

Science (under scrutiny) in the news

Misleading
Statistics
in the Media:
Examples
and How to
Spot Them



Science (under scrutiny) in the news



Éviter les pièges du lexique anglais

Appuyez-vous sur le contexte afin d'expliquer le sens des termes soulignés importés du français.

1. Every room in this hotel has an en-suite bathroom.
2. We're not feeling very sanguine about the outcome of the negotiations.
3. The singers were so good that they were asked for several encores.
4. When you apply for a job, you have to send off your résumé.

Science (under scrutiny) in the news



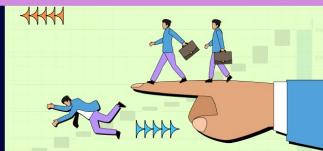
Éviter les pièges du lexique anglais

Appuyez-vous sur le contexte afin d'expliquer le sens des termes soulignés importés du français.

1. Every room in this hotel has an en-suite bathroom. (*attendant*)
2. We're not feeling very sanguine about the outcome of the negotiations. (*optimistes*)
3. The singers were so good that they were asked for several encores. (*bis/rappel à la fin d'un spectacle*)
4. When you apply for a job, you have to send off your résumé. (*CV, qui constitue le résumé des informations personnelles et professionnelles*)

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Reliez les mots de la première colonne à leur traduction dans la deuxième colonne, puis faites de même pour les colonnes 3 et 4.

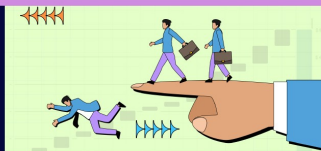
Mot anglais	
sensible	*
dramatic	*
actually	*
eventually	*
library	*
lecture	*
petrol	*
prevent	*
resume	*
report	*
deceive	*
pretend	*

Traduction	Mot français	
faire semblant	sensible	*
signaler	dramatique	*
empêcher	actuellement	*
conférence, CM	éventuellement	*
essence	librairie	*
tromper	lecture	*
raisonnable	pétrole	*
finaleme	prévenir	*
reprendre	résumer	*
spectaculaire	reporter	*
bibliothèque	décevoir	*
en réalité	prétendre	*

Traduction	
reading	*
oil	*
let somebody know	*
at the moment	*
tragic, terrible	*
possibly	*
postpone	*
bookshop	*
disappoint	*
sensitive	*
claim	*
sum up	*

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Reliez les mots de la première colonne à leur traduction dans la deuxième colonne, puis faites de même pour les colonnes 3 et 4.

Mot anglais		Traduction	Mot français		Traduction
sensible	⌘	raisonnable	sensible	⌘	sensitive
dramatic	⌘	spectaculaire	dramatique	⌘	tragic, terrible
actually	⌘	en réalité	actuellement	⌘	at the moment
eventually	⌘	finalement	éventuellement	⌘	possibly
library	⌘	bibliothèque	librairie	⌘	bookshop
lecture	⌘	conférence, CM	lecture	⌘	reading
petrol	⌘	essence	pétrole	⌘	oil
prevent	⌘	empêcher	prévenir	⌘	let somebody know
resume	⌘	reprendre	résumer	⌘	sum up
report	⌘	signaler	reporter	⌘	postpone
deceive	⌘	tromper	décevoir	⌘	disappoint
pretend	⌘	faire semblant	prétendre	⌘	claim

Science (under scrutiny) in the news



Choisissez en contexte le mot qui convient parmi les deux traductions possibles d'un même mot français.

1. Scientists carry out a lot of experiences/experiments.
2. The Government needs a new economic/economical policy.
3. She comes from a large family so she has a lot of parents/relatives.
4. The new treatment is very efficient/effective in curing infection.
5. He's a world famous scientific/scientist.
6. The government is facing a lot of critic/criticism/critical/critique over its new policy.

Science (under scrutiny) in the news

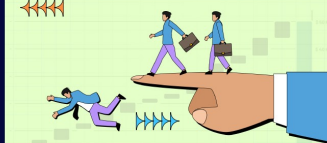


Choisissez en contexte le mot qui convient parmi les deux traductions possibles d'un même mot français.

