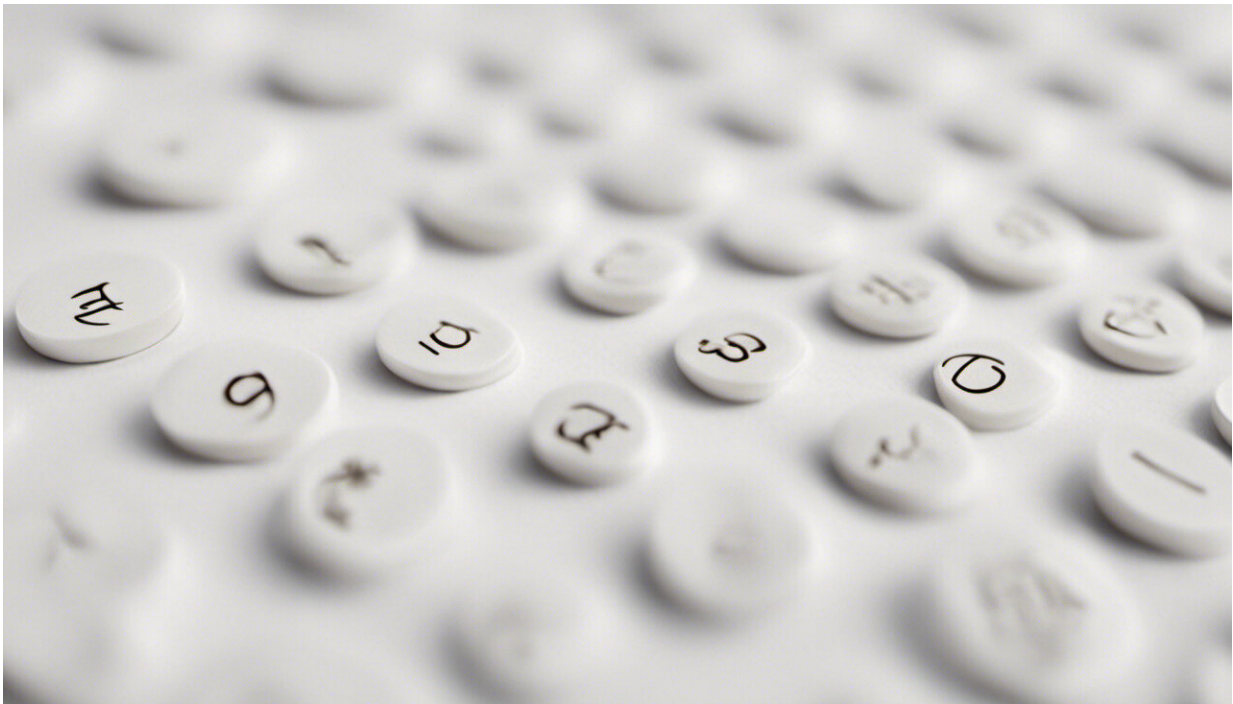


Alphabet's new plan to track 10,000 people could take wearables to the next level

May 4 2017, by Bennett Allan Landman



Credit: AI-generated image ([disclaimer](#))

Verily – the life sciences research arm of Google parent company Alphabet – wants to track the health of 10,000 people.

On April 19, the group announced that it was starting to recruit for Project Baseline, in partnership with Duke and Stanford. Over the

course of four years, Project Baseline will sequence participants' genomes, test their blood, survey them and track biometric data such as heart rate and activity level on a Study Watch – basically, a Fitbit on steroids.

What I find perhaps most interesting is their plan to collect thousands of medical images, which my colleagues and I also are doing in a [big data analysis](#) of childhood brain development.

Ventures like Project Baseline open up new opportunities in health care, both for the researchers working with big data and for consumers who want more sophisticated ways to track their health.

This allows us to start asking questions like: "How should we modify our behavior based on real-time interactions? Is there something relatively painless that anyone can do to alter their risk for particular medical problems? What can make us a healthy society that may be easier or more effective than the current recommendations?"

