



IRRATIONAL LABS

THE EIGHT

✓ *Dos &*

✗ *Don'ts*

OF BEHAVIOR CHANGE

(for employers)



LET'S GET STARTED

Using incentives to motivate behavior is as old as time. Parents reward kids with dessert for eating their vegetables. Companies reward customers with discounts when they tell a friend about the service.

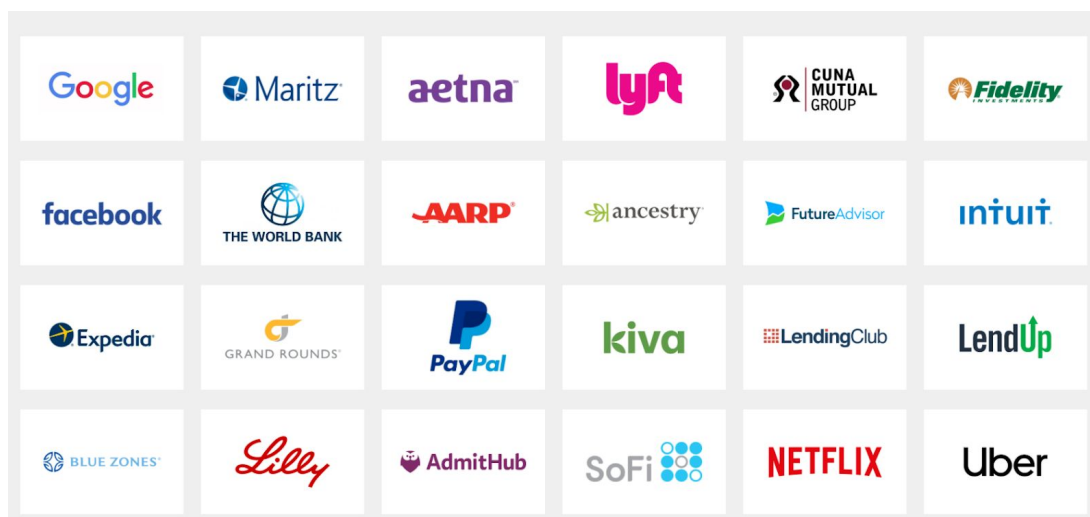
At Irrational Labs, we believe incentives make the world go 'round. They drive our behavior, your behavior and your employees' behavior. However, most companies only consider a very narrow definition of incentives - money. Of course money is a great motivator - but it's not the only motivator nor is it always the best motivator. And, it's expensive!

In this brief paper, we give you 8 Do's and Don'ts for incentivizing your employees to take actions that improve their health. Are you trying to increase the adoption of your benefit programs? Or help employees navigate their insurance options? Are you trying to drive medical adherence or physical activity? These Do's and Don'ts are must-reads for you.

Caution: These are only the beginning. There are 50+ more Do's and Don'ts that you should know to succeed in designing a successful well-being program. Reach out at info@irrationallabs.com and we'll fill you in.

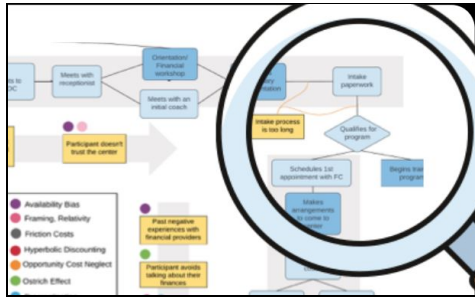
Who are we?

Irrational Labs is a behavioral economics company. We have worked with the top employers across domains to drive behavior change for good.





Here are the types of projects we can help you with:

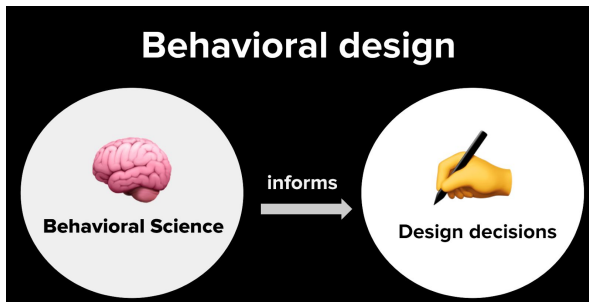
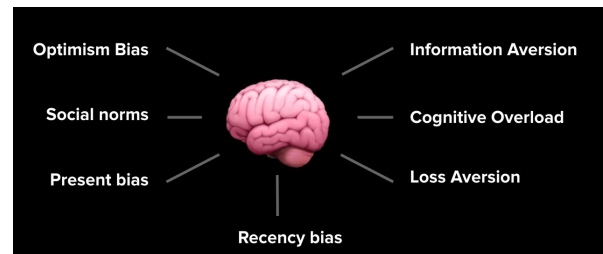


Benefit Program Assessment

We use behavioral economics to do a behavioral diagnosis of your existing end-to-end benefit system and programs. You get a prioritized assessment of your programs with dozens of behavior change recommendations - from the high level strategy to the tiny details - all of it based on science.

