Help Enhance Population Health with Data from Fitbit Devices

Over the years, Fitbit Enterprise has helped population health managers address critical challenges with Fitbit devices that build excitement, drive engagement, and spur healthy behavior change.

But creating effective population-level programs requires collecting the right data and putting it into the right context.

Google Fitbit

Personalized insights at scale

We give individuals the information they need to make healthy behavior changes while also giving researchers and population health managers the ability to understand, and act on, real-world health information with Fitbit's Web API.

Our Web API is designed to give developers the ability to quickly and easily leverage participants' user data — all accessible in one simple tool. This can help streamline the end-to-end process for population health teams and users alike, helping to increase participation rates among users and improve the quality of data collected.

High quality data that's easy to access and understand is **actionable data** – giving your team the power to build programs, outreach, and initiatives that contribute to the overall health and wellbeing of your population.

Here are the data points you can access through our Web API:

- ✔ Activity
- ✔ Active Zone Minutes
- ✔ Body & Weight
- ✔ Breathing Rate
- ✔ Cardio Fitness Score

- ✔ Devices
- ✔ Electrocardiogram (ECG)
- ✔ Food Logging
- ✔ Heart Rate
- ✔ Heart Rate Variability

- ✔ Irregular Rhythm Notification (IRN)
- ✔ Oxygen saturation (SpO2)
- ✔ Sleep
- ✔ Temperature

How do these metrics help your population build healthier habits at scale?

Let's take a look at how each of these data points can help you better understand the health of your population, evaluate the impact of an intervention, monitor progress, enhance chronic disease management programs, and much more.

Activity

Track and understand how participants move each day and over a specific period of time. You can use the Fitbit Web API to access data on daily activity duration, calories burned, types of exercise performed, exercise intensity, average heart rate, distance traveled, floors climbed, and so much more. Granular data is available so you can measure exactly how users get active, how activity impacts their bodies, and how their habits change.

Active Zone Minutes (AZM)

Active Zone Minutes (AZMs) are a measure of time spent in elevated heart rate zones, including Fat Burn, Cardio, and Peak zones. For each minute spent in the Fat Burn Zone, a user will earn 1 AZM, and for each minute spent in the Cardio or Peak Zone, a user will earn 2 AZMs. This will help you to determine not only if participants are active, but how active they are based on intensity of their activity every day.

Body & Weight

This data allows for a greater understanding of how bodies change over time. Users can set a start date, starting weight, and set of goals for their body and weight. Then, the Fitbit platform can return calculated BMI and body fat percentages, and measure how this changes as they evolve their habits and lifestyle.

Breathing Rate

This measurement captures a user's average breaths per minute during sleep. Only sleep records greater than three hours are considered. Factors that can impact breathing rate include age, gender, weight, lung and heart conditions, anxiety, and fever.

Cardio Fitness Score

Fitbit devices estimate a users' VO2 max and return the optimal rate at which the user's heart, lungs, and muscles can effectively use oxygen during exercise. Cardio Fitness Score is determined by resting heart rate, age, gender, weight, and other personal information for each user.

Devices

The Fitbit Web API allows you to access information about which devices participants are using, when they last synced their device with the app, and leverage alarms and reminders. See if users have enabled alarms and control a number of settings, including: how often alarms go off, maximum number of snoozes, snooze time length, vibration pattern, and more.

Electrocardiogram (ECG)

The Fitbit ECG App, only available on some devices, is used to create and record an ECG when a user takes a 30-second reading, and can analyze the reading for signs of AFib.* Only a doctor can diagnose AFib, but the ECG app can let a user know if they have signs of the condition.

Food Logging

Nutritional information including calories, carbs, fat, fiber, protein, and sodium are generated when users log their food consumption. More nuanced metrics can also be tracked: what type of meal the user logged, how many servings, how it fits with the food plan or goals they're working towards, the level of difficulty of the food plan they selected, and estimated completion date of that plan. Data on water consumption goals and intake can also be accessed.

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Heart Rate

View user data on heart rates, with either custom or non-custom heart rate ranges, like Fat Burn, Cardio, and Peak ranges (as defined here). See how much time is spent in these ranges, calories burned while in ranges, maximum and minimum heart rates, and resting heart rate.

Heart Rate Variability

We use a common formula called RMSDD (Root mean square of the successive differences) to determine HRV from users' heart rate data. The HRV provides the RMSDD between heart beats during sleep, measuring variability in the user's heart rate in milliseconds.

Irregular Rhythm Notification (IRN)

This feature passively checks for irregularities based on data from a user's PPG pulse rate. An irregular heart rhythm may be an indicator of atrial fibrillation (AFib).**

Oxygen Saturation (SpO2)

Oxygen saturation (SpO2) is a measurement of how much oxygen blood is carrying as a percentage of the maximum it could carry (high and low scores can indicate a medical issue). Fitbit devices have red and infrared sensors that can estimate SpO2 during sleep. Only sleep records greater than three hours are considered here as well. At this time, Fitbit devices do not measure SpO2 levels <80%.

Sleep

Fitbit devices collect information about each user's sleep, either automatically as they sleep or through manually added sleep logs. The Fitbit Web API can return data on the source of sleep logs, as well as sleep quality, quantity, and goal information. How long users sleep, how much time they spend in each stage of sleep, what their sleep goals are, and how well a user progresses towards them are just a few of the data points that can be tracked.

Temperature

Our temperature measurement returns a user's core and skin temperature. Note that while skin temperature is recorded by the Fitbit device automatically, core temperature must be logged manually in the Fitbit app by the user.

Taken together, these data points open up a number of possibilities for population health managers and our clinical partners. By gaining insights into daily health metrics and trends over time – and putting them into context against normal ranges – you can develop guidance and initiatives that help your user base better understand and improve health and wellbeing. For more information on our APIs, check out these additional resources:

- Our Web API Dictionary provides information about all available Fitbit endpoints and corresponding device compatibility.

- Developer reference documentation is available in our Web API Reference.

Interested in using Fitbit devices for your population?

Contact Us Now

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