

Variables

The epoch level labels can be used to create additional datasets. In line with the Core Measures: Sleep Measurement System, a useful dataset for creation contains the variables listed in this system. These variables include start times, end times, and durations of the periods outlined in the system (e.g., primary sleep period, primary in bed period, time attempting to sleep, etc.).

The data can continue to be presented in long format. One reason for this formatting choice is some variables could have multiple records in a given study day (such as rest periods, wake events, and nap events). A long format dataset can handle multiple records of this nature.

The start and end times may be displayed in multiple ways, and could include the date and time in hours, minutes, and seconds.

| USUBJID | DAY | Date | Variable | Start Time | End Time | Duration |
|---------|-----|----------|--------------------------|------------|----------|----------|
| 1 | 1 | 20240124 | Primary_In_Bed | 20:15 | 7:05 | 650 |
| 1 | 1 | 20240124 | Time_Attempting_to_Sleep | 20:20 | 7:00 | 640 |
| 1 | 1 | 20240124 | Primary_Sleep_Period | 20:35 | 7:00 | 625 |
| 1 | 1 | 20240124 | Wake_Event | 21:15 | 21:35 | 20 |
| 1 | 2 | 20240125 | Rest_Period | 7:50 | 8:05 | 15 |
| 1 | 2 | 20240125 | Nap_Event | 7:55 | 8:05 | 10 |

Here, duration is shown in minutes. It is likely that duration will be held in the dataset in seconds, but displayed in minutes or other interpretable values in the analysis output.

Core Measures

A final dataset can build on the epoch level and the variable level dataset to define the Core Digital Measures of Sleep.

A unit column can be added to describe the units used, or units can be defined in a specification document.

| USUBJID | AVISITN | Date | Core Measure | Value | Unit |
|---------|---------|----------|-------------------------------------|--------|-------------|
| 1 | 1 | 20240124 | Total Napping Time | | 0 minutes |
| 1 | 1 | 20240124 | Total Sleep Time | | 605 minutes |
| 1 | 1 | 20240124 | Initial Sleep Onset Latency | | 15 minutes |
| 1 | 1 | 20240124 | Wake After Sleep Onset | | 20 minutes |
| 1 | 1 | 20240124 | Number of Wake Events in the Primar | | 1 count |
| 1 | 1 | 20240124 | Sleep Efficiency | 94.50% | percent |
| 1 | 2 | 20240125 | Total Napping Time | | 10 minutes |

As above, minutes are presented here for illustrative purposes, but a finer resolution (seconds) will likely be held in the dataset, using minutes for the presentation of results.