1. Scientists carry out a lot of experiences/**experiments**. (*expérience vécue vs. expérience scientifique*)
2. The Government needs a new **economic**/economical policy. (*qui relève du commerce vs qui permet de ne pas dépenser trop d'argent*)
3. She comes from a large family so she has a lot of parents/**relatives**. (*père/mère vs autres membres de la famille*)
4. The new treatment is very efficient/**effective** in curing infection. (*qui produit l'effet voulu vs capable d'accomplir une tâche sans perdre du temps ou de l'énergie*)
5. He's a world famous scientific/**scientist**. (*adjectif vs nom*)
6. The government is facing a lot of critic/**criticism**/critical/critique over its new policy. (*personne qui fait la critique vs critique négative vs évaluation écrite d'une oeuvre ou théorie vs adjectif correspondant, signifiant également "crucial", "urgent" et "décisif"*)

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I USED TO THINK
CORRELATION IMPLIED
CAUSATION.



THEN I TOOK A
STATISTICS CLASS.
NOW I DON'T.



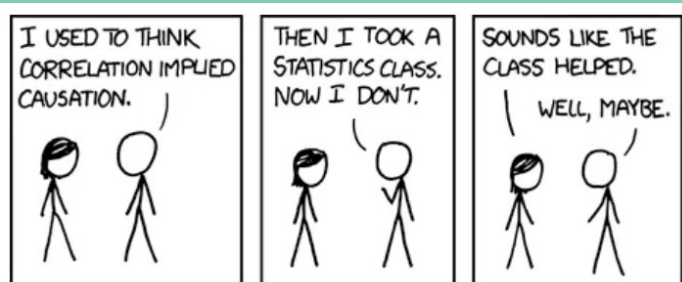
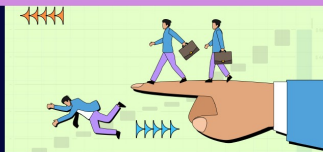
SOUNDS LIKE THE
CLASS HELPED.

WELL, MAYBE.



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Phonétique

Prononciation de <ed>

- used > verbe
- > adjectif
- implied >
- helped >

Accentuations

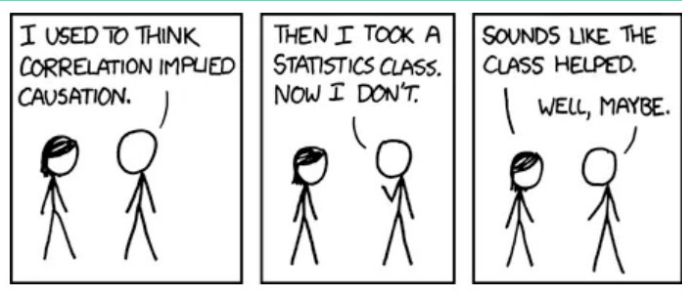
- statistics
- correlation / causation
- correlate / calculate / operate / manipulate

Variations autour de /o/

- correlation
- causation
- now / sounds

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Phonétique

Prononciation de <ed>

used > verbe /ju:st/

> adjectif /ju:zd/

implied > /ɪm'plaɪd/

helped > /helpt/

Rappel : prononciation de <ed> soit /d/, /t/ ou /ɪd/

« t » ou « d » suivi de <ed> donne le son /ɪd/

Accentuations

statistics

correlation / causation

correlate / calculate / operate / manipulate (/100/)

