MindWay

Using Machine Learning to
Aid the Fight Against Mental Illness

The Idea

With depression being so prevalent worldwide; And that no one-size-fits-all solution exists, we wanted to predict which individuals are at risk of getting depressed.

Using machine learning, we learn the warning signs of depression on social media behavior, and proactively suggest steps to those individuals to take charge of their mental health.

Collecting Baseline Data

We use three main methods to collect, score, and then monitor users' mental health scores over time

The self-report survey score will be used together with social media mood scores collected in the next phase to increase validity of results.

Data collected here will be compared against the data to be collected during the Monitoring phase to detect shifts in mood.

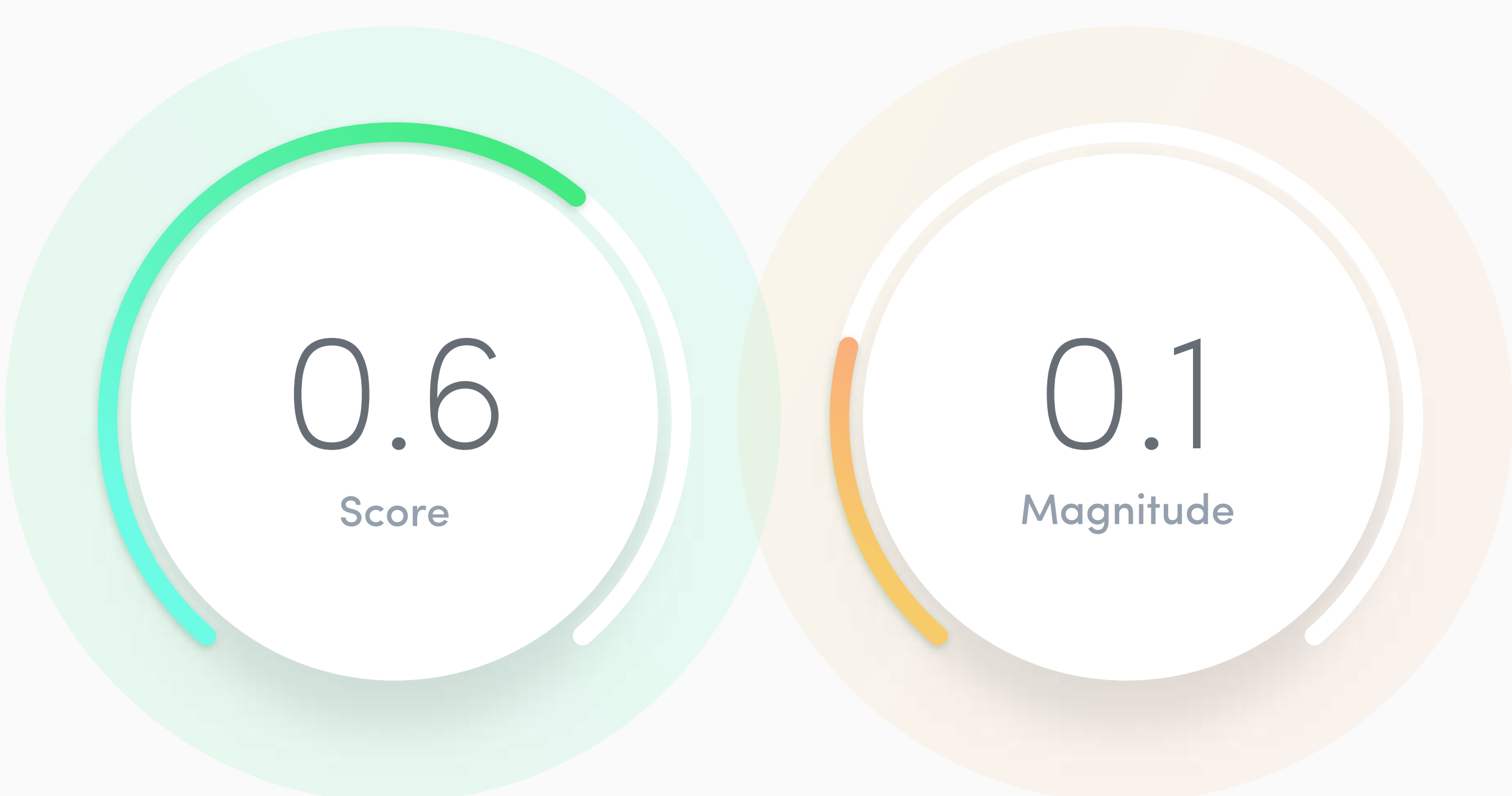
Monitoring

We use three main methods to score, collect, and monitor users' mental health scores

Sentiment Analysis

Using **Google's Cloud Natural Processing machine learning model**, we analyze users general mood based on their social media posts.

