

Marin Academy
Science Department
1600 Mission Ave, San Rafael, CA 94901

INFORMED CONSENT FOR NON-MEDICAL RESEARCH

The effects of circadian disruption on physical activity and academic performance due to online learning across time zones

You are invited to participate in a research study conducted by **Sasha Mishkin with the supervision of Ms. Stori Oates** (Marin Academy) and **Dr. Phyllis Zee** (Northwestern University), because you are **a university student currently learning online and across time zones**. Your participation is voluntary. You should read the information below, and ask questions about anything you do not understand, before deciding whether to participate. Please take as much time as you need to read the consent form. You may also decide to discuss participation with your family or friends. You may download this form for personal reference.

PURPOSE OF THE STUDY

Many university students are currently taking classes online due to the COVID-19 pandemic. If a student lives in a different time zone from their college or university, they may have to take classes at times that do not align with their body's internal sleep/wake schedule, which causes a situation similar (but not identical) to jet lag. I wish to investigate if this phenomenon, called "circadian disruption", has any negative effects on students' physical energy throughout the day and/or on their academic performance.

STUDY PROCEDURES

This experiment will last until the end of your college or university's grading period throughout winter 2021. This date will vary depending on the college or university that you attend, but should occur around the end of winter.

- If your college or university has a different grading schedule, but you still wish to participate, please share this information with the investigator (smishkin@ma.org) so that we can negotiate a convenient time at which to end your participation.

If you volunteer to participate in this study, you will be asked to:

- Fill out an initial questionnaire, a daily survey, a weekly survey, and a final survey. **You will never face any repercussions from giving any particular answer, or from**

withholding any information on any of the questionnaires and surveys. You will not face any adverse consequences if you forget to take a daily or weekly survey or make a mistake in uploading your physical activity data. No data collected during the first week of the experiment will be analyzed, to ensure that you will get a chance to practice and troubleshoot.

- The **Initial Questionnaire** is intended to gather relevant demographic data and lifestyle information to give context to your data.

The first section of the Initial Questionnaire intends to screen participants for eligibility. If you answer a question from that section in such a way that does not correspond with the eligibility criteria, you will be sent to a disqualification page. If you are eligible for the study, the Initial Questionnaire will then ask you to provide:

- Your email address
- Demographic information, i.e. your ethnicity, sex, gender, and height and weight
- Your time zone, and the time zone in which your college or university is located
- How many other people live in your place of residence
- The times, durations, and workload of your current classes
- Information about your sleep schedule and chronotype
- Information about your habits with respect to exercise
- Information about your habits with respect to homework and studying
- A space for any information that you think is necessary
- After finishing the Initial Questionnaire, you will receive an email communication from smishkin@ma.org containing:
 - An ID number unique to you, for confidentiality purposes. You will be asked to provide your ID number in all surveys after the Initial Questionnaire.
 - A document with instructions on how to download, set up, and use StepsApp for this study
 - Links to the Daily Survey, the Weekly Survey, and the Final Survey
- You should download and set up StepsApp at this point, while following the instructions (which you may also view right now:
https://docs.google.com/document/d/1O_vUaSLbm8UEENF4btSkRCgQ72bDTb31LyVHeiyxUJ0/edit?usp=sharing).

- The **Daily Survey** should be filled out at the end of each day, to the best of your ability. It will ask you to report:
 - Your ID number
 - When you went to sleep the previous day and when you woke up that day
 - When you ate your meals that day
 - You will then be asked to export and upload your daily activity from StepsApp as an image. These data will consist of steps taken and distance traveled throughout the day.
- The **Weekly Survey**, to be filled out once every week, will ask you to report:
 - Your ID number
 - Any significant changes that have happened throughout the past week pertaining to:
 - The start time of your earliest class(es) of the day
 - The overall workload of your classes
 - The format (in-person, online, hybrid) of your classes
 - Anything else that you consider a significant change related to academics, sleep, or exercise
- You will have access to the Final Survey at any time, but you should only complete it once your college or university's next grading period is over. In that survey, you will be asked to report:
 - Your ID number
 - The grade that you earned, if any, from your earliest class of the day (No official or unofficial transcripts will be necessary; you may self-report)
 - The time during which this class took place
 - Any feedback that you have for the investigator on how the experiment may have been conducted more smoothly for you.

After the Final Survey, you will have completed your participation in the experiment. You will have access to any surveys that you submit throughout the experiment and indefinitely afterwards.

POTENTIAL RISKS AND DISCOMFORTS

Although most of the data probably will not involve emotionally charged topics, there is a potential psychological risk in that you may feel uncomfortable reporting data about your lifestyle, physical activity, or grades. An important thing to note is that data will never be reported or considered individually, but rather, data points will be used to illuminate a larger

statistical picture among many participants like yourself. Additionally, your identifying information will never be reported or shared.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Your participation in the study is likely to be helpful to the community studying sleep and circadian science. You will also help the investigator gain hands-on scientific experience. You may also request to access any statistical information calculated from the data that you report.

PAYMENT/COMPENSATION FOR PARTICIPATION

You will not be paid for participating in this research study.

POTENTIAL CONFLICTS OF INTEREST OF THE INVESTIGATOR

The investigator does not have a financial interest in the company sponsoring this study.

CONFIDENTIALITY

We will keep your records for this study confidential as far as permitted by law. However, if we are required to do so by law, we will disclose confidential information about you. The members of the research team and Marin Academy's Institutional Review Board (IRB) may access the data. The IRB reviews and monitors research studies to protect the rights and welfare of research subjects.

The data will be stored in an Excel spreadsheet that will not be publicly shared online or stored on an online platform, in order to maximize safety and confidentiality. Participants' email addresses or other identifiers will be recorded as necessary to collect and organize the data, but the identifiers will be removed from the dataset as soon as they are not needed for those purposes. Participants will each be assigned a number with which to refer to them instead of a name or other identifier.

If you choose to participate in this study, you will be asked to self-report some of your class grades. Your academic information will not be attached to any identifying information about you. Additionally, in the case that there will be a significantly small number of participants who report a particular grade, that quantity will not be publicly displayed and will instead be written as an "X". This will make it much more difficult to connect statistics to individual participants.

PARTICIPATION AND WITHDRAWAL

Your participation is voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

INVESTIGATOR'S CONTACT INFORMATION

If you have any questions or concerns about the research, please feel free to contact Sasha Mishkin or Stori Oates. Sasha Mishkin can be reached at smishkin@ma.org, and Stori Oates can be reached at soates@ma.org or 415-482-3279.

RIGHTS OF RESEARCH PARTICIPANT – IRB CONTACT INFORMATION

If you have questions, concerns, or complaints about your rights as a research participant or the research in general and are unable to contact the research team, or if you want to talk to someone independent of the research team, please contact Ellie Beyers, Marin Academy Science Department Head at ebeyers@ma.org.