Variations autour de /o/

correlation /ɒ/

causation /ɔ:/

now / sounds /aʊ/

Science (under scrutiny) in the news



Science (under scrutiny) in the news

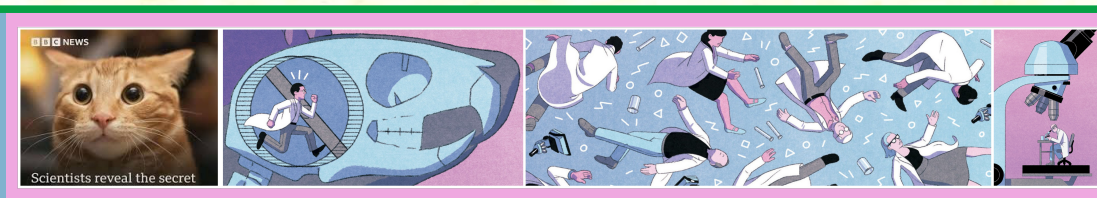


2. Look at the following cartoons to collect more information regarding “British scientists” memes.

- Write your own definition or description of the phenomenon.
- What could be the positive or negative consequences of the memes spreading widely online?



Science (under scrutiny) in the news



1. Have you ever come across such memes?

In your opinion, what do they imply?

2. Look at the following cartoons to collect more information regarding “British scientists” memes.

a. Write your own definition or description of the phenomenon. In modern Russian culture “British scientists” is a running joke used as an ironic reference to absurd news reports about scientific discoveries. It is described as referring to “researchers working on completely insane, idiotic, pseudo-scientific projects that have absolutely no practical value” – a form of mad science.

b. What could be the positive or negative consequences of the memes spreading widely online?

One could say there is no such thing as bad publicity and that drawing attention to science is always positive. It could be argued British scientists are not afraid to do and publish various kinds of eccentric research that sometimes gives “a chance to do something really wonderful” (Marc Abrahams, founder of Ig Nobel Prize).

On the other hand, the trend has been identified as a media virus which not only thrives in reality but also slightly modifies it: popular media are twisting the reports about scientific discoveries to make them clickbait. In the long run, it may discredit science, turn young people away from it and affect research funding. It could also be a form of strategic, political misinformation to discredit science in another country.

Science (under scrutiny) in the news



3. Some satirical sites list such achievements by British scientists.

Fill in the following statements, imagining the nature of the study or experiment.

- a. British scientists discovered that swearing
- b. British scientists discovered that bumblebees could be taught to
- c. British scientists discovered cheese
- d. British scientists discovered that nine out of ten ladybirds
- e. British scientists discovered that binge drinkers
- f. British scientists discovered that different colour football shirts
- g. British scientists discovered that ducks

Science (under scrutiny) in the news



3. Some satirical sites list such achievements by British scientists.

Fill in the following statements, imagining the nature of the study or experiment.

- British scientists discovered that swearing **can help reduce pain**. (*Richard Stephens, of Keele University*)
- British scientists discovered that bumblebees could be taught to **play football**. (*Olli Loukola, of Queen Mary University*)
- British scientists discovered cheese **doesn't actually work better in mousetraps than any other food**.
- British scientists discovered that nine out of ten ladybirds **carry venereal disease fungus**.
- British scientists discovered that binge drinkers **tend to fall over more**.
- British scientists discovered that different colour football shirts **can affect performance**.
- British scientists discovered that ducks **have regional accents**.

Science (under scrutiny) in the news



4. Among the following findings, guess which are genuine discoveries by British scientists.

- a. The height of Cinderella's heels.
- b. Monkeys can work cassette-recorders better than Generation Z humans.
- c. Tea stops working if you microwave it.
- d. Tea tastes better when someone else makes it.
- e. Biscuits taste better when stolen from someone else's plate.
- f. Saying "sorry" lowers national blood pressure.
- g. People walk faster in cities than in small towns.
- h. Trains are delayed even when they arrive on time.
- i. Talking to yourself is linked to higher cognitive function.
- j. Weather complaints are a valid form of social bonding.
- k. Umbrellas only work when it's not raining.

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4. Among the following findings, guess which are genuine discoveries by British scientists.