Growth Hacks: Drive uptake & engagement

Do you want to increase enrollment in your offerings? Or increase engagement in your services? We analyze your programs and provide tactical, actionable (and low cost!) growth hacks to drive uptake.



Behavioral Economics Online Training

Want to learn more about how to design programs that work? Take our 8 week behavioral bootcamp - designed solely for people like you. This bootcamp has a focus on health research, health outcomes and healthy people.

Innovation Process and Workshop

Just starting your benefit program? Or want to give your current one a refresh? We use science to inform our innovation process. Give us a challenge and we'll mock up 3-5 different feasible solutions that will drive your key outcomes. We run a workshop to co-create the final solution with your team.



Get in touch with us to discuss what option is right for your team info@irrationallabs.com



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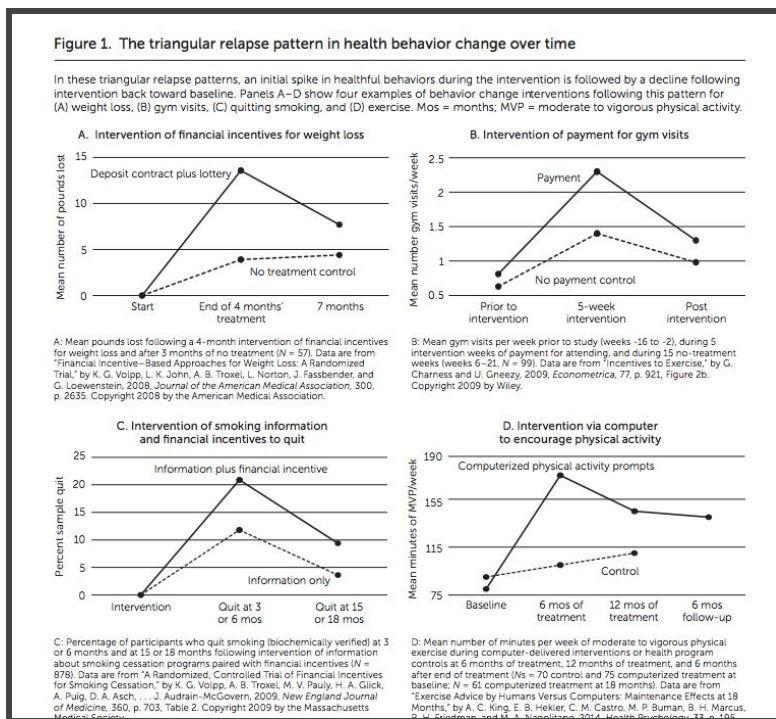


ONE

DON'T USE CASH TO INCENTIVIZE HABITUAL BEHAVIORS

The effect of monetary rewards on daily behaviors is mixed. Yes, they can change behavior during the payment period¹, but the effect rapidly decays. In almost all cases, as soon as the money stops, the behavior starts to decrease, and after about 3 months, it's as if nothing had ever happened. Lasting change is the rare exception², not the rule.³

The chart below shows the depressing trend line: there is an initial spike in healthful behaviors during the intervention. But, it's followed by a decline back toward baseline once the incentive is removed.



