Conversational Turns

What are Conversational Turns?

Conversational Turns are back and forth interactions between the key child who is wearing the LENA device and nearby adults.

If a child speaks and an adult responds, or vice versa, that's one conversational turn.

What is the Conversational Turns Count?

The Conversational Turns Count (CTC) on an individual child's report is the estimated total number of turns in which the child participated on that LENA Day.

How are turns calculated?

LENA counts a conversational turn when a key child vocalization and an adult word are separated by fewer than 5 seconds, with no other human speakers in between.

- Either party may initiate the turn. The child vocalization can be followed by adult words, or vice versa.
- Turns are counted in pairs only. Child-Adult get a turn count of 1 (as would Adult-Child). Child-Adult-Child also receives a count of 1, but Child-Adult-Child-Adult counts as 2 turns.
- Overlapping speech segments, coughs, cries, and other vegetative and fixed signals do not contribute to the Conversational Turns estimate.

Why is the sum of the hourly counts sometimes different than the daily count?

The hourly counts represent the exact number of turns counted in that hour. The daily counts are statistical projections that allow LENA to compare any LENA Day that is at least 9.5 hours in duration against our normative set, in which all recordings were 12 hours long. For more information, see the Information for Researchers chapter.

What is Conversational Turns Percentile?

The Conversational Turns Percentile (PCTL) shows how the child's experience on that day compares with an age-matched normative sample. Average CTC is represented by the 50th percentile.

Percentiles are available at the daily level for recordings of at least 9.5 hours in duration. (ExceptionL Percentiles are not available for LENA Grow recordings of any length, as the environment is too different from the mostly home-based recordings collected for norms development.)

For details on the development of LENA norms, see:

Gilkerson, J., Richards, J. A., Warren, S. F., Montgomery, J. K., Greenwood, C. R., Oller, D. K., & Hansen, J. H. (2017). Mapping the early language environment using all-day recordings and automated analysis. American Journal of Speech-Language Pathology, 26(2), 248-265. doi: 10.1044/2016_AJSLP-15-0169

Where to find Conversational Turns data

In the individual LENA report, the total CTC for each LENA Day is displayed on the corresponding daily bar. The hourly bars show the CTC from each hour within the recording.

The CTC is also displayed in the LENA recording data exports at the full recording, hourly, and 5-minute level.

Is the Conversational Turns Count accurate for languages other than English?

Conversational turns are based on the timing of detected child vocalizations and adult words, and so the count is not affected by the particular language being spoken.