

Q. Merry is planning a longitudinal study to investigate whether people's total REM sleep changes over their lifespan. She wants to know if the total time spent in REM sleep changes from childhood to old age.

Design a longitudinal study to help Merry make her investigation.

You must *not* refer to sampling or ethics in your answer

Merry will conduct her study in a laboratory. Merry will make provisions for EEG recording of participants' sleep stages in this laboratory. Participants will be required to come to the laboratory at their usual bedtime and sleep as they regularly do. Merry will record their REM sleep duration as observed on the EEG machine as they sleep. Merry will total up all the minutes that participants spend in REM sleep stages throughout their sleep session. Merry will begin testing the participants when they are 3 years of age and will continue to assess them until they are 75 years of age. Every five years upto age 18, participants will be required to come for assessment to the laboratory, then onwards they will be tested every 10 years.

Each time participants come to the laboratory for assessment, they will have to refrain from consuming alcohol or coffee. This will be done to prevent their REM sleep schedule from being disrupted by the consumption of any type of depressant or stimulant. This increases the validity of the plan. Participants will also have to report always just a little before their bedtime, eat normally as they do everyday and sleep in a quiet and dark room of the laboratory - the exact same room with the same arrangement of beds and EEG equipment everytime. In this way, the procedure and sleeping conditions will be standardised by Merry such that the reliability of the plan is increased.

For recontacting the participants, Merry could send them e-mails annually. In these e-mails, she will remind them of when they have to come for the study next and also include details about why their participation is important and thank them for contributing towards the progress of the study. In addition, she will also personally call them over the telephone a week before and a day before their assessment is scheduled to remind them to come for the study and to thank them personally for their participation.

Merry is collecting quantitative data by calculating the minutes of sleep spent in REM sleep by the participants. She will note the trend of time spent in REM sleep with age - whether the total duration in terms of minutes in the stage increase or decrease with age to come to a conclusion for her investigation.



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