# Crowdsourcing the data of a baby's typical day

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Credit: Yoshihide Nomura (CC BY-ND 2.0)

For many new parents, trying to figure out what a baby needs can feel like taking care of a tiny alien. It doesn't speak your language and yet you have to figure out what it needs to stay alive. And while there is no shortage of advice about how to manage your child's eating and sleeping patterns, there hasn't been much new research in this area to inform parents and pediatricians. So how do you know if you're getting it right?

This is the gap researchers at New York University are bridging in the Baby Sleep Study, which aims to create a large database of eating and sleeping patterns in babies from across the world. In particular, the researchers note that developmental disorders, such as autism spectrum disorders, are often associated with disrupted sleep or digestion. By tracking these behaviors starting in infancy, the researchers hope to

pinpoint just how early these patterns begin to emerge.

The researchers have turned to citizen science to collect the large amount of data necessary to accomplish their two primary goals. "There is no way to do this without participation by a large number of parents who are willing to volunteer some time and energy to make it happen," says the project's lead scientist David Heeger.

The research team has partnered with the [Baby Connect App](link), which parents and other caretakers download to track their baby's sleep, feeding, and diaper change information. The app shares this data with the research team that gets tabulated into their growing database of infant sleep and feeding patterns. To join the project, participants purchase the Baby Connect App, which is available for $4.99 on both iPhone and Android platforms, agree to log their baby's daily eating and sleep patterns, and provide consent to participate in the study.

The project has already collected information from approximately 800 babies and the team expects their numbers to grow. Although a conventional approach to this type of study would yield higher-quality data, it would also limit the amount of data the team would be able to collect. Traditionally, researchers have done sleep and eating studies in a controlled setting where they could carefully monitor infant behavior at all times overnight. This consistent monitoring by experts results in high quality data but is also costly and can only accommodate a couple dozen infants.

The Baby Sleep Study method, Heeger notes, is at the opposite end of the spectrum in terms of the approach. "We know and expect that the data that we're getting are not going to be completely accurate," he says. "There's going to be lots of information that's missing because parents and caregivers aren't necessarily going to log every single event." Despite this, their results to date align with existing studies, which validates their

[data collection method](link) and suggests the team is on the right track.

In addition to creating a database of infant development benchmarks and identifying early signs of [developmental disorders](link), the study also emphasizes the importance of sharing data with parents and other participants. To this end, the study publishes a newsletter sharing data as it becomes available. One such newsletter shared the study's initial results, which detail how sleep, eating, and digestion change with age. Participants might be surprised to learn, for example, that infants begin to show a typical schedule for their day at 6 months old.

To keep up with the study or participate, you can sign up for their newsletter and check out their SciStarter [project page](link) and [website](link) for more information.

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