- a. The height of Cinderella's heels.
- b. Monkeys can work cassette-recorders better than Generation Z humans.
- c. Tea stops working if you microwave it.
- d. Tea tastes better when someone else makes it. *(Based on studies about perceived effort and taste bias)*
- e. Biscuits taste better when stolen from someone else's plate.
- f. Saying "sorry" lowers national blood pressure.
- g. People walk faster in cities than in small towns.
- h. Trains are delayed even when they arrive on time.
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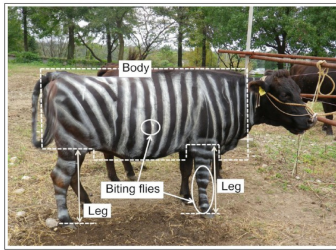
Science (under scrutiny) in the news



5. Do you think about examples of the same kind you would like British scientists to investigate?

6. Besides “British scientists,” do you know examples of science being similarly satirized?

7. What could be the findings and assets of the following experiments?



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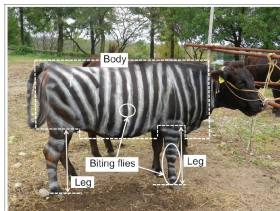


5. Do you think about examples of the same kind you would like British scientists to investigate?

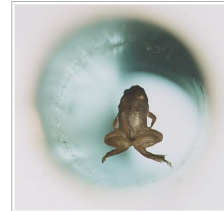
6. Besides “British scientists,” do you know examples of science being similarly satirized?

- **The Golden Fleece Award** (1975-1988) was a tongue-in-cheek award given to public officials in The US for squandering public money. Its name is sardonically taken from the actual Order of the Golden Fleece, a prestigious chivalric award created in the late 15th century. It is a play on the transitive verb fleece, or charging excessively for goods or services. US Senator William Proxmire began to issue the Golden Fleece Award in 1975 in monthly press releases. In 1988 The Washington Post referred to the award as “the most successful public relations device in politics today.” Pixar President Ed Catmull wrote of the “chilling effect on research” the Award exerted. He argued that when thousands of research projects are funded, some have measurable, positive impacts and others don’t. It is not possible to predict what the results of the projects will be or whether they will have value. Failure in research is essential and fear of failure would distort the way researchers choose projects, which would ultimately impede progress.
- On the contrary, **the Ig Nobel Prize** is a satirical prize awarded annually since 1991 to promote public engagement with scientific research. Its aim is to “honor achievements that first make people laugh, and then make them think.” The name is a pun on the Nobel Prize and the word “ignoble”.

7. What could be the findings and assets of the following experiments?



The 2025 Ig Nobel Prize in biology was awarded to Tomoki Kojima and other researchers for demonstrating that painting cows with black and white stripes can prevent flies biting them without using more pesticide.

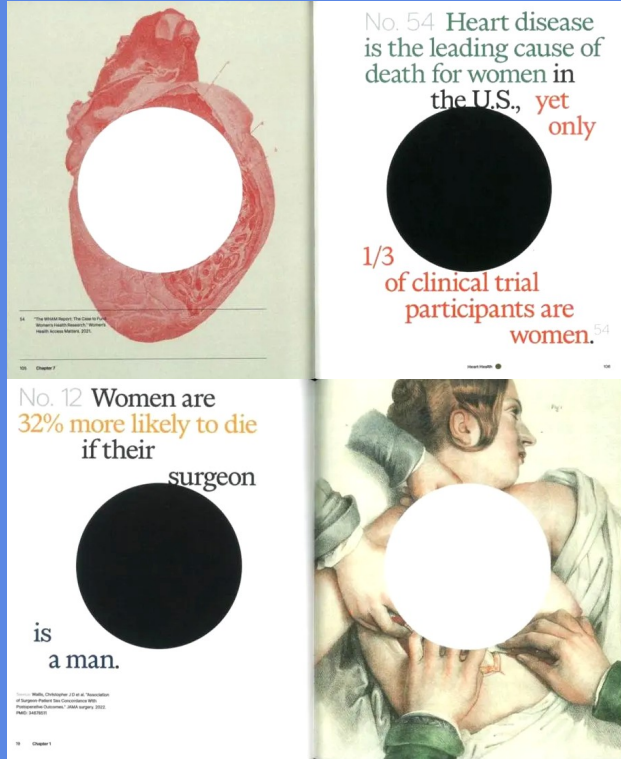


The 2000 Ig Nobel Prize in physics was awarded to Andre Geim and Michael Berry for the magnetic levitation of a live frog. The floating amphibians may lead the way to a cheap alternative to space-based science experiments. Geim was awarded an actual Nobel Prize in Physics in 2010.