Takeaway: If you don't keep paying people to do something, the behavior will fade

¹ Giles, E. L., Robalino, S., Mccoll, E., Sniehotta, F. F., & Adams, J. (2014). The Effectiveness of Financial Incentives for Health Behaviour Change: Systematic Review and Meta-Analysis. *PLoS ONE*, 9(3). doi:10.1371/journal.pone.0090347

² Loewenstein, G., Price, J., & Volpp, K. (2016). Habit formation in children: Evidence from incentives for healthy eating. *Journal of Health Economics*, 45, 47-54. doi:10.1016/j.jhealeco.2015.11.004

³ Wood, W., & Neal, D. T. (2016). Healthy through habit: Interventions for initiating & maintaining health behavior change. *Behavioral Science & Policy*, 2(1), 71-83. doi:10.1353/bsp.2016.0008



DO INCENTIVIZE ONE-TIME BEHAVIORS

If you wanted to reduce sedentary behavior, would you pay people to take walks? Would you set up reminders to stand every hour? Be bolder. *Get rid of chairs*. The movie director Christopher Nolan is apparently also a budding behavioral designer and does not allow chairs on his sets to ensure that the actors stay “on [their] toes, literally.”⁴

We’re not sure about what it will do for your Oscar chances, but we know that intervening further upstream will naturally change all subsequent behavior. Identify the single actions with big impacts, like ordering a standing desk or getting a flu shot and spend your incentive money there rather than on the habitual behavior that follows, like daily walks or hand-washing.



Good one-time behaviors include:

- Send your employees small plates to reduce calorie intake⁵
- Switch to automatic refills and mail order RX delivery⁶
- Help women switch to IUD contraception instead of birth control pills⁷
- Have employees to save the hospital triage number in their contacts

⁴ Singh, O. (2020, June 29). Anne Hathaway says director Christopher Nolan 'doesn't allow' chairs on set. Retrieved from <https://www.insider.com/anne-hathaway-christopher-nolan-no-chairs-on-set-interview-2020-6>

⁵ Wansink, B., & Ittersum, K. V. (2013). Portion size me: Plate-size induced consumption norms and win-win solutions for reducing food intake and waste. *Journal of Experimental Psychology: Applied*, 19(4), 320-332. doi:10.1037/a0035053
“Buffet diners with large plates served 52% more, ate 45% more, and wasted 135% more food than those with smaller plates. Moreover, education does not appear effective in reducing such biases. Even a 60-min, interactive, multimedia warning on the dangers of using large plates had seemingly no impact on 209 health conference attendees, who subsequently served nearly twice as much food when given a large buffet plate 2 hr later “

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⁶ Kaiser Permanente study (2016) ([Study not online: reference link to press release](#))

“Mail order pharmacy delivery can boost medication adherence rates by over 25 percentage points. The study, which looked at patients who had suffered a stroke, showed that patients picking up their prescriptions from a community pharmacy were adherent to their treatments 47 percent of the time. For patients receiving a mail-order pharmacy delivery, that number rose to 74 percent.”

⁷ Wiltjer, C. A., Duff, P., Williams, K., & Shuster, J. J. (2015). Measuring Adherence to Birth Control Pills Among College Women [229]. *Obstetrics & Gynecology*, 125. doi:10.1097/01.aog.0000463154.89957.a3

Summary: Birth control is ineffective at high adherence; in survey 73.5% did not take the pill at the same time daily; 52% of respondents skipped at least one dose of the pill within the month preceding the survey.



DO SUPERSIZE YOUR REWARDS TO MAKE \$\$ GO FARTHER

From a practical standpoint, incentives for daily behaviors or for large populations will add up quickly. One alternative to daily, individual cash reinforcement is a lottery. *Here is an example of a lottery...with a twist:*

Imagine that your neighbor won a lottery drawing and received \$2,500. You'd feel envious, but it's hard to imagine a world in which you also picked those exact same lucky numbers. There's not much you could have done differently, and there's not much to regret. Now imagine that this particular lottery is slightly different. The government draws a combination of numbers that create a postal code. All of the households in that postal code that purchased a lottery ticket are winners! And if you didn't buy a ticket when your neighborhood won, it's very obvious where you went wrong.

This is the setup of the *Dutch Postcode Lottery*.⁸ Like all lotteries, the PCL uses a monetary incentive to encourage participation, but it layers on that powerful behavioral principle, regret aversion. Their ads emphasize the sorrow a non-participant would feel when their neighborhood won.

