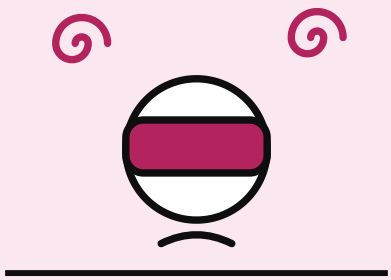
Concept

Cybersickness

The discomfort some people feel when using virtual reality or watching moving images: dizziness, nausea, eye strain or disorientation, especially when they see movement their body doesn't feel.



In Spanish

Cibermareo

Origin

McCauley and Sharkey (1992); measured by Kennedy et al. (1993)

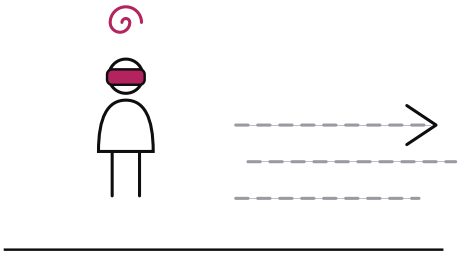
What problem it addresses

It makes many people quit or avoid a virtual reality experience, however good it is.

An example

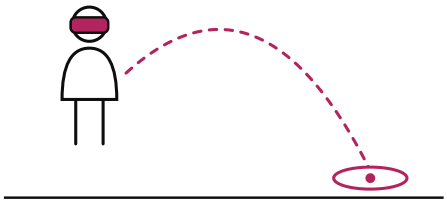
An illustrative example: walking through a virtual museum.

Gliding forward



The image moves forward while the person stays still: the eyes say they are moving and the body says they aren't. **Dizziness.**

Jumping from point to point



The person points to where they want to go and appears there, without seeing the journey. **Less mismatch.**

It isn't about removing movement, but about not showing movement the body doesn't feel.

Why it happens

1 

The eyes see that you are moving.

2 

The body feels that you are still.

3 

And that mismatch can make you dizzy.

Applications in design

Use it like this

Let the person decide how they move, and offer ways to move forward that don't show continuous travel.

Avoid

Moving the camera, accelerating or turning the view without the person deciding to.

Don't fall for it

Test with different people and in long sessions: the designer, already used to it, may not get dizzy.

16 symptoms

What the research says

The Simulator Sickness Questionnaire measures 16 symptoms in three groups: nausea, eye discomfort and disorientation. It was built from 1,119 pairs of questionnaires completed before and after using 10 simulators (Kennedy et al., 1993).

●●● **Solid evidence.** The exact cause is still being studied. The ISO 9241-394 standard (2020) sets requirements to reduce the sickness caused by moving images.

Connections

Used in

- XR design (extended reality)

Authors and works

1992	**Michael E. McCauley and Thomas J. Sharkey**	Used the term cybersickness for the discomfort caused by perceiving motion in a virtual environment.
1993	**Robert S. Kennedy et al.**	Created a 16-symptom questionnaire to measure the sickness caused by flight simulators.
2020	**ISO**	Set requirements to reduce the sickness caused by watching moving images on screens, projectors and headsets.

Sources

Original sources

- McCauley, M. E., & Sharkey, T. J. (1992). Cybersickness: Perception of self-motion in virtual environments. Presence: Teleoperators and Virtual Environments, 1(3), 311–318.
- Kennedy, R. S., Lane, N. E., Berbaum, K. S., & Lilienthal, M. G. (1993). Simulator Sickness Questionnaire: An enhanced method for quantifying simulator sickness. The International Journal of Aviation Psychology, 3(3), 203–220. View source (https://doi.org/10.1207/s15327108ijap0303_3)
- International Organization for Standardization (2020). ISO 9241-394:2020. Ergonomics of human-system interaction, Part 394: Ergonomic requirements for reducing undesirable biomedical effects of visually induced motion sickness during watching electronic images. ISO. View source (https://www.iso.org/standard/73227.html)

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