Double Standards



Double Standards




The infographic is divided into four quadrants. Top-left: A red anatomical illustration of a heart with a large white circle cut out. Top-right: Text 'No. 54 Heart disease is the leading cause of death for women in the U.S., yet only' followed by a black circle and '1/3 of clinical trial participants are women.' Bottom-left: Text 'No. 12 Women are 32% more likely to die if their surgeon is a man.' followed by a black circle. Bottom-right: A classical painting of a woman's back being examined by a man, with a large white circle cut out over the woman's back.

No. 54 Heart disease is the leading cause of death for women in the U.S., yet only $\frac{1}{3}$ of clinical trial participants are women.

No. 12 Women are 32% more likely to die if their surgeon is a man.

The Gender health gap: why do women live longer than men, but spend more years in worse health conditions?

Double Standards



Gender inequality is bad for your health

Evy's Equal Research Day - And New Book - Exposes Gender Health Gaps



In 2022, Jimmy Kimmel Live took to the streets. There, the show's interviewer stopped random men and asked them questions about basic female anatomy and health, including "Do most women have one uterus or two?", "What does PMS stand for and how often does it happen?" and "What part of the body does a mammogram examine?". None of the men knew the correct answers. In 2023, the same interviewer asked different men similar questions. Again, none of the men knew. These two segments, titled "What Do You Know About the Female Body?", showed that many people don't actually know that much. And while the Jimmy Kimmel Live segments are recent, that knowledge gap has existed for hundreds of years. The first known clinical trial took place in 1747, and, in the centuries that followed, scientists developed the first vaccines, discovered penicillin, invented the first EKG machine, performed the first human heart transplant, and more. But all these innovations – as well as the foundational research, data, and development behind them – were done without women.


"Everything starts with research and data," says Priyanka Jain, Chief Executive Officer and co-founder of Evvy. Evvy, a New York-based women's health startup, was founded in 2021 after its three co-founders – Ms. Jain, Chief Scientific Officer Pita Navarro, and Chief Marketing Officer Laine Bruzek – learned that women weren't required in clinical research in the United States until 1993. That year – 246 years after the first clinical trial had taken place – Congress passed the NIH Revitalization Act to require the inclusion of "women and minorities" in clinical trials for the very first time. All the scientific and medical advancements that had transpired prior were based solely on men, leaving women – and, subsequently, women's health – underfunded, under-researched, and, overall, unequal.

Evy is working to help close the resulting gender health gaps: the inequities in healthcare, including access and outcomes, between men and women. [...] Examples of the gender health gap exist across all fields of healthcare, including cardiovascular health, autoimmune diseases, and prescription drugs. Women are 50% more likely to be misdiagnosed following a heart attack, even though cardiovascular disease – which includes heart attacks – is the leading cause of death in women, killing about one in three every year. For another example, as many as 80% of Americans with an autoimmune disease are women but so many that 40% of participants in autoimmune disease-focused clinical trials are women. And between 1997 and 2000, just a few years after the 1993 NIH Revitalization Act was passed, the Food and Drug Administration (FDA) pulled 10 prescription drugs from the market, eight of which caused greater health risks in women than men. The "serious male biases in basic, preclinical, and clinical research" behind those drugs meant that their effects on women weren't revealed until after the drugs were commercially available. Despite these withdrawals, sex biases still continue in clinical trials, leading to adverse drug reactions and overmedication, among others, in women today.

