

benefits

MAGAZINE

Reproduced with permission from *Benefits Magazine*, Volume 54, No. 10, October 2017, pages 50-54, published by the International Foundation of Employee Benefit Plans (www.ifebp.org), Brookfield, Wis. All rights reserved. Statements or opinions expressed in this article are those of the author and do not necessarily represent the views or positions of the International Foundation, its officers, directors or staff. No further transmission or electronic distribution of this material is permitted.



pdf/1017

by | Jonathan Dugas, Ph.D.



Can Technology Improve Health Care Decisions?

Making a personal health decision is a complex process. The author discusses the factors that enter into such decisions and the growing role of technology.

“**D**ecisions, decisions, decisions. . .” How often do we recite this in our daily lives when faced with any one of the seemingly endless choices we must make each day? The act of choosing seems like an infinite one, present in each moment of our lives. Should I take Main Street or Maple Street to work? Bring my lunch or buy? White bread or wheat? These are rather superficial decisions, ones we make every day that do not require much additional information. We make them based on a preference, a whim or perhaps a past experience that guides us.

Making decisions, even simple ones, can look easy on the surface, but it is the complex nature of our brains and their information-processing power that produce that apparent ease. The truth is that making even simple decisions is a complex process, and many scientists have spent their careers examining how we make choices in a variety of different situations, trying to

unlock how our brains function in the decision-making processes. But before we dive into the science of decision-making, let's first examine how a special set of choices we make can have important consequences.

Mixed in amongst the numerous daily decisions are those that require additional information or that can have dire consequences and can't or shouldn't be made on a whim or a preference: *personal health decisions*. A simple example and one that can have immediate impact is choosing to wear your seatbelt. Another one with a longer time line is choosing to receive a flu vaccination. Both can impact your health and therefore fall into this category of personal health decisions.

You might expect that when it is time to act on our health, we all take a deep breath, examine all the facts and make the wisest choice—But you would be wrong. Remember, making decisions, no matter for your health or your commute to the office, is a complicated act, influenced by many internal and external factors. In addition, personal health decisions are just that—personal. Many individual factors therefore impact the final choice.

Wise Health Decisions

One health education company uses a formula to illustrate how we can make good health decisions: medical information + your information = wise health decisions.¹

takeaways

- Like all decisions, the process of making a personal health decision is complicated and influenced by many internal and external factors.
- One formula for making good health decisions is combining medical information with factors such as the patient's beliefs, fears, lifestyle and past experiences to arrive at a decision.
- *Patient inertia*, a tendency to stick with the status quo and not make a choice, is an example of a factor that impacts the ability to make the right health decision.
- Personal technology such as wearable devices that provide access to health information also can be a factor in health decisions.
- A blood glucose monitor, for example, is a technological device that may help patients with diabetes make better health decisions by giving them a better understanding of how well they are managing their condition.

In that model, you take the information available about the decision (the *medical information*) and combine it with *your information*, which includes things like your beliefs, fears, lifestyle and past experiences. These—and more—influence your decision-making ability and can pull it in one direction or another. You might know that receiving a flu vaccination can greatly reduce the chances of getting the flu. But maybe the last time you had a flu vaccination your arm was terribly sore, or perhaps you have a not-so-uncommon fear of needles. Even though you might understand that getting the vaccination is the “right” thing to do, these past experiences can weigh heavily on your choice to go ahead with the shot. When the many personal factors that can introduce bias are added to the wealth of information that we need to process, it might seem truly incredible that we aren't paralyzed every time we need to choose.

Fortunately, how we make decisions, when related to our health or not, is a widely studied area. One of the processes we do know can impact our ability to choose, and to make the “right” decision, is something behavioral scientists call *patient inertia*. Patient inertia represents an obstacle to compliance with our doctor's orders. It's the many things that weigh us down and prevent us from acting including, of course, our personal and past experiences but also our desire to keep things just as they are. As creatures of habit, the status quo is the familiar, the things we are used to.

Scientists have examined this and quantified how we tend to remain on our current path, either by selecting a default option presented to us—that is, a choice that is already selected and permits us to just proceed—or by simply abstaining from choosing an alternative path. But the interesting thing is that even when the status quo represents the worse of two different options, we tend to stick with it instead of choosing the better option. Research has demonstrated that when required to make a proactive decision, we most often opt for the status quo by not making a choice at all. A real-life example of this kind of inertia is how difficult it can seem to take the stairs versus the elevator, even when climbing just one or two floors. In this case we remain in our routine and take the elevator instead of the alternative path of taking the stairs. Most would agree that the elevator is the worse choice, yet there we are all together in the elevator every day.

That's just a taste of some of the complexity that sits behind our decision making. Ultimately, we process the information

we have available to us, perhaps from prior experience or maybe from a source we have in front of us, and we combine that with our own personal beliefs, values and experiences to arrive at a choice. And as we have seen, the choices we make are not always the “right” ones.

Technology: Friend or Foe?

The pace at which technology continues to infiltrate our lives can feel overwhelming. It promises to help us in our daily lives. In some instances, it certainly does, while in other areas it’s up for debate. In the age of the Internet, information is available as it has never been before in the history of humankind. Yet accessing the right information at the right time, when you need it to make a wise decision, can still be a challenge.

