

The art of the *nudge*

Health program designers have an array of tools to “nudge” people toward the correct behaviors. Science tells us which ones work, which don’t and why.

The path to better health is littered with good intentions — and billions of dollars. Consider the year-end ritual of committing to a new fitness regimen or to quit smoking, only to snap back after a few attempts, then repeat the failed ritual 12 months later.

“Weight and health and wanting to be fit are fantastic motivators for getting us started and for putting money in company’s pockets, but ineffective for lasting change,” says Michelle Segar, director of the University of Michigan’s Sport, Health & Activity Research & Policy Center.

The authors of a 2016 study in Public Health put it more bluntly: “The assumption is, if you tell people what is good for them and what they need to do to protect their health, they will do it. However, they clearly don’t.”



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People don’t always do what’s best for them, or even what may bring pleasure. “When I think about how to create sustainable change,” says Segar, “my motto is the driver has to be very compelling.”

The reasons for encouraging health behavior change are everywhere around us, and backed up by years of data. According to the National Center for Biotechnology Information, roughly 40% of deaths in the U.S. stem in part from health behaviors that can be modified. Chronic conditions such as these account for 90% of total U.S. healthcare costs, according to the Centers for Disease Control and Prevention.

Aiming to solve this problem and armed with data that proves human behavior can be redirected with the right combination of interactions, information and human coaching, new digital-health programs and apps to support these goals have exploded in recent

years. More than 1.4 billion people are expected to use them by 2025, according to Jupiter Research.

A central feature of many of these offerings is the “nudge” — ideally designed and personalized motivators, prods and reminders that can create lasting behavior change. (Think of a personal message from a coach or a caregiver, congratulating you after logging a workout or taking your medication on schedule.) Or, they can create no change at all, if targeted or delivered the wrong way. (Think of a health app prodding you relentlessly to take a lengthy quiz.)

Most experts view nudges as one tool in the quest for behavioral change. “They can be very effective in motivating short-term behavior change,” says Gary Bennett, a professor of psychology and neuroscience at Duke University. “But they’re not the entire treatment.”

Here’s a look at which nudges work, which don’t and why.

Nudges that work **They’re subtle, and give** **people control**

“For years, behavior change has been the key to lowering your risks for chronic health conditions,” says Arlen Moller, an associate professor of psychology at Illinois Institute of Technology with a focus on health psychology and behavioral medicine. The most effective nudges aim for the long-term and strive to outlive their usefulness.



“Once people have started to create the routine that makes sense for them, they don’t often need reminders anymore,” says Jennifer La Guardia, director of clinical product and behavior science at Omada Health. Scientific analysis has shown that certain types of nudges can lead to positive health outcomes.

Reminders with a payoff

Anyone who’s used a fitness app knows about reminders — text messages or device notifications tied to a program you’ve signed up for. A reminder might ask you to weigh yourself each morning and record the data.

The outcome of the reminder — a reward in the form of helpful information — is critical to success, says Bennett. “If we do it well, we give you insights about yourself and make it easier to make those changes yourself,” he says. For instance, it matters how long after stepping on the scale that participants get something in return. “You’ve got to minimize that time between

the information and the prize,” says Bennett.

In one study, 186 adults with heart problems were nudged via text, email and phone calls to adhere to their medication schedule. Compared to a control group, those nudged were more likely to take their medication, on more days (80% of days).

Similarly, Massachusetts General Hospital used reminders to support patients undergoing lumbar spine surgery with messages about healthy behaviors before and after the operation. Readmission rates, an important measure for hospitals, decreased 75%.

Not all reminders, of course, are effective. “The key is to allow people to be choiceful,” says Omada’s La Guardia. “For people who hate getting on the scale, and you’re reminding them every day to do it, simply nudging them won’t likely help them follow through. In fact, it may have the opposite effect and make them avoid it.” The most effective

reminders, she adds, give individuals some control over what and how they're given, from the timing to the topics.

Coach-enabled nudging

Some of the best health outcomes integrate human providers with digital tools. One example is a program that reduced the risk of diabetes among a Medicare population, according to a 2018 study in *Journal of Aging and Health*.

In this study — which focused on a digital care program from Omada Health and took place over 16 weeks — 500 individuals were given tools to improve their health, including lessons, daily exercises, reminders and more. Importantly, the tools sent the individuals' data to health coaches who reviewed the information and provided feedback or consultations. Researchers concluded that the combination of coaching with the digital tools led to improvements in weight, well-being and overall health.

