

# Privacy of Virtual Reality:

## Our Future in the Metaverse and Beyond



Virtual reality (VR) technology is no longer just the subject of science fiction. It is already a multibillion-dollar industry. Kids are playing games in VR, students are learning in VR, and employees are now having remote meetings in VR. The potential benefits of virtual reality and augmented reality could transform society in countless positive ways, like how personal computers and mobile devices have changed our lives in ways that were unimaginable even just a few years ago. However, we need to make sure the potential harms of virtual reality for kids and families do not outweigh the potential benefits.

This report explores the potential risks and harms of VR by examining the actual privacy policies and practices—as well as the developmental and psychological implications—of popular virtual reality devices and third-party VR applications used by kids and families. This research also identifies how personal data collected in virtual reality is used by companies for their own commercial purposes and profit.

**None of the most popular VR headsets have earned our recommendations for kids and families.**

This is a critical moment in our history to demand better privacy practices from VR companies and put in place stronger privacy regulations of VR technologies to help reshape what privacy in virtual reality and the metaverse means for all of us. At this moment, we have a rare chance to think about and implement appropriate privacy and safety design policies. We can create best practices for the use of sensitive information before VR is fully adopted and integrated into society. This is also a chance for us to define what “privacy” means in VR before it becomes too late to look at what should have been considered and adopted from the beginning.

There has been an increasing focus on the benefits of using VR, with very little research on the costs to users’ privacy. VR apps and devices can collect a significant amount of sensitive, biometric,

behavioral, and personal information. In fact, spending 30 minutes or more immersed in VR can create over 2 million unique data points, and newer VR headsets have increasing capabilities to collect even more types of intimate data.

VR technology is able to capture the conscious, unconscious, and constant broadcast of incredibly sensitive information from its users, such as where we look, how long we look, what our pupils are doing, whether our skin is perspiring or not, as well as minute fluctuations in skin color. In many cases, these automatic body responses and functions can betray our innermost thoughts and feelings that we may feel are private. Researchers have demonstrated that media-rich VR environments can create unique opportunities to influence users' behavior, encourage riskier choices, increase prolonged use, and implant false memories. That is just the start.

We need to ensure safe education and play spaces for children in VR, because many users experience sexism, racism, homophobia, and other forms of harassment, stalking, and abuse. It is critical that these platforms, the content, and experiences they provide are age appropriate and privacy protective. Unfortunately, our results found that all of the most popular VR devices we tested are exploiting and monetizing users' data and not setting up safe spaces or guardrails to protect children. A brief summary of some additional risks and harms our research uncovered are shared below:

For **all** of the virtual reality products we rated:

- Users are tracked from the moment they put on their VR device.
- Sensitive data collected in virtual reality is shared with third parties for profit.
- Privacy policies were unclear or said sensitive data is used for targeted advertising, third-party marketing, and tracking purposes.
- Privacy policies do not say they have stronger protections for child or teen users.
- They do not use privacy-by-design.
- They displayed third-party advertising to users.

**Read the full report at:** [commonsense.org/privacy-of-virtual-reality](https://commonsense.org/privacy-of-virtual-reality)