The model understands the sentiment of the post and assigns it a sentiment score.



0.2 -0.5

As I sit here and look down at the scars. I look up and scream to the stars. why do I wear a tear soaked shirt. why do I have to go through all this hurt.

-1.0

Score	-1.0 — -0.25	-0.25 — 0.25	0.25 — 1.0

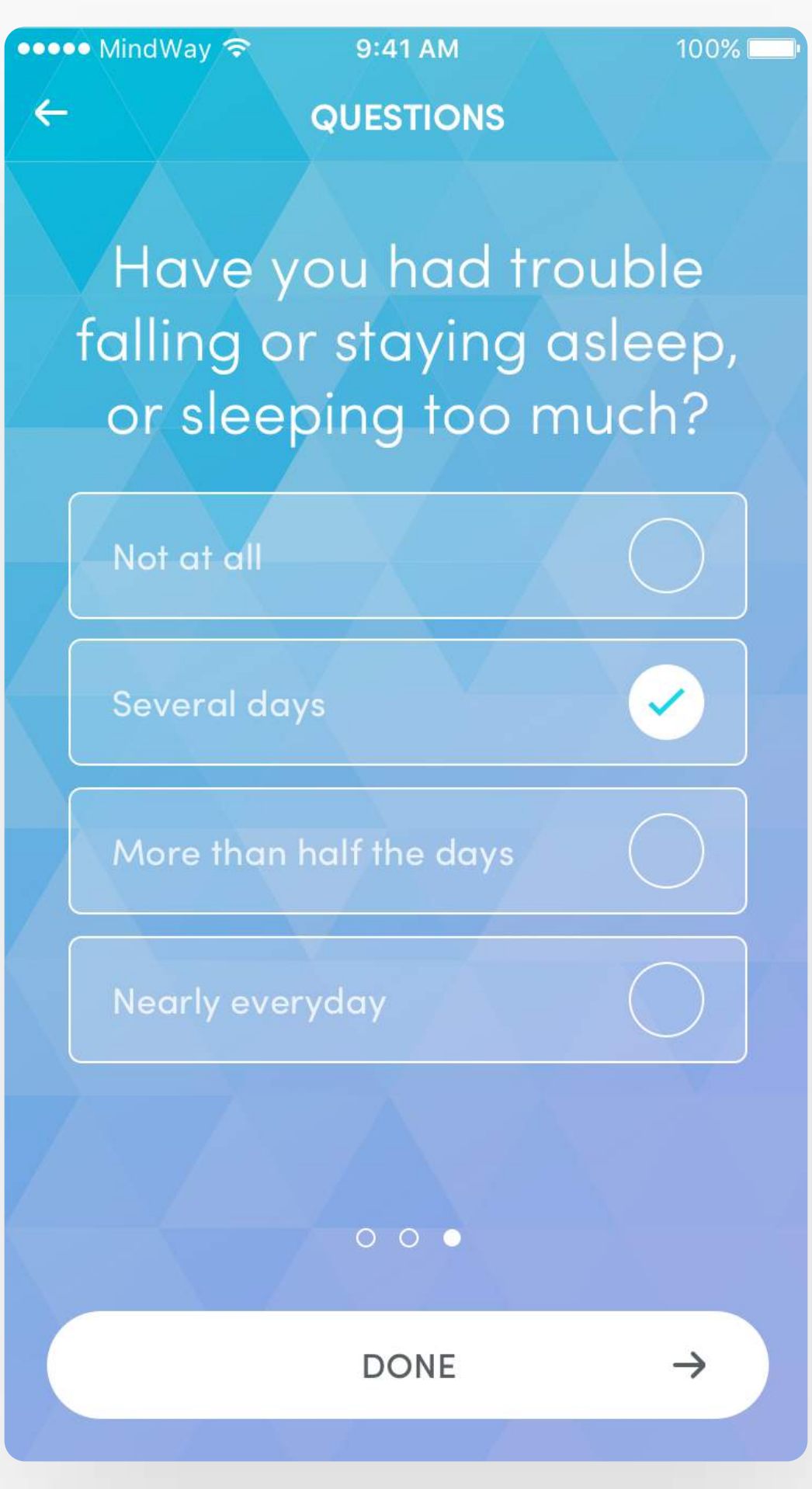
Image Recognition