Indeed, plenty of studies have shown the benefits of coaching, such as goal attainment and reduced procrastination. Coaches can help influence, but not control, behavior. “There’s a certain hierarchy,” says Illinois Tech’s Moller. “The coach knows more and has more status. A better model is to position the dynamic as ‘we’re on this team together, this is a partnership. I’m here to lift you up.’”

Trackers that personalize

From FitBit to the Apple Watch's many apps, there's no end to an individual's options for keeping, compiling and



monitoring health data. But do they work?

As behavior nudges, activity trackers can be effective in surprising ways: A review of data from 8,500 medical and pharmacy claims showed that people who used health trackers for steps, sleep, weight or diet were significantly more likely to stick to their medication schedules. Another study found that the use of digital trackers increased the amount of exercise by overweight postmenopausal women by 38 minutes per week.

Part of the success of activity trackers is due to the personalized nature of the functions they provide — or the perception of personalization. “What matters is that a person believes it was person-

alized,” says Bennett. Activity trackers allow individuals to work against their own baseline — information they have at their fingertips.

Nudges that fail **Instant, but ineffective,** **gratification**

Behavior change isn't black-and-white and there isn't a one-size-fits-all. Some nudges work well for a portion of the population, but only if all conditions are right and it fits their lifestyle, personality and habits. Here's how two of the most common behavioral nudges can go wrong, and how they might be put to better use.

changes. On the whole, the authors concluded, little research has been undertaken to examine the effectiveness of gamification. What's more, it could be that just as with other nudges, gamification's one-size-fits-all doesn't work. There may be different roles for game users that some games may not include.

Experts warn that if gamification does bring about behavior change, it isn't long-lasting, especially for people with more complex or chronic health conditions. “The problem is that you're not focusing on learning the behavior, you're more focused on getting the reward, and when the reward is



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Over-gamification

Points, stars and other incentives have been widely used to encourage behavior change, from education apps such as Khan Academy to merchant loyalty programs. Many healthcare apps also deploy gamification elements to influence behavior. As one study suggested, gamification can add a powerful motivational component to digital health interventions.

But another study that reviewed gamification in health apps concluded that users didn't make meaningful

achieved, there is less incentive to do the behavior,” says La Guardia.

Financial perks

The most influential experts on the behavioral nudge — Cass Sunstein and Richard Thaler, authors of the best-selling book, “Nudge: Improving Decisions about Health, Wealth, and Happiness” — have long disavowed financial incentives as effective strategies.

In fact, countless studies have looked at the potential effectiveness of financial incentives and drawn the

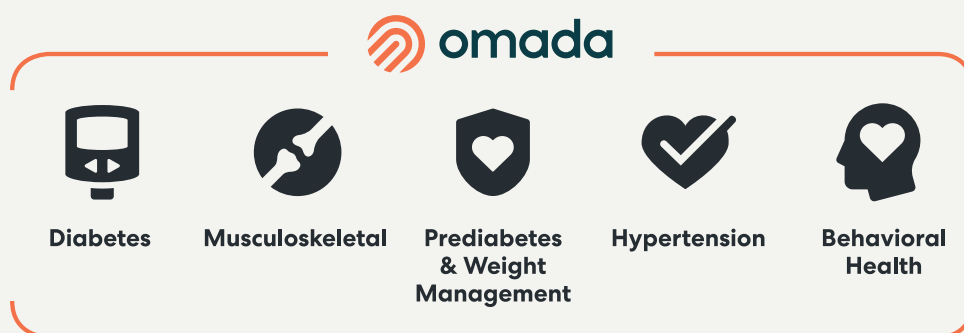


same conclusion. Some have suggested it's counterproductive or even unfair to reward people for behavior that's already in their best interest, according to one group of researchers. Perhaps most damning of all, a 12-month weight-loss study in which participants were offered financial incentives produced no weight changes at all.

It will be up to digital-health product designers, in the years to come, to identify and implement the most effective nudges for any given program. It's a complex undertaking with risks, but the potential for positive change is

ever-present. "The bottom line," write Sunstein and Thaler, "is that people are, shall we say, nudge-able. Their choices, even in life's most important decisions, are influenced in ways that would not be anticipated by a standard economic framework."

All of which suggests that nudge design will remain as much art as science. "Humans are infinitely complex when it comes to behavior change," adds Duke University's Bennett. "We shouldn't expect there to be universal law to this." ■



Omada Health combines the latest clinical treatment guidelines with breakthrough behavior science to make it possible for people with chronic conditions to achieve long term improvements in their health.