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Today, we discuss an important opinion on how to unlock the full potential of virtual reality, or VR, for people living with chronic pain. While VR has been widely used to manage short-term pain during medical procedures, many scientists feel its power to help with long-lasting pain has not been fully explored. Real-Life Science shares clear, easy-to-understand research summaries to help you see what science means for daily choices about health and care. In this episode, we look at why researchers believe VR should be used alongside proven treatments for chronic conditions like fibromyalgia and nerve pain, not just for brief relief.

In the early 2000s, Hunter G. Hoffman, PhD, showed that wearing VR headsets could help take people's minds off extreme physical pain, particularly during painful medical procedures like burn wound care. Since then, the field has expanded rapidly, but its focus has stayed narrow. Much of the work continues to center on acute pain and the growing number of review articles revisit its short-term effects. That's the concern highlighted in an editorial by lead author Carly L A Wender, PhD, from Kessler Foundation, who made a case for changing the way we think about VR as a valuable tool in the treatment of chronic pain.

Dr. Wender described a field "plagued by proliferation of review articles." A recent literature search found more 157 published reviews compared to 124 clinical trials. She urged researchers to break through this stagnation and use existing knowledge to move the field forward: apply what they've learned in acute pain research to address chronic pain.

Although VR has made strides in easing short-term pain, there is concern that its use has not expanded enough into chronic pain relief. To move beyond this limitation, experts suggest a new plan for research and

development. Let's look at a promising roadmap that guides future work in this area.

Dr. Wender didn't just critique the field; she outlined a roadmap for progress, highlighting four key action items for future research:

1. Focus on mechanisms. Chronic pain is multifaceted, involving physiological, psychological, and emotional components. Interventions that target only one mechanism (i.e., via distraction), common in pain research, are unlikely to help those with chronic conditions. Future studies should address multiple interacting mechanisms of pain.
2. Integrate VR with existing treatments. Rather than using VR as a standalone therapy, researchers should test it alongside evidence-based approaches such as physical therapy, exercise, or cognitive behavioral therapy.
3. Leverage the acute pain literature. Research on short-term pain already gives useful guidance for creating and adjusting VR tools to help with persistent pain.
4. Prioritize transparency and access. Researchers and industry leaders should openly share how VR tools are developed, tested, and refined to ensure reproducibility and equitable access.

Dr. Wender suggested that real progress will come only when researchers stop circling the same acute pain literature and instead use that momentum to advance chronic pain research. With focused, transparent, and collaborative studies, VR interventions could finally take a monumental step towards addressing chronic pain.

This study, "Virtual reality in chronic pain management: how do we galvanize a stagnant field?" was published in *Pain Management* (2025). Lead author is Carly L.A. Wender, PhD, a research scientist in the Center for Neuropsychology and Neuroscience Research at Kessler Foundation.

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As we have heard, virtual reality shows real promise beyond short-term pain relief, but moving forward requires clear research focused on chronic pain. By combining VR with current treatments, and sharing knowledge openly, scientists hope to create better tools for people who live with long-lasting pain. Real-Life Science will continue to bring you updates on research that makes a difference in daily life. You can find the full study linked in today's program notes for more detail. Stay curious and keep learning, because understanding science helps you make smarter choices about your care and well-being.