

# How Hydrogels Acquire The Ability To Win

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Courtesy of SynEvol

In the August 23 issue of the Cell Press journal Cell Reports Physical Science, researchers claimed that non-living hydrogels can play the computer game Pong and get better at it with practice. After connecting hydrogels to a virtual gaming environment, the researchers constructed a feedback loop between the paddle of the hydrogel, which was encoded by the dispersion of charged particles in the hydrogel, and the position of the ball, which was encoded by electrical stimulation.

Longer rallies were the outcome of the hydrogel's accuracy improving by up to 10% with experience. The findings show that inanimate materials can employ "memory" to refresh their perception of their surroundings, according to the researchers, albeit further investigation is required before hydrogels can be considered to be "learning."

"Ionic hydrogels have the potential to accomplish memory mechanics on par with more intricate neural networks," says Vincent Strong, a robotics engineer from the University of Reading and the first author. "We demonstrated that hydrogels are not only capable of playing Pong, but that they can also improve over time."

According to research published on August 23 in the journal Cell Reports Physical Science, non-living hydrogels can play the computer game Pong and get better at it as they gain more experience. After connecting hydrogels to a virtual gaming environment, the researchers built a feedback loop between the paddle of the hydrogel—which was encoded by the hydrogel's dispersion of charged particles—and the position of the ball, which was encoded by electrical stimulation. Longer rallies were the outcome of the hydrogel's accuracy improving by up to 10% with experience. The findings show that inanimate materials can employ "memory" to refresh their perception of their surroundings, according to the researchers, albeit further investigation is required before hydrogels can be considered to be "learning."

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