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CARL AZUZ, CNN 10 ANCHOR: If you ever thought it would be as awesome as Fridays to just lie around all day and never get out of bed for weeks at a time, NASA may have a job for you.

I`m Carl Azuz.

And today`s special edition of CNN 10 examines the effects of micro gravity on a human body. In a nutshell, they`re not good.

Weaken muscles, back pain, eye problems -- astronauts say they`ve experienced all of these ailments after working in orbit. Thanks to

research like NASA`s Twin Study, which you`ll hear about in a minute, scientists are getting an idea about how extended time in space affects people.

An earth-bound experiment with 12 men and 12 women begun last Thursday, and for another, NASA, in a partnership with European Space Agency, is looking

for women between ages 24 and 55 to help scientists learn more.

What participants will have to do is stay in bed for 60 days, lying at a 6 degree incline with their feet slightly higher than their heads. They

wouldn`t be allowed to get up at all. Eating, bathing, everything would have to be done while lying down. Participants` meals would be taken care

of she`d get all the nutrients they`d need. The food isn`t super healthy, but it will be meted out so participants don`t gain weight.

The bed rest study, according to scientists, will help them get as much knowledge about human physiology as possible.

Scott and Mark Kelly have already contributed a great deal to this kind of research. Scott is an astronaut who spent almost a year in space. Mark is

his identical twin brother who stayed on solid ground.

(BEGIN VIDEOTAPE)

DR. SANJAY GUPTA, CNN CHIEF MEDICAL CORRESPONDENT (voice-over): Year in space, 11 months in, a place the astronauts can never leave, it can be tough mentally.

To keep things interesting, Scott Kelly decided to monkey around.

There is no such thing as a true vacation up here, and that can take a toll. Even on a day off, without any scheduled experiments or maintenance

work, the astronauts are always on alert.

SCOTT KELLY, NASA ASTRONAUT: You wake up, you are at work. You go to sleep, you are at work. You never leave. You are very busy. I think one

of the underlying stressors of being up there for so long is that you are always thinking, OK, if we have a fire, if we have a depressurization, you

know, I have to be able to respond to this.

And that`s something that`s always in the back of your mind where you never really have a minute off from those kinds of things happening. So --

GUPTA: In San Diego, I moderated a panel with Scott and Mark Kelly.

Dr. Stevan Gilmore also joined us. He was Scott`s flight surgeon for his past two missions. This lack of a mental break was one of his biggest

concerns going into a year in space.

DR. STEVAN GILMORE, SCOTT KELLY`S FLIGHT SURGEON: I`d asked you or the other astronauts, if they could describe what time off would be on station.

That`s kind of a difficult thing to do, because for the six- month missions, you are going up there with an attitude of all the things that

you want to get done and it is a very achievable thing.

GUPTA: If you want to eventually get to Mars, that mission would last roughly 30 months, two-and-a-half years. For the duration of Scott`s year-

long flight, he would have only just arrived on Mars.

Now, in addition to being able to mentally handle it, radiation would be a big concern.

Consider this. Beyond low earth orbit, the protection of the earth`s atmosphere is gone. NASA says astronauts are exposed to radiation anywhere

from 50 to 2,000 millisieverts. A millisievert of radiation is

equivalent to three chest X-rays. So add it all up, and that's an exposure equal to

at many as 6,000 chest X-rays.

(on camera): I'm curious, with all that you have learned and all you have seen, do you think Mars is feasible?

SCOTT KELLY: Yes, I think it is definitely feasible. I think there are certain challenges. The radiation environment between the earth and Mars

is something that we are going to have to figure out because we get protection here on the space station, although we get a lot more radiation

than you do on Earth, you get much, much more on your way to Mars. So that's a challenge.

GUPTA (voice-over): Another aspect of being in space for so long, nutrition. In 2014, I visited NASA's Johnson Space Station and got to

taste some of the food. I've got to tell you, it's come a long way. I tried a crab cake and some fish curry.

Even so, though, I am not sure I could eat out of a bag every meal for 340 days, let alone the time it would take for a Mars mission.

For the twins study, NASA monitored everything Scott ate and drank, while Mark continued his regular diet back here on earth. They also closely

monitored Scott's heart. In space, body fluids shift from the legs to the head and upper body, as much as two liters of fluid. NASA says a natural

reaction to this is a decrease in the total amount of circulating blood in the body. That can result in low blood pressure. Upon reentry back to

gravity, some astronauts experience fainting until their blood pressure normalizes.