And it works! People are more likely to buy tickets for the postcode lottery rather than the national ticket lottery when they consider how regretful they would feel to almost win; about 2.5 million Dutch play each year.⁹

Healthcare professionals have also used **regret lotteries** to encourage medication adherence. Just like in the postcode lottery, all patients are entered in the prize drawing and are eligible to have their name selected as a winner. But, a patient can only claim their prize if they have taken their medication. Avoiding this regret is a powerful motivator. Adherence levels improve with the use of a regret lottery¹⁰, and the effect may be most powerful for those patients who were more non-compliant to start.¹¹

⁸ Dutch Postcode Lottery. (2020). Retrieved from <https://www.novamedia.nl/charity-lotteries/the-netherlands/dutch-postcode-lottery>

⁹ Kuhn, P., Kooreman, P., Soetevent, A., & Kapteyn, A. (2010). The Effects of Lottery Prizes on Winners and Their Neighbors: Evidence from the Dutch Postcode Lottery. *American Economic Review*, 101(5), 2226-2247. doi:10.1257/aer.101.5.2226

¹⁰ Husain, S. A., Diaz, K. M., Schwartz, J. E., Parsons, F. E., Burg, M. M., Davidson, K. W., & Kronish, I. M. (2019). Behavioral economics implementation: Regret lottery improves mHealth patient study adherence. *Contemporary Clinical Trials Communications*, 15, 100387. doi:10.1016/j.conctc.2019.100387

¹¹ Kimmel, S. E., Troxel, A. B., Loewenstein, G., Brensinger, C. M., Jaskowiak, J., Doshi, J. A., . . . Volpp, K. (2012). Randomized trial of lottery-based incentives to improve warfarin adherence. *American Heart Journal*, 164(2), 268-274. doi:10.1016/j.ahj.2012.05.005



DO TIME REWARDS IMMEDIATELY AFTER THE BEHAVIOR YOU WANT TO ENCOURAGE

Rewards can be very powerful - but we can tire of rewards, too. It's important to think through when, and how often, you should give rewards to the people whose behavior you're trying to effect.

It's ideal for rewards to be given at the time the behavior occurs or immediately afterwards. You want the reward to be as immediate as switching on a light: click, voila! We want our customers to make a clear connection between their behavior and the reward, which is why timing is so important. And of course, we're present biased, tending to over-value the present in comparison to the future.

You also want your rewards to be linked to the behavior *from the very start*. It's much harder to change behavior, incentive or not, after a different habit has been formed.

Some examples of good reward timing:

- Applause at the end of a musical performance.
- Praise from a yoga teacher after valiantly attempting your first class.
- A simple animation of a progress bar filling up after filling in part of your profile information.

Examples of bad reward timing:

- An incentive payment that comes at the end of a quarter or a year.
- Weight loss! You eat a salad and the scale doesn't change!
- Receiving a high grade for a test you took two weeks earlier.

Example of good reward timing: The car

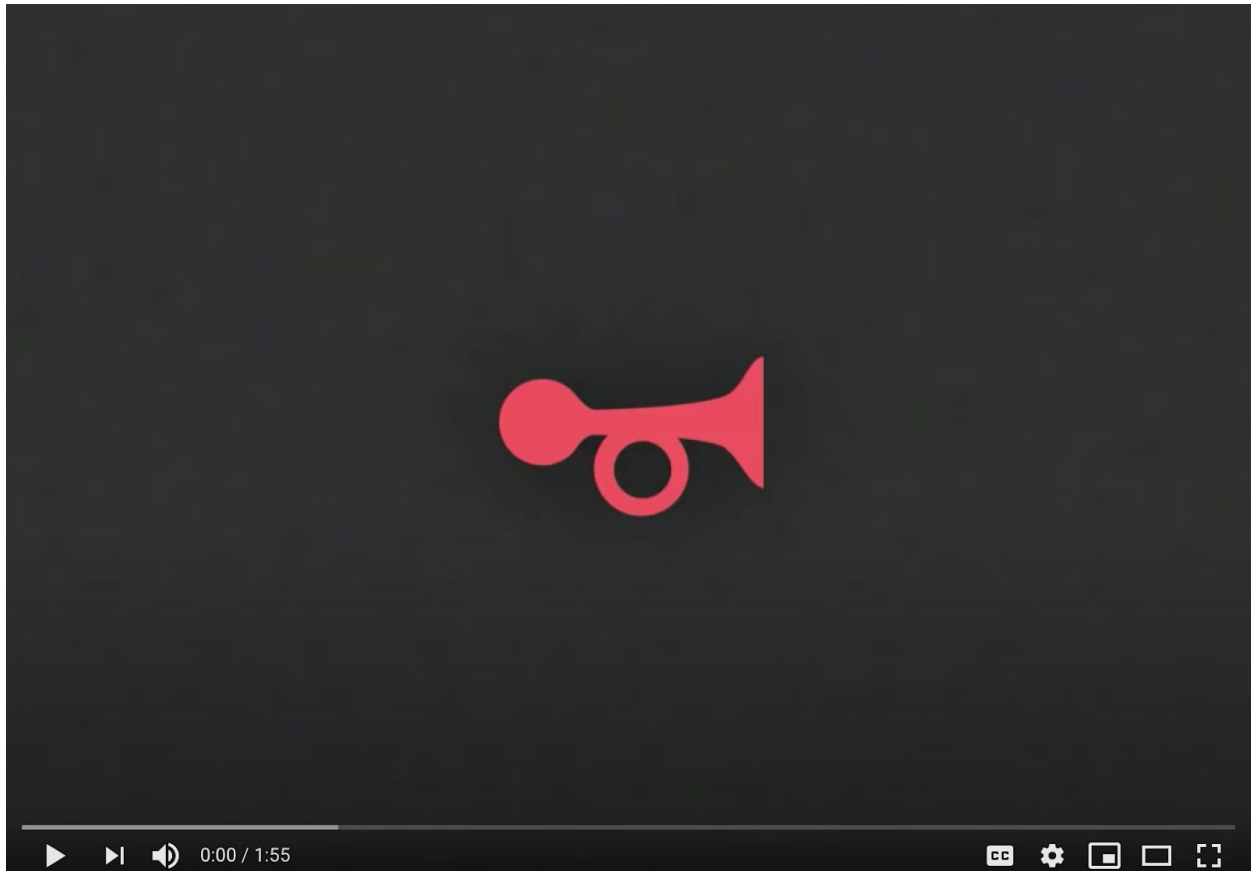
If you incentivize the right behavior at the right time, you can make sure habit changes are in the direction of health. When we're first getting people to perform a certain behavior, we want the rewards to be given each time the behavior occurs, so that customers make a clear connection between the behavior and the reward.

