

Anglais



UNIVERSITÉ DE NANTES

U.F.R. des Sciences et des  
Techniques

S.E.V.E. Bureau des Examens

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Semestre  1  2

Session  1  2

Nom de l'U.E. : Anglais

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Date de l'examen : 08-01-2013

Durée : 1h30

Documents autorisés : Aucun

Calculatrice autorisée  oui  non Type :

**PAS DE SORTIE AUTORISEE avant 1H00 d'épreuve**

Répondez **UNIQUEMENT SUR LE SUJET** dans les espaces prévus à cet effet

N'inscrivez **RIEN DANS LES ZONES GRISEES** (prévues pour la correction)

Votre étiquette d'anonymat est à appliquer **SUR LA COPIE VIERGE**  
Reportez votre **NUMERO D'ANONYMAT** sur chaque feuillet

Numéro d'Anonymat : .....

## Genes, lifestyle and health

WHAT makes us unhealthy? Sometimes the answer is easy. In 1854 an English doctor, John Snow, founded modern epidemiology by mapping a cholera outbreak in London and noticing that sick people lived near one public water pump. In the now classic version of the story, he had the pump's handle removed and the outbreak ended.

Often, though, the true links between sickness and environmental exposures are more subtle. Now, a novel method promises a revolution to rival Snow's, by using our knowledge of human genes to pinpoint how the environment and our lifestyle choices affect health.

10 Last week, the method burst into the public arena, with the finding that moderate drinking during pregnancy lowers the future IQ of a developing fetus.

Previous studies that charted mothers' drinking and children's IQs have given conflicting results. That's because they use classic epidemiology, which involves surveying a large group of women who drink during pregnancy and another similar group who don't, then comparing their kids' IQs. Sounds simple, but what if mothers who drink have other traits in common that non-drinkers don't have, and it is one or more of those traits, rather than the alcohol, that actually influences IQ? In fact, it turns out that women who drink moderately during pregnancy are more likely to have a higher IQ, and this is passed to the child, obscuring any effect of drinking.

20 Such traits are called confounders. You can correct for them, or try to make them equal in both groups, so the women being compared differ only in their drinking habits - but shared traits that you are unaware of can still cloud the results. "All epidemiological studies are confounded somehow," says epidemiologist David Batty at University College London.

25 Alcohol is just the start. George Davey Smith at the University of Bristol, UK, and colleagues proposed in 2003 that epidemiologists might find genes that affect the extent of your exposure to environmental and dietary chemicals, or affect your own fatness or blood-sugar level. If so, those genetic variants could then be used as a proxy for the exposure itself in assessing how it affects people.

30 The point, he says, is not to show how genes cause disease, which was the hope of our early efforts to study human DNA. "It is to use genes to show what parts of our behaviour or environment make us ill."

So what effect might that glass of champagne during a second trimester have had? "There's no way we could determine whether such a low dose has an effect," says Gray. "But now we know moderate alcohol does affect IQ. If you have a choice, why risk it?"

New Scientist, 21 November 2012 by **Debora MacKenzie**

**PART ONE : VOCABULARY (10 points)**

<b><i>In the text, find equivalents for the following words (the word structure may be slightly different)</i></b>		<b>SCORE</b>
sick		
create		
determine		
become known suddenly		
characteristic		
confuse		
degree		
contact		
substitute		
estimate		
<b>TOTAL ( / 10 POINTS)</b>		

40 **PART TWO: COMPREHENSION ( 10 points)**

<i>Say whether the following statements are TRUE OR FALSE, and justify by quoting from the text. Indicate the reference <u>AND</u> copy the relevant passage ; add comments in your own words if necessary</i>		SCORE
John Snow decontaminated the water.		
T	F	
It's now obvious to find how sickness relates to the environment.		
T	F	
John Snow has found a new method using genes.		
T	F	
In the past, studies showed that drinking mothers had more conflicts with their children.		
T	F	
Because of the study, we can hypothesize that alcohol for pregnant women make their future children smarter		
T	F	
Women drinking moderately while pregnant often have higher IQ		
T	F	
Cofounders tend to make people more equal.		
T	F	
Food might be the next topic of research in this context		
T	F	
With the new study, what's important is to demonstrate how the environment changes our genes		
T	F	
A glass of champagne in the middle of pregnancy is proved to be dangerous		
T	F	
<b>TOTAL ( / 10 POINTS)</b>		

**PART THREE: CULTURAL LANDMARKS (10 points)**

<b><i>Answer the following questions about the civilisation documents you have studied</i></b>	<b>SCORE</b>
What is significant about Euclid's <i>Elements</i> ?	
Name four of Lavoisier's achievements.	
Why did antiseptics kill more soldiers than infections did during World War I?	
What did Newton show in the <i>Principia</i> ?	
Did William Smith receive instant recognition for his work? Why?	
<b>TOTAL ( / 10 POINTS)</b>	

**PART FOUR: WRITING (20 points)**

*In no less than 100 words (indicate the number of words), answer the following  
45 question:*

***To what extent is our health determined by our genes? How can our actions  
also affect it?***

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Number of Words = .....

<b>TOTAL ( / 20 POINTS)</b>	
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**PART FIVE: GRAMMAR (10 points)**

Choose the correct answer					SCORE	
Before the sun is up, you _____ 3 times.				A	B	
A. will have lied	B. would have lied	C. lied	D. would lie	C	D	
The screw _____ invented by Archimedes.				A	B	
A. has to be	B. has been	C. was	D. would be	C	D	
500 students _____ at the moment, we should do something !				A	B	
A. have been torturing	B. were tortured	C. are torturing	D. are being tortured	C	D	
It looked like the window _____ broken by a hammer some time before.				A	B	
A. was broken	B. had been broken	C. has been broken	D. could be broken	C	D	
She refuses _____ she's managed _____ herself fired.				A	B	
A. of accepting/of getting	B. of accepting/to get	C. to accept/to get	D. to accept/ of getting	C	D	
They're postponing _____ the new president since he's expected _____ available anytime soon.				A	B	
A. meeting/ not to be	B. meeting/ not being	C. to meet/ not to be	D. to meet/ not being	C	D	
_____ told her the truth if she'd asked ?				A	B	
A. shouldn't he have	B. wouldn't he have	C. wouldn't have he	D. shouldn't he has	C	D	
The only person to _____ I can really talk is her.				A	B	
A. who	B. which	C. whom	D. whose	C	D	
_____ he went, _____ frustrated he grew.				A	B	
A. the more far / the more	B. the further / the more	C. the farther/ the most	D. farther / more	C	D	
A cinema ticket today is _____ it was in the past.				A	B	
A. 3 times more expensive than	B. 3 times expensiver than	C. 3 times as expensive as	D. 3 times more expensive as	C	D	
<b>TOTAL ( /10 POINTS)</b>						