Back in 2014 when I visited Johnson Space Center in Houston, Texas, I first met Julie Robinson. She is the chief scientist of the International Space

Station with a critical hand in the science experiments happening during Scott Kelly's year in space.

Another element to consider about living on the space station that long is your personal space.

JULIE ROBINSON, CHIEF SCIENTIST, INTERNATIONAL SPACE STATION: These are the sleep quarters. So this is your personal space.

GUPTA (on camera): This is it?

ROBINSON: This is it.

GUPTA (voice-over): Julie showed me around the mock-up of the station, which has 935 cubic meters of livable space.

ROBINSON: You've got some real nice fans blowing on you at night so you don't suffocate.

GUPTA (on camera): Can I step in here?

ROBINSON: Yes. Don't tell anyone.

GUPTA (voice-over): Scott slept in this small compartment every night.

ROBINSON: So, basically you have a sleeping bag that's Velcro-ed to the wall.

GUPTA (voice-over): NASA says astronauts sleep on average less than six hours a day, and before critical mission operations, it is even less.

The twin study is really the crown jewel of this mission. Ten studies with ten different groups of researchers are happening almost simultaneously,

using the samples from Scott in space and Mark on earth.

DR. ANDREW FEINBERG, PRINCIPAL INVESTIGATOR, TWINS STUDY: This is what we can see.

GUPTA: Dr. Andrew Feinberg is a researcher with Johns Hopkins. He's also one of the principle investigators of the twin study. His focus is genetics.

FEINBERG: If you think about the area that the twin study was involved in, things like, say, identifying what might be the epigenetic damage to the

genome that might precede the development of mutations, it could lead to cancer risk that might open the door with way to mitigate that damage.

That has practical applications for here on earth.

GUPTA: By studying Scott and Mark, scientists will be able to identify any links between the environment and human health. But there is another down

side in addition to the potential long-term health impacts for Scott. Because genetic information is a part of this study, privacy could be an

issue for the Kelly twins and their families. So before anything is published, they will have the option of withholding certain information.

(on camera): Your study is going to become a well-known study.

SCOTT KELLY: Yes.

GUPTA: This data is going to be out there. And obviously people are going to know it is you two because you are the only twins that have been in a

study like this at that time. Privacy, the security of that information, just the privacy of it, how much are you worried about?

SCOTT KELLY: I'm not worried about it for me. I'm worried about it more for my kids, like they could potentially see I'm susceptible to having this

disease and based upon the person and what kind of person they are, that could have a significant effect on them or not. Maybe they would just like

to know.

GUPTA: Did you have any reservations, Mark, about being in a study like this?

MARK KELLY: I realize the significance of putting that information out there. In flying in the space shuttle, there is a lot of risks involved,

and it's a risk versus reward thing. And the reward is really for our country and for our nation.

So, same thing with the science. There might be a little bit of a downside for us. But the benefit to the space program and to the American people is

enough to make it a pretty obvious decision.

UNIDENTIFIED MALE: Getting ready to depart the International Space Station again, wrapping up 340 days on board the orbiting laboratory.

GUPTA (voice-over): As Scott's mission in space came to a close, there was one big part left -- reentry.

UNIDENTIFIED MALE: And undocking has occurred.

GUPTA: Perhaps the riskiest part of space flight happens at the very end.

(on camera): You described it as going over Niagara Falls in a barrel that also happens to be on fire.

SCOTT KELLY: Yes.

GUPTA: That`s pretty scary. I watched the video and, you know, first of all, you seem remarkably composed.

SCOTT KELLY: You actually think about it, so I have made it all the way through this whole year, the launch, spacewalks, the risk of being up there

for a really long time. And I`ll tell you what, one of the riskiest parts is at the very end, when you come blasting back into the atmosphere and

you`re relying on this parachute to open in this Russian Soyuz, and everything goes well when there is stuff flying by and hitting the windows,

you know, part of the insulation that comes off and it gets hot inside.

Then as soon as the chute opens and the motions stop and you realize it didn`t kill you, it`s the most fun you have ever had in your life.

UNIDENTIFIED MALE: Scott Kelly, back on mother earth after 340 days in space.

(END VIDEOTAPE)

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