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Health

Boarding school rules help teenagers to get more sleep

Alice Klein

ADOLESCENTS could get almost 5 extra hours of sleep per week if they have a consistent lights-out time and no phone access in bed, according to a study that analysed boarding school students who followed these rules.

“It’s a naturalistic experiment showing that the secret to good sleep in teenagers is quite simple: a regular routine and no mobile devices at night,” says Kurt Lushington at the University of South Australia.

Lushington and his colleague Alex Reardon studied the sleep patterns of 59 boarding students and 250 day students at a high school in Adelaide. The students were 15 to 18 years old and a mix of boys and girls.

The boarders had to leave their phones in a kitchen area or on their desk before they went to bed and turn out their lights by a set time, which varied according to their age.

The boarders slept for 40 minutes longer per night than the day students, averaging 8 hours and 26 minutes, compared with 7 hours and 46 minutes.

“I think this shows that if you put these norms in place, kids will go along with them,” says Lushington, who presented the results at the Australasian Sleep Association meeting in Brisbane in November.

Asaduzzaman Khan at the University of Queensland in Australia doesn’t recommend that parents take a teen’s phone away, but rather have a discussion to reach an agreement on a phone curfew.

This is more likely to work if parents do likewise and offer other entertainment, like books, says Khan. “It can be a real challenge and there’s no one-size-fits-all approach, but I think it’s worth trying for the benefits to mental and physical health, attention, learning ability and academic performance that come with extra sleep.” ■

Space exploration

Japanese firm races to make first private lunar landing

Leah Crane



Artist’s impression of the Hakuto-R lander on the moon

spacecraft can fit more scientific payloads aboard. Rather than flying straight there, it will use the gravity of Earth and the sun to give it an extra push during its four-month voyage. The 2-metre-tall craft will weigh about 1000 kilograms when it launches, but most of that mass is propellant that will be burned on the way, and the lander will have a mass of only 340 kilograms by the time it touches down.

Once it arrives at the moon, it will spend about two weeks in orbit, with each circle around the moon taking it closer to the surface. Finally, if all goes well, it will land softly in an area called Atlas crater.

There is a potential wrench in ispace’s plan to be the first private firm on the moon, though: there are two other contenders, both from the US. While both the Nova-C lander, built by Intuitive Machines, and the Peregrine lander from Astrobotic aren’t scheduled to launch until early next year, they will take more direct routes to the moon and could beat Hakuto-R there.

“We don’t care very much about who is going to land first,” says ispace founder and CEO Takeshi Hakamada. “Our vision is to create an economically viable lunar ecosystem – I don’t think it’s possible to do that with only one company, so we want several companies to do business there.” The company has two more lunar missions already in development, with the goal of maintaining momentum with launches in 2024 and 2025. ■

A JAPANESE company called ispace is getting ready to go to the moon. If the Hakuto-R lunar lander is a success, it will be the first spacecraft funded and built by a private firm to land on the moon – provided it isn’t beaten by competitors set to launch next year on a more direct route through space.

The Israeli non-profit SpaceIL made a similar landing attempt in 2019 with the Beresheet spacecraft, but it experienced a fatal engine flaw during the landing phase and ended up crashing into the lunar surface. Like SpaceIL, ispace started working on its lander as part of the Google Lunar X Prize, which offered a cash prize to the first successful moon landing not funded by a government. The prize ended without a winner in January 2018, and so far, only governments – the US, the Soviet Union and China – have managed to land on the moon.

Since the X Prize, ispace has signed contracts with NASA and the European Space Agency for future missions to land

on the far side of the moon and collect samples of lunar dust and water, as well as other collaborations with companies and agencies around the world.

Its first mission, called M-1, was due to launch on a SpaceX Falcon 9 rocket from Cape

2 Height of the Hakuto-R lunar lander, in metres

Canaveral in Florida as *New Scientist* went to press. The lander carries a small rover for the United Arab Emirates’s Mohammed bin Rashid Space Centre, an even smaller two-wheeled robot for the Japan Aerospace Exploration Agency and a camera and flight computer prototype for Canadian companies. If it succeeds, it will also be the first time a craft from Japan or the United Arab Emirates has visited the lunar surface.

Hakuto-R’s path to the moon is a circuitous one, designed to require less fuel so the