Here is a fun example of how a reward (or in this case a punishment) is timed with the behavior it is trying to discourage.



This internal horn beeps every time that you honk at the cars beside you. The goal is to dissuade you from honking because if you do, the internal horn will blast! The incentive timing is immediate. If you take an action, you receive fast feedback from the system that incentivizes you to behave differently.

[See it here.](#)¹²



¹² *Bleep - Honk Reduction System* [Video file]. (2013). Retrieved from <https://www.youtube.com/watch?v=JzBmc3yjpoc&feature=youtu.be>

Most of us are familiar with another type of beeping as well: the seat belt reminder system. It beeps - and it works. In the early 2000s, research was conducted on how effectively auditory and visual warnings would remind drivers to buckle up. The Insurance Institute for Highway Safety and Ford teamed up to compare seat belt use in cars with and without the Ford Beltminder™ system, which sends out a low warning tone and flashes a dashboard light when seat belts aren't buckled. They found increases in use from 3-8%, depending on the car and its typical driver (women in minivans and men in pickups are most responsive). On average, wearing rates were 76% for drivers with reminder systems compared to 71% of drivers without.

**DO FOCUS 90% OF YOUR EFFORTS ON ENGAGING PEOPLE AT THE START****New hire onboarding is a key moment**

Have you ever tried to take a new route to work but found yourself making the same old turn out of habit?

Much of our daily behavior is habitual: automatic and consistent. Context triggers them: taking off your shoes when you get home or brushing your teeth after washing your face. This makes our lives easier, since you can do some actions on auto-pilot and save your mental energy for other things, but it also means that changing those ingrained behaviors is an uphill battle.

The best time to reward a behavior in the hopes of sustaining that behavior is at the beginning, when you first start out.

After a move, everything is chaos. You can't find anything in your house, you don't know your neighborhood yet, and you have to set your life up again. Your new context means that old habits, strong and weak alike, are disrupted because their triggers are missing. A chance for new triggers arises.

For a behavioral designer, the 3 months after a move are a golden window of opportunity. People are more likely to change their exercise behavior, their TV watching, and their environmental behavior when they drastically change their circumstances by moving.¹³ Researchers found 400 households that had moved within the last 6 months, and matched them with 400 similar households that stayed put, and then tested incentivizing various household environmental behaviors, like shorter showers and recycling.¹⁴ The incentive was effective, but it worked better the more recently you'd moved. (We should also point out that the incentive was a Green Goodie Bag- a tangible thing, not a monetary reward).