Using **Google's Cloud Vision API**, we analyze photos shared by the users and derive the emotions expressed in the photo.

Joy • Unikely Sorrow • Very Likely Anger • Very Likely

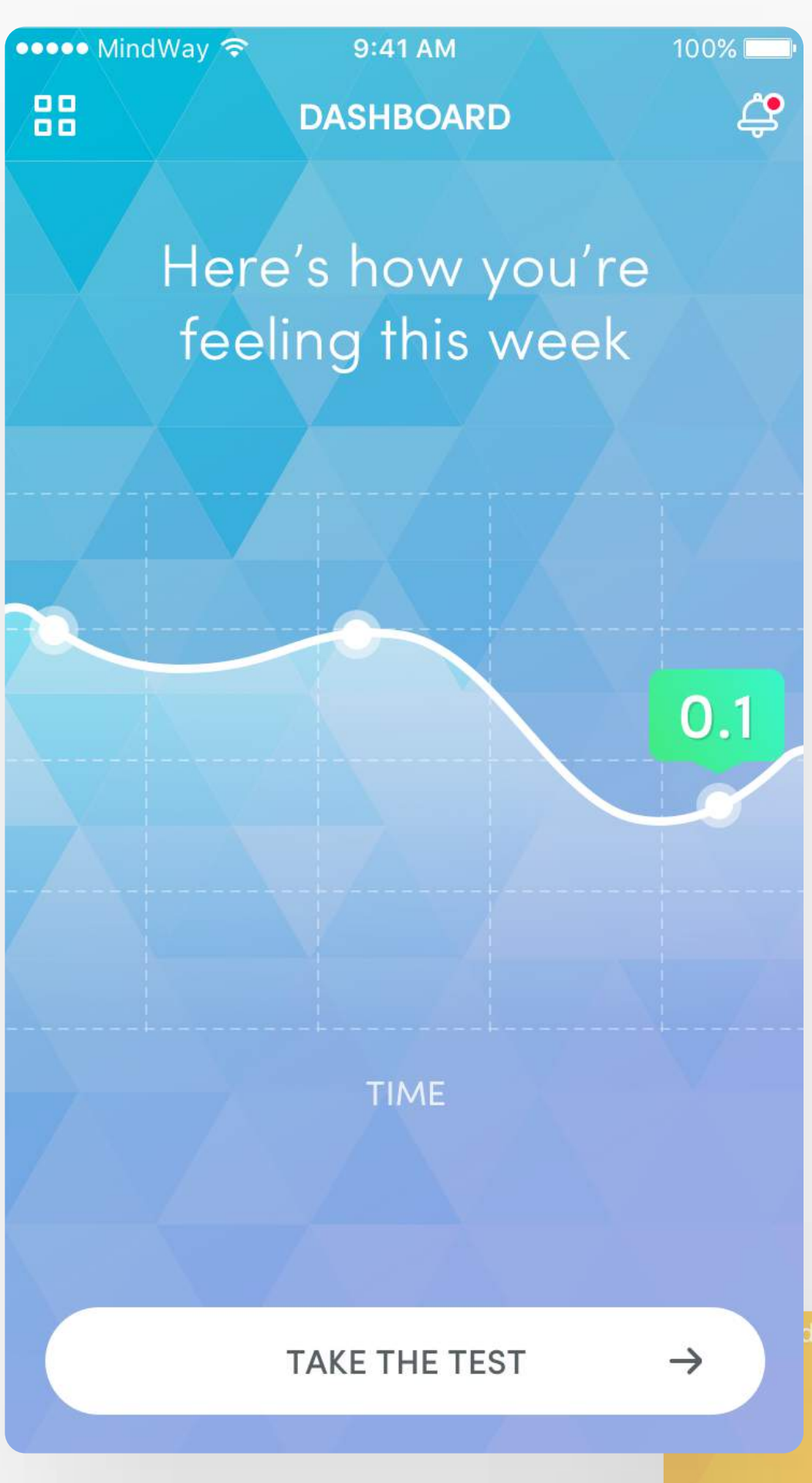
Mood Analysis Surveys

We also continue to have users answer some **self-assessment survey questions** to collect their general mood scores.

