day the Y might vanish completely.
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- 7 Aficionados of the "rotting Y" theory point to other species known to have lost Y chromosomes. Some Japanese spiny rats thrive without a male chromosome. Were the same to happen in humans, the genes for maleness would have to hitch a ride on another chromosome.

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Tekst 3 The end of the male gene pool?

- 1p 5 What is the point made in paragraphs 1 and 2?
- A In the past the male Y chromosome used to be more substantial.
 - B Men are hardly able to cope with challenges of their male pride.
 - C Procreation may one day be realised without male participation.
 - D The male physique is deteriorating at an alarming pace.

De onderstaande alinea's a tot en met d stonden oorspronkelijk tussen alinea's 2 en 7.

- a He said: "Everyone agrees the demise of the Y chromosome, if it happens, does not mean the demise of the human male. All that will happen is that the process of sex chromosome evolution will start again."
- b That may be wishful thinking. A few hundred million years ago, the X and Y chromosomes were the same size. Today, the Y chromosome holds fewer than 30 genes, against the X chromosome's 800 or so. "If you draw a straight line, the Y chromosome's demise would come four or five million years from now," said Darren Griffin, professor of genetics at the University of Kent in Canterbury, who nevertheless remains undecided on the issue.
- c The researchers studied the genes on the human Y chromosome and compared them with those on the Y chromosomes of chimpanzees and rhesus macaques. The latter split from the human lineage 25m years ago. Hughes found that only one gene had been lost from the human Y chromosome since then. The rapid decline of the Y chromosome seems to have ground to a halt. "We are hoping this evidence will put the extinction of the Y to rest once and for all," Hughes said.
- d This prospect is seriously debated among biologists. At a genetics conference in Manchester last year, half of those attending thought the Y chromosome was bound for oblivion. Hope may be at hand, though. Writing in the latest issue of *Nature*, Jennifer Hughes and her colleagues at the Whitehead Institute for Biomedical Research at MIT come out in support of the Y chromosome's chances of survival. "We can confidently say that the decay of the Y chromosome has come to a halt, and that would portend very well for its future," Hughes told *the Guardian*. "There are far more things to worry about than this."

- 1p 6 In welke volgorde stonden de alinea's a tot en met d in de tekst?
- A b - a - c - d
 - B b - d - c - a
 - C c - b - a - d
 - D c - d - b - a
 - E d - a - b - c
 - F d - c - b - a
- 1p 7 How does paragraph 7 relate to the first two paragraphs of this article?
- A It contradicts the content of paragraphs 1 and 2.
 - B It is in line with the content of paragraphs 1 and 2.
 - C It questions the content of paragraphs 1 and 2.
 - D It summarises the content of paragraphs 1 and 2.

Bronvermelding

Een opsomming van de in dit examen gebruikte bronnen, zoals teksten en afbeeldingen, is te vinden in het bij dit examen behorende correctievoorschrift, dat na afloop van het examen wordt gepubliceerd.