¹³ Wood, W., Tam, L., & Witt, M. G. (2005). Changing circumstances, disrupting habits. *Journal of Personality and Social Psychology*, 88(6), 918-933. doi:10.1037/0022-3514.88.6.918

¹⁴ Verplanken, B., & Roy, D. (2016). Empowering interventions to promote sustainable lifestyles: Testing the habit discontinuity hypothesis in a field experiment. *Journal of Environmental Psychology*, 45, 127-134. doi:10.1016/j.jenvp.2015.11.008



DON'T RELY ON HEALTH EDUCATION

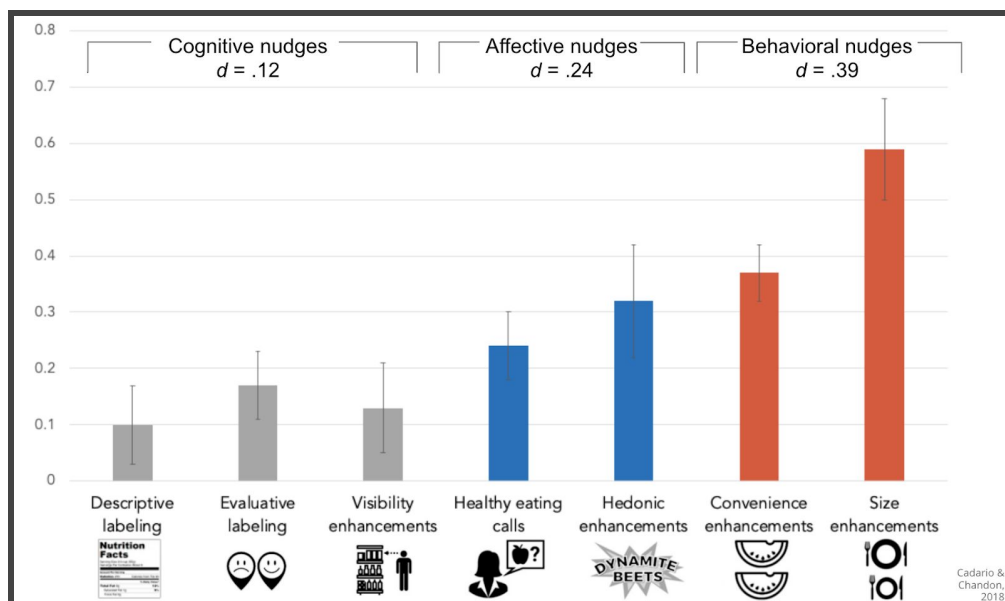
We all want to lose weight. And yet, the prevalence of obesity in the U.S. was 42.4% in 2017~2018. We all want to lose weight...but we're not that good at it.

Is it that we don't know we should work out and eat healthy? Nope. We all know these things. It's just much easier said than done.

Likewise, educating your employees on the basic benefits of being healthier or how to be healthier, doesn't close the gap. If providing information about how to be healthier was the magic bullet, we'd all be thin!

What does work?

We need to design our environment so that it is **easy** to make choices that benefit health outcomes. Just knowing what to do and how to do it is not enough. I know I should take my medication, but some mornings I just forget.





In a study of 299 interventions researchers find that effect size increases as the focus goes from trying to change my mind to trying to change my behavior. Instead of telling me that food is unhealthy (cognition intervention), make it harder to reach (behavior intervention).¹⁵

For example, making a food slightly more difficult to reach (by varying its proximity by about 10 inches) or changing the serving utensil (spoon or tongs) modestly but reliably reduces intake, in the range of 8–16%.¹⁶

Employees know that they have an HSA available to them, but they don't sign up. They know they have a website with information on amazing benefit options, but when the time comes to use it, they call 911, or worse, delay treatment options.

If you really want to reduce health costs, employees will need more than information about their health. They need systems to close the gap between the intention to do something and the actual action required to execute.

¹⁵ Cadario, R. & Chandon, P. (2020). Which Healthy Eating Nudges Work Best? A Meta-Analysis of Field Experiments. *Marketing Science*. (Forthcoming). 10.1287/mksc.2018.1128.