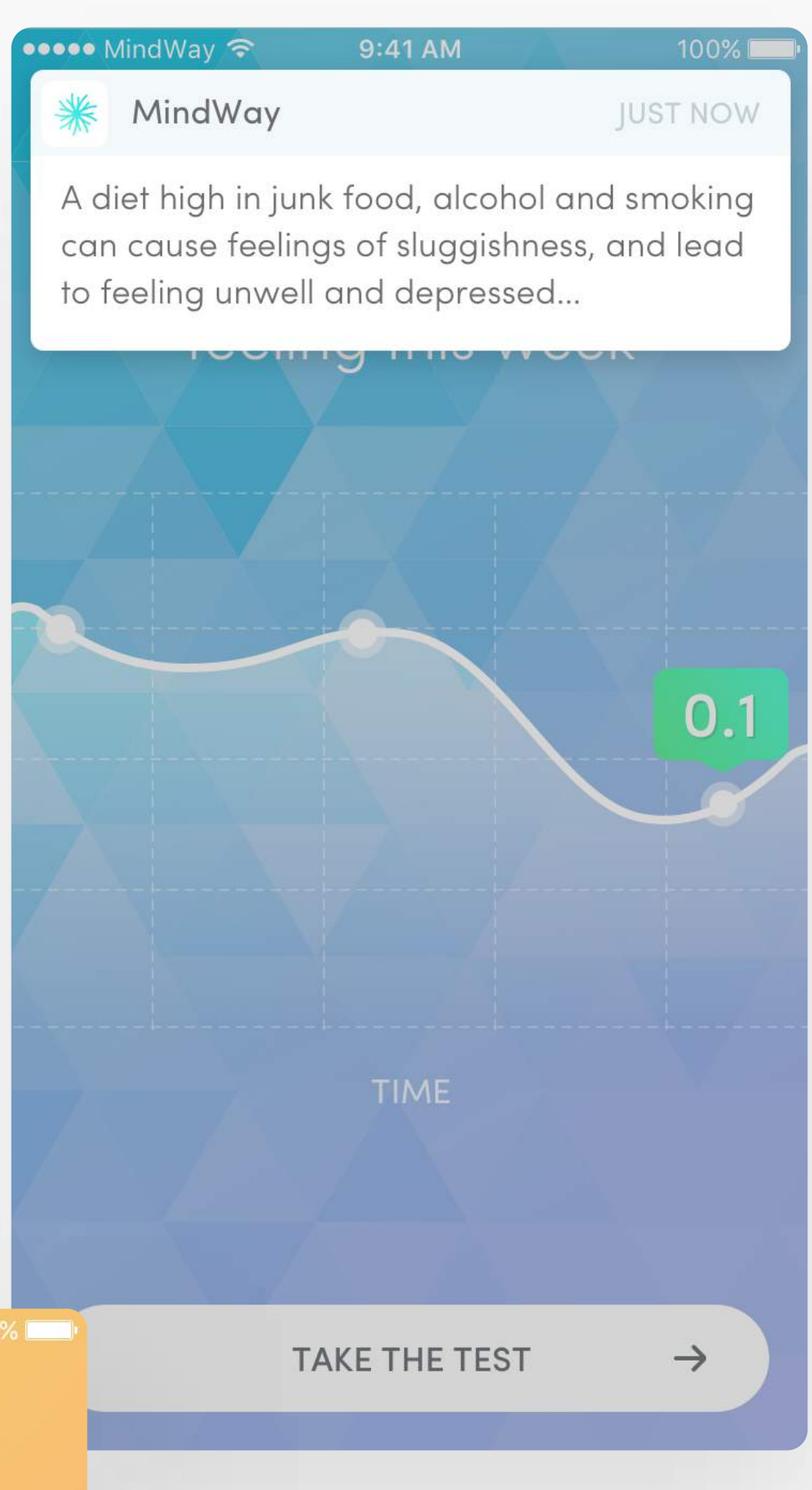


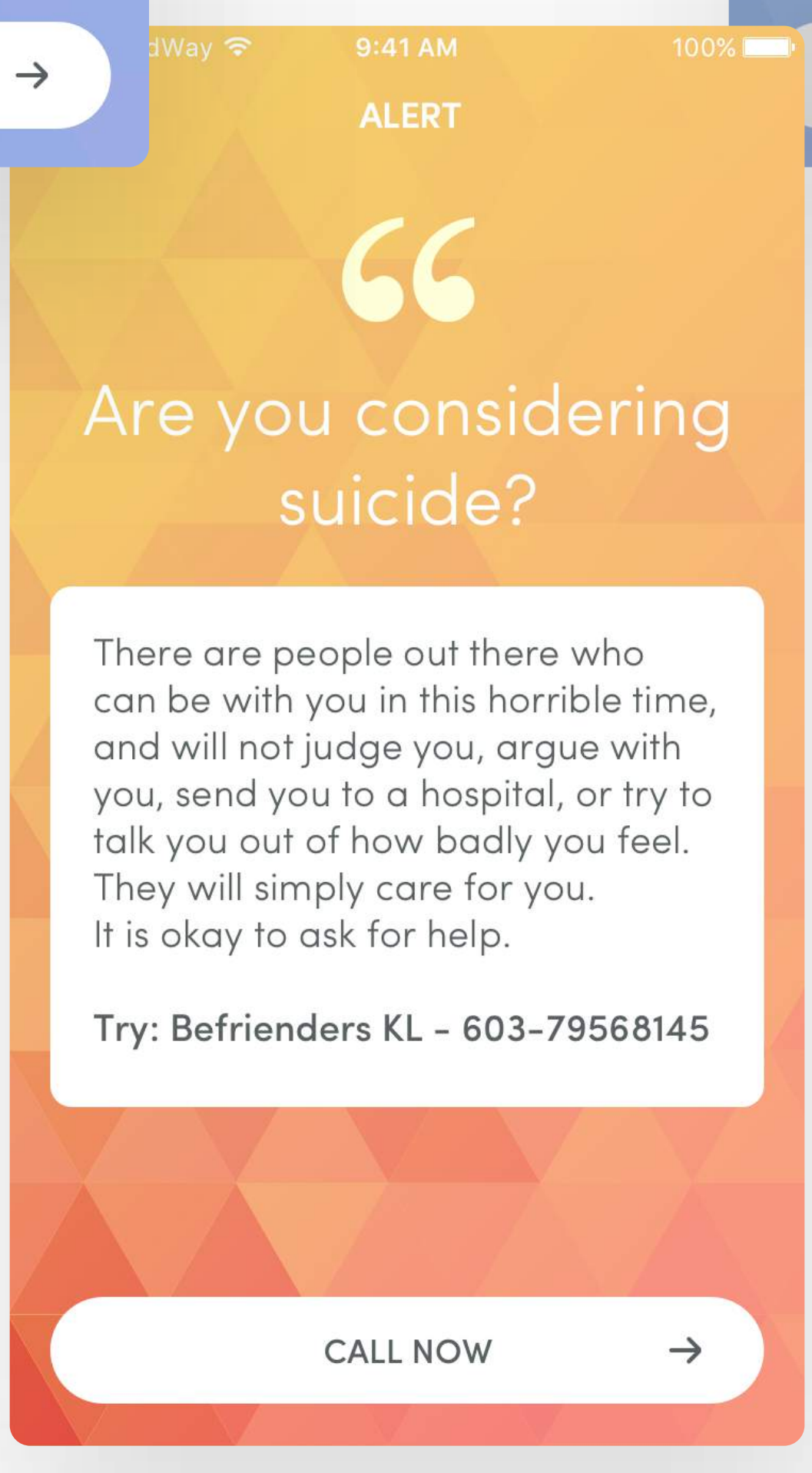
Dashboard and Notifications

The collected **data is displayed visually on the dashboard** for users to gain insight into their mental health.
With the collected data, we compare the scores over time and detect any depressive shifts in the user.

