

# You Are What Your Friends Eat

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**The USC Center for Artificial Intelligence in Society is transforming public health by calibrating real-life, human intervention**

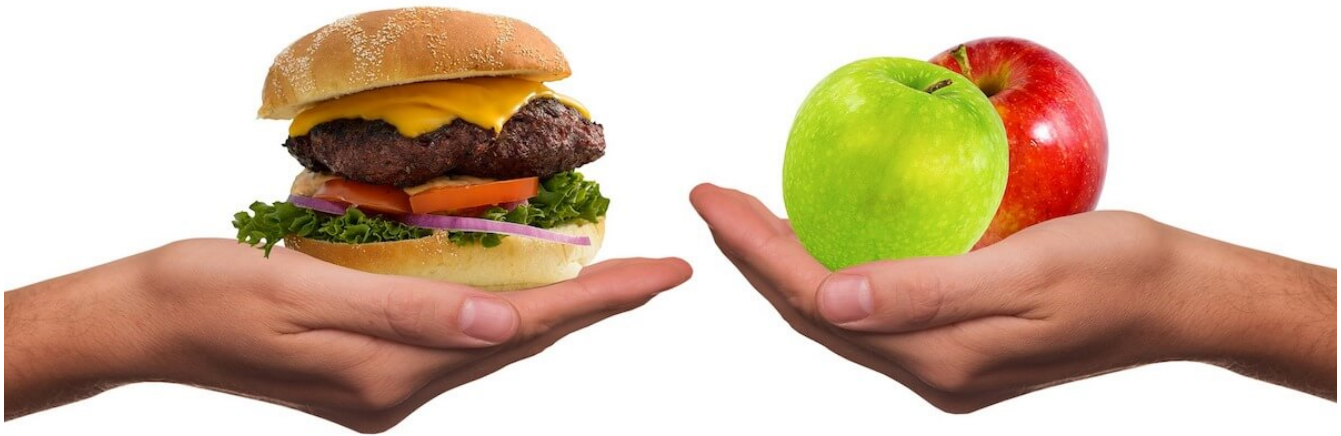


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Do you have that friend you go out with to indulge on all the scrumptious and unhealthy delicacies L.A. has to offer? Or how about that other friend that eats organic and always makes you feel like an unhealthy chicken nugget?

Chances are you have both – you’re also probably one of them.

Our peers, specifically our human social networks, have a lot of influence when it comes to our lifestyle choices. According to the [American Psychological Association](http://www.apa.org/topics/obesity/support.aspx) (<http://www.apa.org/topics/obesity/support.aspx>), people who enrolled in weight loss programs with friends did a better job at keeping their weight off than those who did it alone.

[Bryan Wilder](http://teamcore.usc.edu/people/bryanwilder/default.htm) (<http://teamcore.usc.edu/people/bryanwilder/default.htm>), a USC Viterbi Ph.D. candidate in computer science advised by [Dr. Milind Tambe](https://viterbi.usc.edu/directory/faculty/Tambe/Milind) (<https://viterbi.usc.edu/directory/faculty/Tambe/Milind>) (Helen N. and Emmett H. Jones

Professorship in Engineering), and [Kayla de la Haye](https://keck.usc.edu/faculty/kayla-de-la-haye/) (<https://keck.usc.edu/faculty/kayla-de-la-haye/>), assistant professor of preventive medicine, believe there's an opportunity to optimize our peer influences to live a healthier life using artificial intelligence.

Intersecting de la Haye's knowledge of public health with Wilder's skills in computer science gave life to [USC's Center for Artificial Intelligence in Society's](https://www.cais.usc.edu/) (<https://www.cais.usc.edu/>) [RECONNECT model](http://teamcore.usc.edu/papers/2018/aamas_network_optimization.pdf) ([http://teamcore.usc.edu/papers/2018/aamas\\_network\\_optimization.pdf](http://teamcore.usc.edu/papers/2018/aamas_network_optimization.pdf)), a comprehensive algorithm that provides health practitioners the tool to form real-life peer support groups based on demographic, social and health-related data self-volunteered by patients.