¹⁶ Rozin, P., Scott, S., Dingley, M., Urbanek, J. K., Jiang, H., & Kaltenbach, M. (2011). Nudge to Nobesity I: Minor Changes in Accessibility Decrease Food Intake. *Judgment and Decision Making*, 6 (4), 323-332. Retrieved from https://repository.upenn.edu/marketing_papers/410



DON'T REWARD OUTCOMES (REWARD PROCESS)

It's hard for people to determine the optimal way to achieve a goal or outcome. Lose 5 pounds. Be a good employee. You may do something one day that's great (eat a salad) and something the next that is not so great (eat a slice of cake). If a reward system rewards only your overall outcome (lose weight), it would be hard to figure out what the "right" thing to do is! Instead, if you are rewarded for eating a salad, the incentive system reinforces the correct behavior.

An example:

A group of researchers conducted randomized incentive experiments in public schools in four urban school districts—Chicago, Dallas, New York City, and Washington between 2007 and 2009¹⁷ For some students they incentivized educational inputs (like attendance or reading a book). For some students they incentivized educational outputs (like grades). Overall, the study distributed \$6.3 million in incentive payments to roughly 38,000 students in 261 schools!

What happened? Incentives for **educational outputs, such as better grades, were found to be less effective than incentives for educational inputs**, such as attendance, good behavior, or wearing uniforms.

Why? One possible reason is that students can control inputs directly but, even if they are motivated by rewards, may not know how to turn their efforts into success.

So what? When you're designing an incentive program, make sure you're incentivizing the behavior, not the outcome. If you want people to control their blood pressure, you'd incentivize taking their medication each day, not a particular BP reading. If you understand your outcome, you should know what behaviors are most likely to cause it. Trust the process.

Examples:

- Go out to eat no more than once a week (vs weight loss)
- Exercise for 20 minutes 3x a week (vs lose 5 lbs)
- Apply to 10 jobs (vs get a job)
- Go to bed at the same time every night (vs hours of sleep)

¹⁷ Gneezy, U., Meier, S., & Rey-Biel, P. (2011). When and Why Incentives (Dont) Work to Modify Behavior. *Journal of Economic Perspectives*, 25(4), 191-210. doi:10.1257/jep.25.4.191

EIGHT



DO BE CAREFUL OF SELF-SELECTION

Imagine you were to offer someone who exercises a lot (think about your friend who is always going to the gym) money if they participated in an exercise program. Would they do it?

Likely. It's easy money! They are always working out, and now they'll get paid for it! It's a no-brainer. Now imagine offering someone who doesn't exercise a lot of money if they participated in the same exercise program. Would they do it?

Maybe. The person who doesn't already exercise would actually need to change their behavior to participate in the program. They would need to start going to the gym, and we know there are a lot of barriers associated with that.

The person who is already working out would only have to minimally change behavior. So what? This is an example of how an incentive could attract people who are already doing the behavior you want. In effect, you'd be wasting your money and time because they don't need the incentive.

This is a problem for researchers and program designers alike. If you just look at the people who enroll in your program, you may be led astray. The enrolled population would look more active when you compare their level of exercise to the general population. Looking at that data, you may think you designed a really great exercise program (and incentive program). The incentive "worked" because it got people to change their behavior. However, that may not be the case!

This is self-selection.

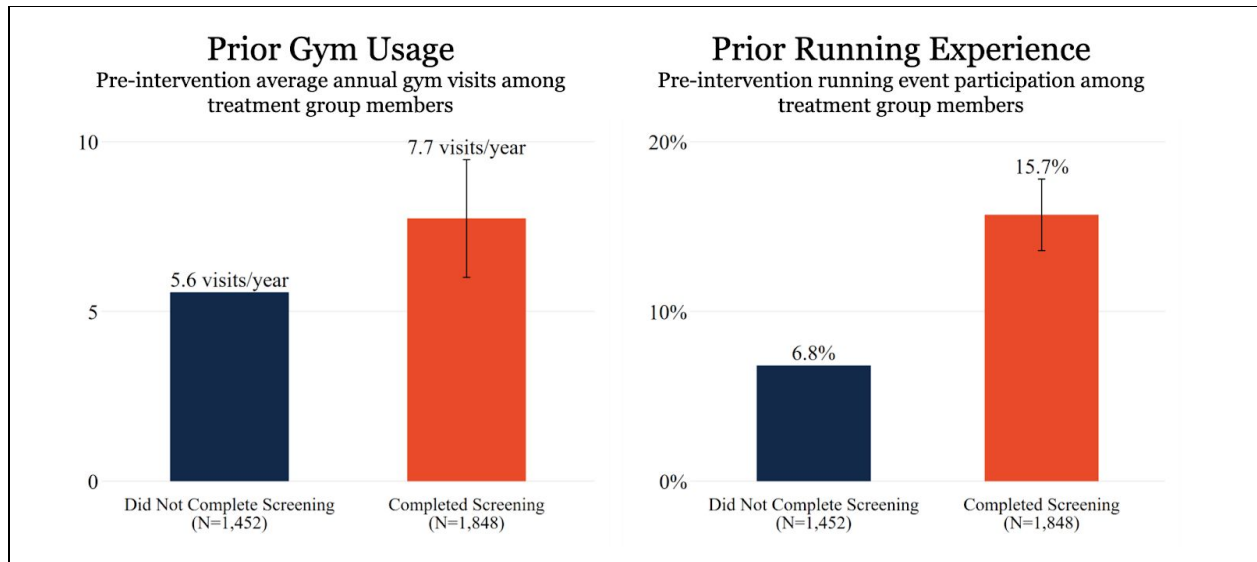
Self-selection bias is the problem that results when people can sort themselves into a group, leading to biased sampling. This is commonly seen when people are allowed to decide entirely for themselves whether or not they want to participate in a program.



