

# PASSIVE PRO

Over the last few years, the use of smartphones has grown exponentially with over 1 billion users worldwide. When powered and receiving a signal, smartphones have the capability to send and receive various forms of data, all without the push of a button—this is called passive data. Ginger.io, a company collaborating with the C3N Project and ImproveCareNow, has mastered ways to collect this passive data by accessing smartphones' data and mobile sensors, like: user's call information; SMS (text) information; locations; and even movement. The innovation—called Passive PRO—is being tested with ImproveCareNow patients with Crohn's disease and ulcerative colitis.

## The Study

### Aim

Patient-reported outcomes (PRO) are important measures of the effectiveness of healthcare interventions. Despite the importance of PROs, their use in clinical practice—especially in ongoing monitoring—remains limited, in part because of logistical issues and patient burden.

The study will recruit up to 150 adolescents and young adults with inflammatory bowel disease (IBD) who have a smartphone. A free mobile sensing application, called Ginger.io, will be installed to monitor behavioral patterns through GPS, accelerometer, and text and voice call logs. The application will also launch periodic health status and health-related quality-of-life (QOL) surveys for the patient user to complete.

Data analysis will link behavioral patterns to survey responses, and test our hypothesis that behavioral patterns assessed via mobile sensing are related to health status and are sensitive and specific indicators of symptoms in adolescents with IBD. The existence of a passive PRO would make ongoing monitoring of treatment effectiveness much more feasible, facilitating comparative effectiveness and improvement research.

## CONTACT

### Project Staff

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### Project Lead

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## Timeline

### Up to 2 Years Enrollment Period, Per Participant

During the study, participants will receive short daily surveys directly on their smartphones while the mobile sensing program runs in the background. After the participants complete the study an exit interview to share feedback on their experiences with the study and application.

## Confidentiality

The user's privacy will be respected and only aggregated and anonymous data points (e.g. number of calls per day) are collected and stored in a secure database. The application does not access any information that will identify the users—we respect the privacy of the users' communication and activity. Users control their data and have the ability to stop sharing and exit the study at any time.

## Requirements to Participate

- You are between the ages of 13 to 25 years
- You have a diagnosis of Crohn's disease or ulcerative colitis
- You have reported symptoms in the past 4 weeks
- You have an iPhone (iOS) or Android smartphone with an active data plan