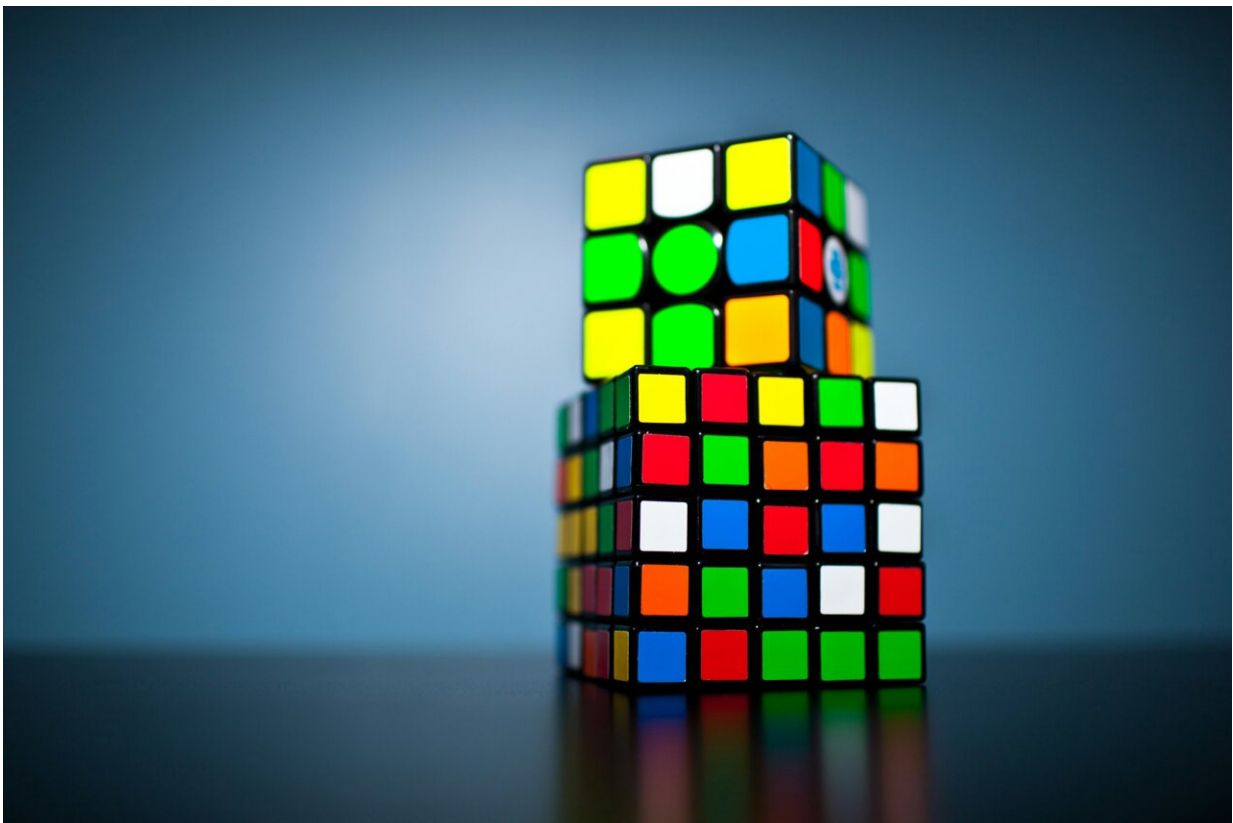


Making evidence go further in health science research

May 29 2024



Credit: Unsplash/CC0 Public Domain

Health science research could benefit from pairing two unique methods of study, argue SFI External Professor Ross Hammond and Sharin Barkin in a May 15 perspective [published](#) in the *Proceedings of the National Academy of Sciences*. When used together, traditional trials and computational models "offer powerful synergy," write the authors.

Randomized controlled [trials](#), a longstanding approach in [health sciences](#), help researchers establish clear links between treatments and outcomes. But RCTs have inherent limitations. They can be hard to generalize, may not identify a mechanism of action, and rely on necessary assumptions. In addition, cost, feasibility, and ethics can constrain the tests.

An alternative is agent-based models—[computational tools](#) that can simulate an intervention in various dynamic environments and across a diverse and interacting population. But ABMs are also limited; real-world data from experiments or observation are necessary to validate the models.

It's still rare for health science research to pair these two methods, but recent case studies illustrate their potential. Integrating RCTs and ABMs through iterative work could help health science researchers better understand complex diseases and expand the impact of limited resources.

More information: Ross A. Hammond et al, Making evidence go further: Advancing synergy between agent-based modeling and randomized control trials, *Proceedings of the National Academy of Sciences* (2024). [DOI: 10.1073/pnas.2314993121](https://doi.org/10.1073/pnas.2314993121)

Provided by Santa Fe Institute

Citation: Making evidence go further in health science research (2024, May 29) retrieved 23 June 2024 from <https://medicalxpress.com/news/2024-05-evidence-health-science.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.