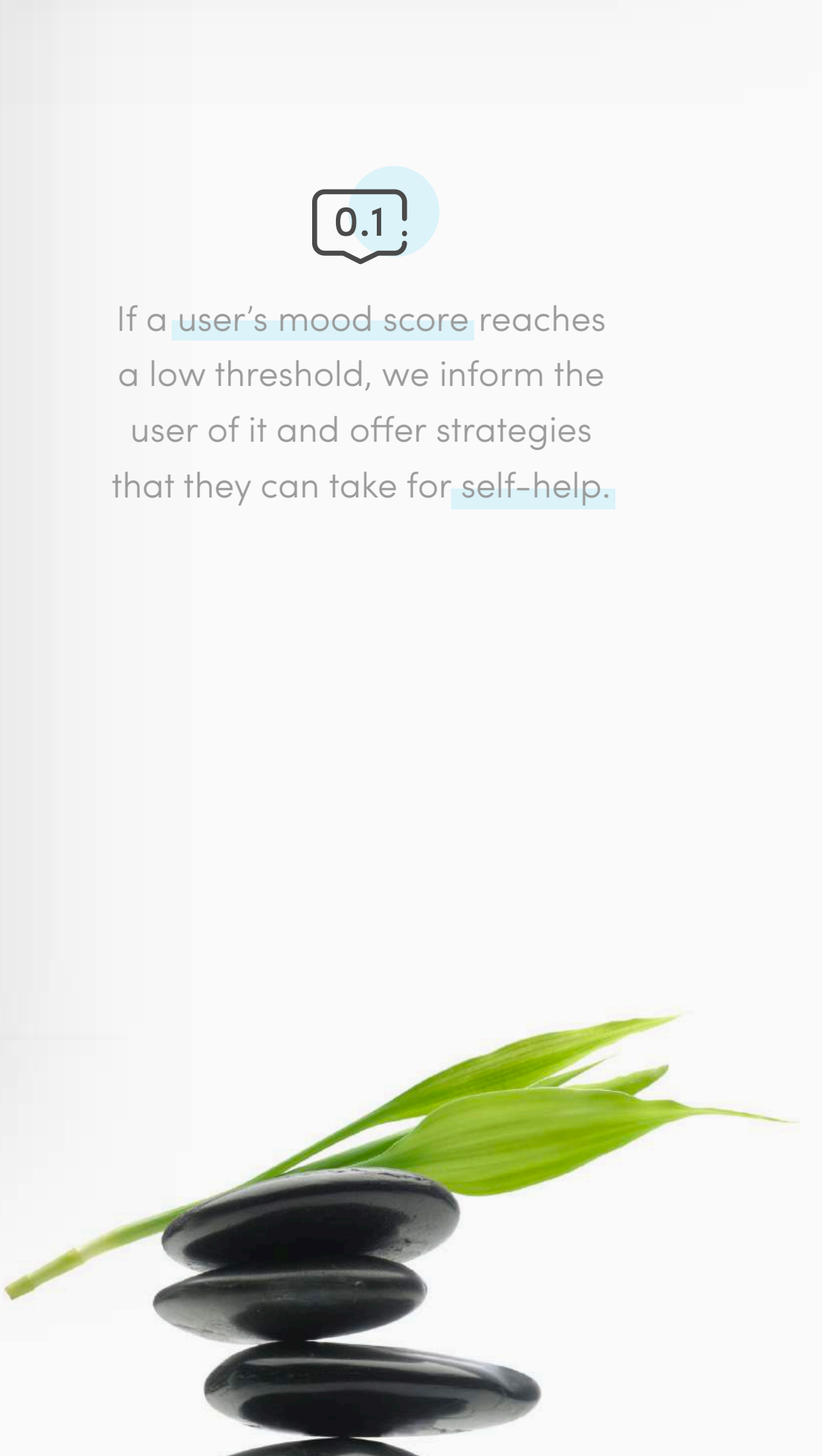


For normal users, words of encouragement and tips for a healthy mental state are shared.





If a user's mood score reaches a low threshold, we inform the user of it and offer strategies that they can take for self-help.



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Conclusion

With the help of Machine Learning technology, our aim is to play a part in the promotion of mental health and specifically, the prevention of depression.