If we add technology into the personal health decision equation, we might describe the personal health decision process as the intersection between three areas: (1) our own individual responsibilities, (2) our health risks and (3) technology. *Technology* can be a broad term, so in this case we are talking about personal technology such as wearable devices as well as screens that permit us to access passive and interactive information. The area where these intersect, which might be smaller or larger for each of us, is where there is real potential to improve health. The \$64,000 question, though, is how do we get the balance right so that we optimally combine these three things and do not shirk our own personal responsibility or become overwhelmed by the technology?

Individual Responsibility

The individual responsibility element is perhaps the easiest one to understand. As individuals, we are free

learn more

Education

Health Benefits Conference & Expo

January 22-24, 2018, Clearwater Beach, Florida

Visit www.ifebp.org/hbce for more information.

How to Impact Employee Health

Visit www.ifebp.org/webcasts for more details.

From the Bookstore

Workplace Wellness That Works

Laura Putnam. Wiley. 2015.

Visit www.ifebp.org.books.asp?9058 for more information.

to make choices each day that impact our health. Sometimes those decisions are easy—like taking the stairs over the escalator—and often they are hard, like choosing a lower calorie lunch option over the 1,000-calorie burrito from the local taco shop. Nevertheless, they remain ours to make.

Nature of Risk

The next part of the equation is the health risk, specifically the level or urgency of a risk. When we are young, our long-term health is seldom a concern, mostly because even when choosing less-than-healthy lifestyle habits, our youth protects us against the effects of those decisions. They eventually catch up to us but often only as we age. Conversely, even if we practice a healthy lifestyle, as we age the odds that we experience any number of health issues increase greatly. Significant events like the death of a parent or even a diagnosis can suddenly make us feel very mortal and, as such, make us acutely aware of our health risks.

Technology

And then there is technology, ever present, sometimes helpful, sometimes

seemingly just a time suck. A common promise of advancing technology is that with ever-more data and information, we become ever-more educated and knowledgeable. Yet while technology makes more information available to us, procuring the information you need to make a personal health decision is not always so easy.

Decision Aids

To help individuals make more informed clinical decisions, medical professionals have long relied on a simple tool called the *decision aid*—the brochures and pamphlets at your doctor’s office. Very simply, decision aids help inform us about our available options for a particular disease, condition or medical issue.

They are designed to increase our knowledge about the topic, increase our participation in the decision-making process and, in so doing, have a positive impact on our health. Scientific literature has much to say about how decision aids work and how well they work to impact our health.

A recent study showed that that decision aids do in fact make it more likely that individuals feel more knowl-

edgeable and better informed.² When using a decision aid, individuals “probably have a more active role in decision making and more accurate risk perceptions.” That is great news, although the one caveat here is that even though the study was published in 2017, the studies they reviewed examined rather “simple” decision aids like those from a web page or a video.

Today there is a wide array of technology-based decision aids that use a variety of media to inform individuals and help them make the best decision for them at that point in time. These range from short videos to interactive tools where feedback is provided based on patient responses to questions.

Some might exchange rich personal data between the individual and a health care practitioner but have not been out there long enough for us to study in great depth.

The simple fact is that applying technology to personal health decisions is only an emerging area of study. It will be a few years before we can determine how to leverage their collective power but, for now, the ability to access real-time information from wearable technology has been shown to be helpful, specifically in improving physical activity in the form of daily steps. In one study, physical activity researchers gave participants trackers and either told them to reach a goal of 10,000 steps or just let them wear the device. Everyone increased their daily steps, but the participants with the goal increased their activity more—presumably because they could have instant feedback relative to their target.

While technology can help us gather and communicate untold sums of information, there is a delicate balance between choosing what information can be helpful and what is superfluous. Many wearable physical activity monitors now include the ability to measure heart rate continuously, but the reality is that your heart rate while you are active is really

the key piece of information you need to know. Adding measurements for the other 23 hours and 30 minutes in the day is not a “value add” and can just be a distraction.

Many current medical protocols use technology to help enhance personal health decisions. A simple example is blood glucose monitors that are wirelessly connected to the computing cloud and can transmit an individual’s blood glucose levels to health care practitioners. The flow of data can help practitioners reach out to individuals more quickly when required or simultaneously trigger a message alert that helps the individual act right away. The information and data that is collected and stored can also be used to help the individual (and the physician) to understand how well they are managing their condition. Information can be power, both individually and organizationally.

The available evidence suggests that wearing a physical activity monitor can increase the number of steps individuals take in day, even without any tangible incentive. The falling cost of basic yet sophisticated physical activity monitors can mean employers have an opportunity to provide these devices to their workforce as a benefit that has been shown to help people. If they do, however, they should remain aware of skepticism from individuals. Although it is illegal for employers to access individual data such as the number of daily steps someone takes without that individual’s consent, some individuals will fear repercussions should they not demonstrate a desired level of physical activity. Therefore employers should tread carefully, being certain their intentions are well understood and not interpreted as a means to penalize anyone.

As technology continues to advance, it will help us grow that intersection between it and our own individual responsibility and health risks, thus increasing the opportunities we have to impact our health and lives in a positive manner. It won’t be a silver bullet to solve our health issues, but it can definitely be part of the solution. **▀**

bio



Jonathan Dugas, Ph.D., is director of clinical development at the Vitality Group. He previously was a clinical assistant professor at the University of Illinois at Chicago and holds a Ph.D. degree in exercise physiology from the University of Cape Town.

Endnotes

1. See www.healthwise.org.
2. The Cochrane Library, “Decision aids to help people who are facing health treatment or screening decisions.” Available at www.cochrane.org/CD001431/COMMUN_decision-aids-help-people-who-are-facing-health-treatment-or-screening-decisions.