Wilder and de la Haye will be testing their algorithm in Antelope Valley, a small region in California on the western tip of the Mojave Desert in which 15 percent of its 400,000 residents live below the poverty line. According to the [L.A. County Department of Public Health](http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/Correction/KIH_020617-sec.pdf) ([http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/Correction/KIH\\_020617-sec.pdf](http://publichealth.lacounty.gov/ha/docs/2015LACHS/KeyIndicator/Correction/KIH_020617-sec.pdf)), "only 10 percent of children living in this region are considered to be healthy by their parents, and rates of obesity are among the highest in L.A. County."

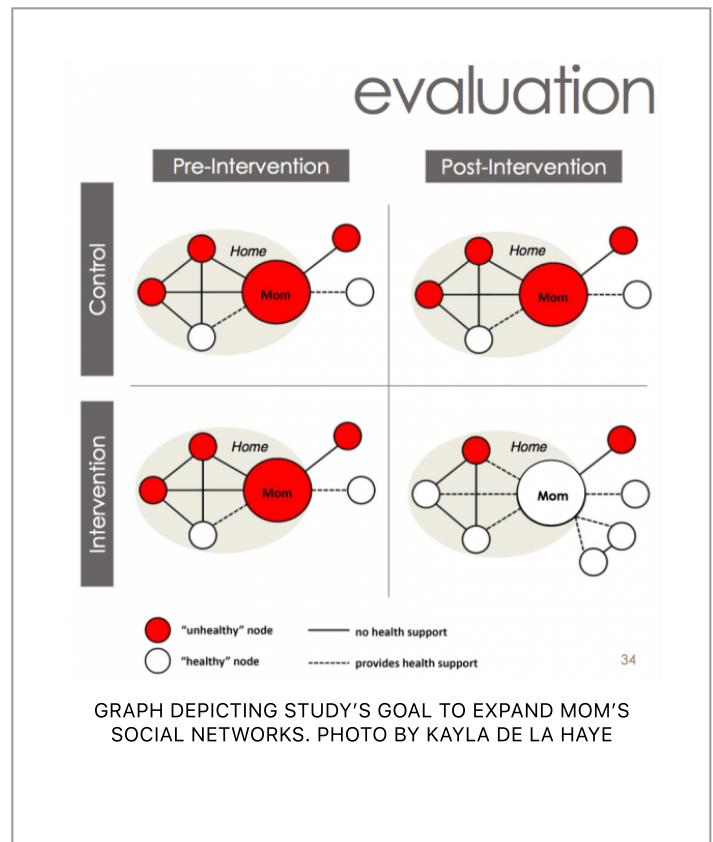
Their study's goal is to work with low-income moms and their infants to promote healthy eating and activity in order to prevent diseases like obesity and diabetes within children. A pilot research conducted by de la Haye found surprising data to support social intervention. For instance, particularly with this at-risk community in Antelope Valley, moms with young children have very few same-age peers, and those who have no peers and limited social support exhibit poor health-related behavior such as unhealthy diet and lack of exercise.

## **How it works**

"We know that the algorithm is thinking about the big picture of the entire social network," Wilder said. "Not just an individual person. It's considering these chains of influences when it takes someone who needs a healthy buddy and matches him or her up. The algorithm is a lot more effective because it manages the global picture."

RECONNECT creates networks on a big picture scale. Rather than recommend the right weight loss program like traditional methods, RECONNECT recommends the right people to surround yourself with for permanent behavior change. Embedded in a social circle that promotes health and well-being, you're better equipped to make healthier choices.

The National Institute of Health (<https://www.nih.gov/>) (NIH) is funding the next phase of their research in Antelope Valley. The NIH funding was granted to de la Haye and her co-principal investigator, Sarah-Jeanne Salvy (<https://www.norc.uab.edu/people/ssalvy>) of University of Alabama, Birmingham. This phase will involve a group of 300 families that will be enrolled in an 18-month home-visiting program monitored by a certified health professional. Half of the families will receive the standard home-visiting services while the other half will receive an enhanced home-visiting service with a new healthy lifestyle intervention and a family and peer support component facilitated by the RECONNECT model.



The researchers hope to see if families engaging in healthy lifestyles+RECONNECT are overall better off and have less risk for diseases like obesity and diabetes compared to families who receive only the standard in-home services.

Wilder and de la Haye believe their strategy to tackle obesity presents a more interactive approach than the traditional strategies based on cause and effect and survey after survey. Their dynamic model is continually tested, utilizing technology to create sustainable communities that physically and emotionally bring people together.



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