Project Baseline in context

Ten thousand people is a lot. To put that number into perspective, Project Baseline will follow enough participants to fill First Tennessee Park, Nashville's new minor league baseball stadium.

In the U.S., we define a rare disease as something that strikes about five in 10,000, so several rare diseases will likely be seen in Project Baseline. Hundreds of other participants will likely develop more common illnesses, such as heart disease or diabetes, over the study's four years.

Big data is nothing new for medicine. Project Baseline has been compared with the Framingham Heart Study, a project that tracked 5,209 subjects from 1948 on. Just this year, Stanford University

researchers presented [a paper in Nature](#) that analyzed 129,450 clinical images to detect skin cancer.

Meanwhile, the [U.K. Biobank](#) study is currently following the health of 500,000 adults. Just a day after the Project Baseline announcement, [a study using U.K. Biobank data](#) indicated bicycling to work was associated with a 46 percent lower risk of heart disease.

My team is working with brain scans of up to 10,000 children, to look at how brain growth correlates with disease status, age, phenotype, genetics and other characteristics. As a biomedical engineer, I am focused on building tools that allow neuroscientists and psychiatrists to ask the hard questions and discover others we didn't know we could or should ask. We begin to model and understand differences, and Verily is going to see the same sort of thing.

Researchers need large amounts of data to test many ideas and uncover subtle relationships. The less well-framed an idea is, the more data we need to collect, in order to better understand the connections between genetics, environment and health.

New applications

Where Project Baseline stands to break new ground in medical research that tracks people over time is in its use of wearable devices.

Project Baseline continues a 2014 pilot study of 200 healthy participants that included both a comprehensive health assessment and data collection through wearable devices.

The new study could help advance Google's [wearable devices](#) from general wellness products – which are not regulated by the U.S. Food and Drug Administration (FDA) – to medical devices that capture

specific information, with their safety and benefits proven to the FDA.

That's really exciting because, while everyone loves their Fitbit, we don't know which diseases could be mitigated by using it. We could see Fitbit and similar devices being used the way doctors advise patients to use the [automated blood pressure cuffs](#) at Walgreens: Eat a certain way, exercise a certain amount, take your medication and check the results on your device.

Moreover, with Alphabet/Google's track record of affordable access to data resources (think Google Maps), Project Baseline could be a huge win for smaller companies seeking to build businesses around personal health devices. It also could open up better medical information to those in rural areas or those studying rare diseases.

There are implications as well for radiology, since Project Baseline will also collect medical imaging on its participants. Everybody loves to see an image. However, there is a lot of information in images that we'd like to better automatically pick out. Just as [big data](#) can improve personalized health devices, it can also boost our ability to extract subtle signs of disease in images.

Doing big data right

My team looks at data in anonymous ways, in order to protect the privacy of the patients who donated it. For example, in addition to removing patient names, we are careful to protect dates of visits and other information unique to a patient.

Verily's newest [project](#) could have exciting implications for groups like ours, as the organization promises to provide anonymous data to qualified researchers. It will be critical for Verily [to build trust](#) in the anonymous nature of this data.

Patients generally don't mind being seen at a teaching or research hospital, knowing that doctors will learn from their care, but they absolutely don't want their insurance agents or co-workers to know what treatments they might be receiving. The same goes for real-time health data like the kind that Project Baseline is collecting. Verily must ensure that there is no way to connect the data back to individual subjects, just as we are doing.

In addition, the deep level of these medical records can open unlimited possibilities in computer-guided [health care](#). But, for any such work, it's essential that you are able to check your results. If, for instance, we suspect that a particular brain area develops earlier than another, we can design the model in one data set, then show with another subgroup from the data that, in this population that we studied, our finding still holds true. Project Baseline will provide a wealth of data to develop new hypotheses and to replicate results from other studies.

This article was originally published on [The Conversation](#). Read the [original article](#).

Provided by The Conversation

Citation: Alphabet's new plan to track 10,000 people could take wearables to the next level (2017, May 4) retrieved 6 May 2024 from <https://techxplore.com/news/2017-05-alphabet-track-people-wearables.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.