Even if men and women are experiencing the same disease, women are diagnosed on average, four years later than men are – if the women are even diagnosed correctly in the first place. For cancer specifically, that diagnostic discrepancy is two and a half years. In other words, women with cancer spend over 912 days more than men enduring the time, financial, and emotional costs of seeing doctors yet getting incorrectly diagnosed, losing productivity at work, and missing moments with loved ones. "What could you do with two and a half more years of your life?" asks Ms. Bruzek. In fact, the gender health gap equates to 75 million years of life lost collectively per year due to poor health or early death. [...]

For this year's Equal Research Day, Evvy brought those facts together for a limited-edition coffee table book, titled "100 Equal Facts About The Gender Health Gap: A Very Incomplete List of Ways the Female Body Has Been Left Behind by Modern Medicine". [...] Every cent goes to Women's Health Access Matters (WHAM), a non-profit working to "increase awareness of and accelerate funding for women's health research to transform women's lives and impact the economy". After all, advancing women's health and improving the country's economy go hand-in-hand: investing \$350M in women's health would generate \$14B to the United States economy.

By Eva Ekker, Forbes, Dec 13, 2024
<https://www.forbes.com/sites/evyevvy/2024/10/10/eveys-equal-research-day-and-new-book-exposes-gender-health-gaps/>



Gender inequality is bad for your health

Find in the text, and in that particular order, the words corresponding to the following definitions.

- Made, done, or happening without method or conscious decision; involving equal chances:
- The way a thing turns out, a consequence:
- Able to be used or obtained, at someone's disposal:

Rephrase in your own words the following sentence, paying particular attention to the words underlined.

4. Jimmy Kimmel Live took to the streets. (1.1)

5. All the scientific and medical advancements that had transpired prior were based solely on men. (1.16)

Right or wrong? Justify your answer quoting the line of the text.

6. In 2022 and 2023, men were asked questions by Jimmy Kimmel and their answers showed that (those) men didn't know much about female anatomy and health.

7. Before 1993, it was not necessary in the US to have female scientists in clinical research.

8. The victims of a biased medical system are women.

9. One in three women dies of a heart attack each year.

10. Because of bad diagnoses of cancer, women die on average two and a half years earlier.

Answer the following questions.

11. Why do women often have stronger adverse reactions to medications than men?

12. In your opinion, why are women diagnosed later than men?

13. What do the holes in the pages of Evvy's book represent?

Double Standards



Find in the text, and in that particular order, the words corresponding to the following definitions.

1. Made, done, or happening without method or conscious decision; involving equal chances:
2. The way a thing turns out; a consequence:
3. Able to be used or obtained; at someone's disposal:

Rephrase in your own words the following sentence, paying particular attention to the words underlined.

4. "Jimmy Kimmel Live took to the streets" (1.1):

5. "All the scientific and medical advancements that had transpired prior were based solely on men" (1.16):

Double Standards



Find in the text, and in that particular order, the words corresponding to the following definitions.

1. Made, done, or happening without method or conscious decision; involving equal chances: **random**
2. The way a thing turns out; a consequence: **outcome**
3. Able to be used or obtained; at someone's disposal: **available**

Rephrase in your own words the following sentence, paying particular attention to the words underlined.

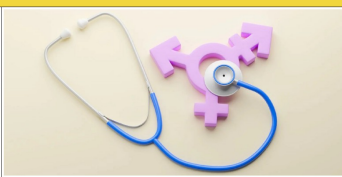
4. "Jimmy Kimmel Live took to the streets" (1.1):

Jimmy Kimmel Live went outside on the streets to interview people.

5. "All the scientific and medical advancements that had transpired prior were based solely on men" (1.16):

All the scientific and medical progress that had come to be known before that date was exclusively related to men.

Double Standards



Gender inequality is bad for your health

Right or wrong? Justify your answer quoting the line of the text.

6. In 2022 and 2023, men were asked questions by Jimmy Kimmel and their answers showed that (those) men didn't know much about female anatomy and health.

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Double Standards



Right or wrong? Justify your answer quoting the line of the text.