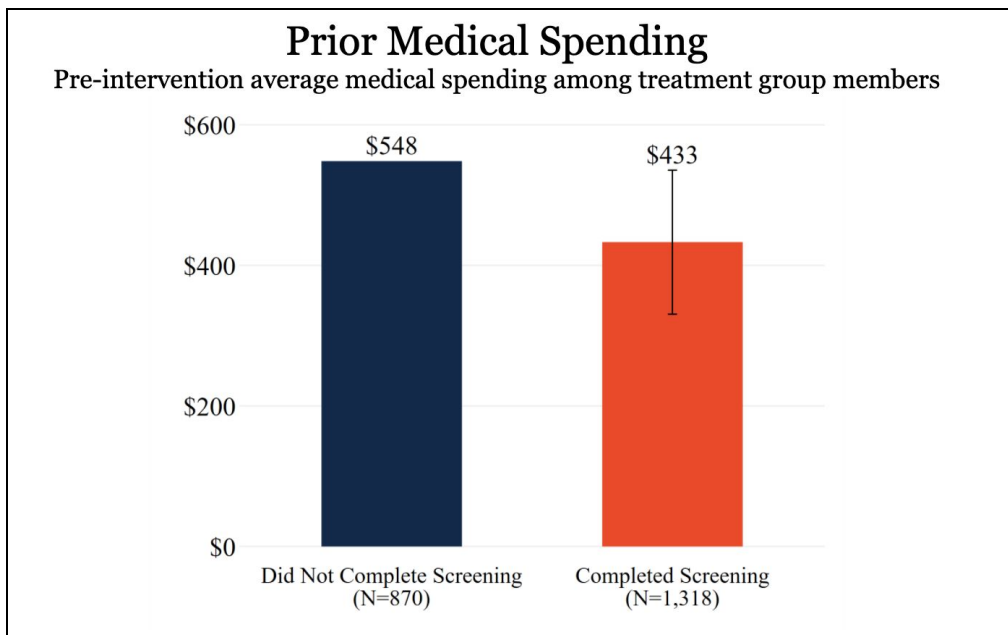
Example:

Check out the following graphs about participation in a Workplace Wellness Study.¹⁸ In this program, people were randomly assigned to *have access to* a wellness program. If someone chose to participate and completed their activities for the semester, starting with a screening, they could earn up to \$275.

This first set of graphs compares people in the access group who chose to skip the health screening and not participate in the program vs. those who did participate. What do they tell you?



¹⁸ What Do Workplace Wellness Programs Do? (2020). Retrieved from <https://www.nber.org/workplacewellness/>



You can tell that those who opted to use the wellness program and complete the health screening were already using the gym and running more, and had fewer medical expenses. This is a prime example of self-selection bias!

When you compare the treatment and control groups after the intervention, we don't see any statistical differences. The program didn't have an effect on outcomes, likely because in each group there was a group of people who were already willing to go to the gym and run more. The intervention itself didn't change their behavior, it just started paying them for it.

The takeaway?

Spend your incentive budget wisely! Make sure you're not wasting your money on people who would already be doing the thing you want them to do. This is why many companies often reward first-time behaviors; they don't want people to abuse the system and get a reward every time they take an action they were already planning on doing.

Want more like this?

Contact Irrational Labs at info@irrationallabs.com to see how we can work together