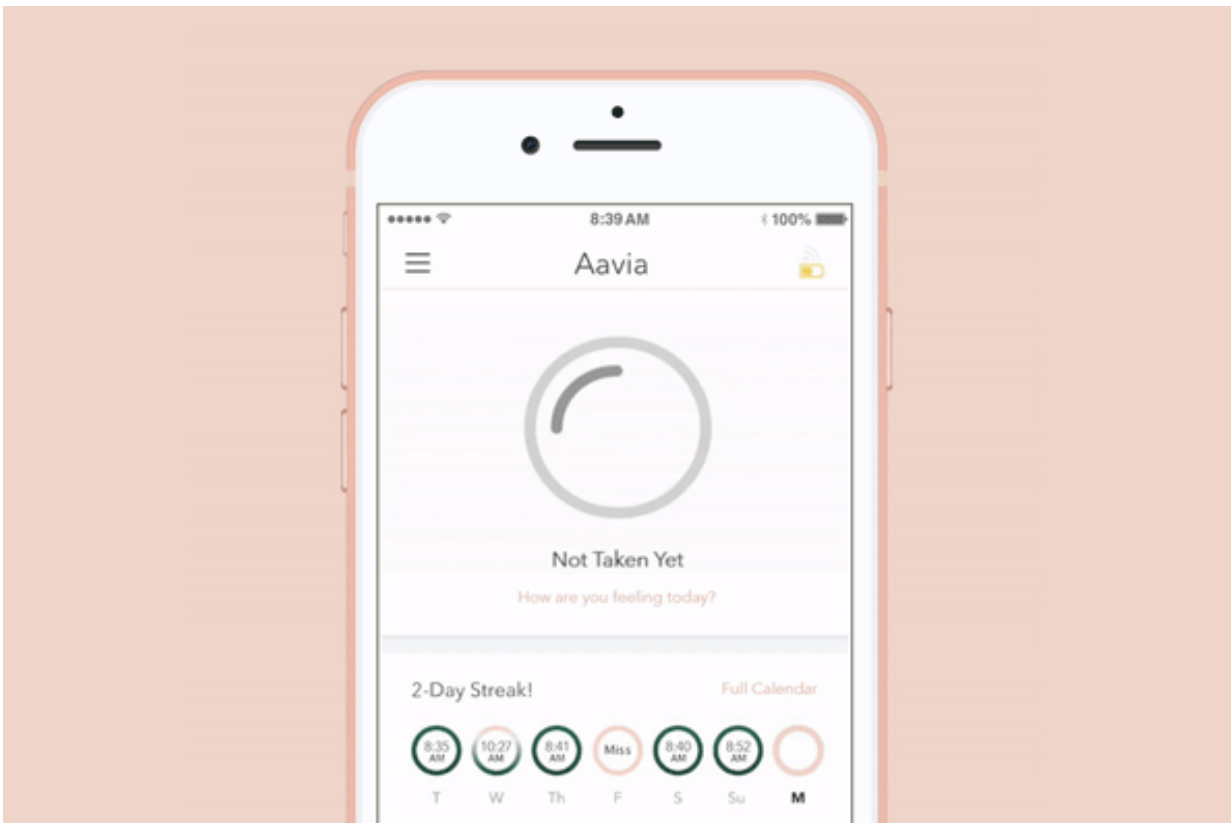


Smart sensor makes it easier for women to manage their birth control pills

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Credit: MIT Sloan School of Management

Did you remember to take your birth control pill?

Whether it's an internal question a woman asks herself, or a gentle

reminder from a significant other, Aavia wants to be the one with the answer.

The MIT Sloan startup this month started rolling out beta versions of its device that carries and senses the status of a blister pack of pills.

"This is 100 percent automatic," said CEO Aagya Mathur, MBA '18. "As soon as you take [the pack] out and you've taken [the pill] and put it back in, [the sensor] knows you've taken it, it records the time you've taken it, and you're set from there."

A solution that works

The intended ease of the Aavia device belies the 15 months of ideation and surveys the team conducted to get to mid-August, when the first batch of devices rolled off the belt in MIT's Product Design Lab.

After joining chief technology officer Alexis Wong and chief performance officer Aya Suzuki, SB '18, in the spring of 2017, Mathur and her co-founders began gathering information about medication regimens.

"We started from scratch," Mathur said. "Let's talk to as many people as possible; doctors, women, men, young, old, whatever it might be. And surprisingly more times than not, the birth control pill [did] keep coming up."

For example, a man in his 60s explained that adhering to a strict schedule did not seem as important for his cholesterol medication as it did for the birth control pill his wife used to take. The man said his first daughter had been the result of not taking the pill on time, Mathur said.

In other cases, the co-founders heard from women who'd had abortions,

and others who reported feeling unshakeable anxiety at work, when they realized they'd forgotten to take their pill that morning.

Once the team decided to focus on the [birth control pill](#), they had to choose whether to approach a solution through hardware or software.

While there are smart caps and vials, Mathur said, no one is addressing the large market for women that also has significant consequences. A [1995 study](#) estimated that use, misuse, and discontinuation of oral contraceptives contributes to more than 1 million unintended births in a year. Of those 1 million unintended births, about 15 percent—or 150,000 births—are the result of missing pills or not following the prescription's instructions.

As for software solutions, Mathur said they do exist, but they weren't solving the problem of medication [adherence](#).

"All the women who we've talked to have tried the phone alarms, they've tried setting it next to their water in the morning, they've tried keeping it with their coffee, having their boyfriends text them, using different apps," Mathur said. "One of them requires you to take a picture of yourself. Nobody wants to take a picture of themselves taking a pill. One of them requires you to go into the app and say 'Yes, I took it, this is what time I took it;' it's more manual. There's a reason why they quit using them and there's a reason why they continue having this anxiety and stress, and it's because they don't have a solution that's working for them."

Accountability

Users set the time they want to take the pill each day, and can customize the app's notification. For example, instead of "Time to take your birth control," a notification might say "Your latte is ready."

If a user takes her pill before the set time, no notification will be sent. If a pill hasn't been taken, a notification will be sent to her phone at the user's scheduled time.

The app will send notifications every 30 minutes until it registers that a pill is gone, but only while the user's phone is in range. That way, Mathur said, women who forget their pill and don't carry their pack with them aren't being reminded all day that they've forgotten to take their pill.

Regardless of when the pill is taken, the app will record the time. Mathur said this can prompt a user to rethink when she wants to take her pill to help with consistency, if she notices a variation in timing.

"This way it takes all the accountability off of you, and it is accountable for you," Mathur said.

Feedback for the future

Aavia's first wave of beta users received their devices in mid-August. They're not releasing numbers yet, but Mathur said the initial group was limited so that there could be one-on-one interactions between customers and the Aavia team.

Mathur said among the updates for the next version will be an automatic time zone adjustment, and a slimmer, redesigned cover.

Future versions will allow women to turn off notifications during their sugar pill week and change the 30-minute notification time. There are also plans for the app to show a calendar to see a full history of pill activity. The current version allows users to see up to a week.

The team also plans on incorporating additional user feedback.

"If you don't listen to the end user, it's not going to be something they a) like or b) something that's actually going to help them," Mathur said. "If you can't fulfill those two things, why are you even doing it?"

Provided by MIT Sloan School of Management

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