

Project Baseline seeks participants for study of biomedical basis of health

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Leslie Purchase is among the first to enroll in Stanford's portion of the Project Baseline study. The watch on her wrist helps keep track of her activity. Credit: Steve Fisch

The large-scale study of what causes health and disease is enrolling

participants at Stanford. All are welcome to apply. In particular, the project is seeking ethnic minorities and individuals with an increased risk of disease.

Leslie Purchase describes herself as kind of a data devotee. So last spring, when she heard about the [Project Baseline](#) study—one of the largest, most comprehensive efforts to understand the basic underpinnings of health and disease—she jumped at the chance to participate.

"I'm so excited to be part of this effort to understand more about what makes the human body work," said Purchase, 41, a former physician and mother of three who volunteers with the nonprofit Rotaplast International. "It's an opportunity to help inform health and wellness on a scale that's never before been attempted, and I think it's a pretty easy way to do something good for the world."

The study is an ambitious endeavor, with a potentially transformative payoff. Launched in April after years of designing and planning by Verily, an Alphabet company, in partnership with Stanford Medicine and the Duke University School of Medicine, it aims to understand the molecular basis of health by repeatedly collecting vast amounts of biomedical data from as many as 10,000 participants over the course of at least four years. Stanford Medicine recently enrolled its 100th participant in the study.

Observing how a person's health data changes over time, regardless of whether they remain healthy or fall ill, could provide the first comprehensive atlas of what it means to be "well" at all stages of life, or help researchers learn the subtle signals given off by the body at the earliest stages of cancer, heart disease or other disorders.

The scope of the effort, and its potential to eventually change how

medicine is practiced by enabling physicians to proactively monitor a person's health and provide preemptive medical care—a concept known as precision health—has captured the imagination of researchers and participants alike.

Purchase is a particularly valuable participant in the longitudinal study; as a breast cancer survivor and a woman, her biological data could provide important information for researchers seeking to understand the murky border between health and disease.

The study is the first initiative of Project Baseline, which is a broader effort to establish a well-defined baseline of human health as well as a rich data platform that may be used to better understand the transition from health to disease. Recruitment at Stanford began in June and is ongoing.

Wide range of participants needed

"It's important that we enroll a broad spectrum of participants, from those who are healthy to those who have a higher-than-normal risk for cancer or cardiovascular disease," said professor and chair of radiology Sanjiv Sam Gambhir, MD, PhD, the study's principal investigator at Stanford. "We also need people of all ages and ethnic backgrounds. The reason that this is so important is that we want to capture the transition from health to illness at a molecular level. Enrolling people at higher risk can increase the probability that we will observe [study participants](#) transitioning to an ill state during the course of the study. And this transition may look different in different ethnic groups or genders."

Like Purchase, participant Camilo Barcenas, 39, is eager to contribute his health data to the landmark study. "This is a unique time in history," said Barcenas, a [health care technology](#) entrepreneur who identifies as Hispanic and has two young children. "We have the capability to collect

lots of information about individuals and to analyze that data in a quantitative way to learn even more about ourselves as a species and to use that knowledge for the betterment of humanity."

Participation in the study involves a two-day visit to Stanford, during which participants' health history and vital signs are assessed and biospecimens such as saliva and blood are collected. Clinical tests such as echocardiograms, CT scans and chest X-rays are conducted, and participants are given an investigational study watch and a sleep sensor to measure their activity levels and sleep patterns. After the initial visit, participants respond to regular surveys via a smartphone, computer or call center, and return to Stanford at least once a year for further data collection.

All Project Baseline study data will be hosted on the Google Cloud Platform, with great consideration for data safety, privacy and security. In the future, de-identified data will be made available to qualified researchers for exploratory analysis such as characterizing the variation of the participants and identifying biomarkers of disease-related transitions.

"This study is highly unique in the depth of information it gathers about individuals over time," said Gambhir, who is also the director of the Canary Center for Cancer Early Detection at Stanford. "We want to encourage anyone interested—particularly underrepresented minorities, the elderly and those at high risk for cancer or cardiovascular disease—to visit the website to learn more about the study and apply to participate."

"Once you truly understand what the study is attempting to accomplish," said Purchase, "it almost feels like a moral obligation to participate. My youngest daughter is a brain cancer survivor and a huge motivating factor for me. Between my breast cancer and her brain cancer, we are

desperate to move medical knowledge forward."

Provided by Stanford University Medical Center

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