6. In 2022 and 2023, men were asked questions by Jimmy Kimmel and their answers showed that (those) men didn't know much about female anatomy and health.

Right. "In 2023, the same interviewer asked different men similar questions. Again, none of the men knew. These two segments, titled "What Do You Know About the Female Body?", showed that many people don't actually know that much."

7. Before 1993, it was not necessary in the US to have female scientists in clinical research.

Wrong. "women weren't required in clinical research in the United States until 1993. That year [...] Congress passed the NIH Revitalization Act to require the inclusion of "women and minorities" in clinical trials for the very first time" > "trials" means the drugs were not tested for them.

8. The victims of a biased medical system are women.

Right and Wrong. Victims are women, minorities, families ("loved ones") and the economy.

9. One in three women dies of a heart attack each year.

Wrong. "cardiovascular disease - which includes heart attacks - is the leading cause of death in women, killing about one in three every year."

10. Because of bad diagnoses of cancer, women die on average two and a half years earlier.

Wrong. They waste that time or spend it in poorer health: "women with cancer spend over 912 days more than men enduring the time, financial, and emotional costs of seeing doctors yet getting incorrectly diagnosed, losing productivity at work, and missing moments with loved ones."

Double Standards



Answer the following questions.

11. Why do women often have stronger adverse reactions to medications than men?

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12. In your opinion, why are women diagnosed later than men?

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13. What do the holes in the pages of Evvy's book represent?

.....
.....
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.....

Double Standards



Answer the following questions.

11. Why do women often have stronger adverse reactions to medications than men?

Because women were not included in clinical trials, and so their potential reactions are not known before taking the drug. “The ‘serious male biases in basic, preclinical, and clinical research’ behind these drugs meant that their effects on women weren’t revealed until after the drugs were commercially available. Despite these withdrawals, sex biases still continue in clinical trials, leading to adverse drug reactions and overmedication, among others, in women today.”

12. In your opinion, why are women diagnosed later than men?

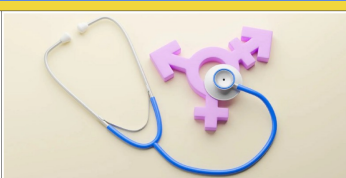
Here are some suggestions offered by Elena Bassoli in *Ingenius*, the journal by l’Ecole nationale des ponts et chaussées, June 2025 (<https://ingenius.ecoledesponts.fr/en/articles/the-gender-health-gap-why-women-live-longer-than-men-but-spend-more-years-in-worse-health-conditions/>):

- **limited financial access** is an important factor preventing women from accessing healthcare (men in the households may control financial decisions; women are often the secondary earner in the family)
- women **perform most of the caregiving and domestic tasks**, which **limits their time and ability to seek care for themselves** (they often delay or forgo their own healthcare needs in order to tend to those of children, elders or spouses) > they may end up with more serious conditions
- gender-biased healthcare system and **enduring stereotypes**: women are still frequently perceived as fragile and overemotional so that their health-related complaints are minimized, not taken seriously or overlooked
- **fear of abuse**, maltreatment or harassment since most doctors are still men
- **collection of data on women has been limited** even in key health issues affecting them

13. What do the holes in the pages of Evvy’s book represent?

Uniquely, every page of this book also has a glaring hole in its center: a purposeful design choice. “We wanted to make sure that there’s a visual representation of the gender health gap on every page,” explains Ms. Bruzek. The holes on the page, at times, obscure the page’s text or other images - just like the holes that they represent in healthcare can obscure correct diagnoses, effective treatments, proper care, and stories and suffering of the women affected by this gap.

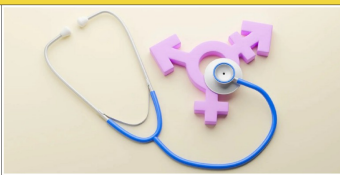
Double Standards



**Gender inequality is
bad for your health**



Double Standards



**Gender inequality is
bad for your health**

