Frequently Asked Questions

What is the purpose of the Continuous Fitness Assessment, or CFA, study?
This study will assess the use of wearable fitness devices to measure physical activity in Guardians. The study is part of the U.S. Space Force's Continuous Fitness Assessment, or CFA, line of effort. The goal is to examine the long-term effects that continuous physical fitness assessment, via wearable devices, has on the physical activity behaviors and performance of Guardians.

How will the results of the study be used?
After the study, a team will analyze the results to determine the effectiveness of wearables relative to the current physical fitness tests and advise on future efforts to make wearables a permanent option. The study results will inform leaders about the role of wearable devices in proposed U.S. Space Force fitness strategies that may replace annual tests.

Who is managing the study?
A team from the Air Force Research Laboratory's, or AFRL, 711th Human Performance Wing is managing the study. Professionals from across the lab are supporting the effort, including psychologists, exercise physiologists, computer scientists, engineers, athletic trainers and program managers. The study is bolstered by years of work across AFRL dedicated to developing and testing devices, validating metrics and identifying security measures along with developing databases and algorithms.

What is the duration of the study?
The study will last two years.

When will the study begin?
The study begins in May 2023.

Who is eligible for the study?
All uniformed Guardians are eligible for the study.

Is participation in the study mandatory or voluntary?
The study is 100 percent voluntary for Guardians. Participation is optional.

What are Guardians expected to do for the study?
Participants will wear the approved devices, log workouts via the devices/app and complete monthly surveys as the AFRL team monitors select data to assess the capability.

When will Guardians be notified of the study?
In May 2023, Guardians will receive an email invitation to join the study. An AFRL team will lead three informational sessions in Colorado at Peterson, Buckley and Schriever Space Force bases from July 18-27, 2023, in which Guardians can enroll in the study.

Will Guardians still participate in the annual physical fitness tests if they participate in the study?
No. Thanks to a physical fitness test, or PT, waiver, Guardians who enroll and fully participate in the study meet their fitness requirements.

What are the approved study devices?
Two Garmin watches, the Garmin Forerunner 255 and the Instinct 2, are the approved study

devices. These devices will be issued to Guardians who participate in the study.

Why were Garmin devices selected as the approved study device?
For accuracy of measuring heart rate and cardiorespiratory volume, Garmin smartwatches have been shown to be within scientifically acceptable ranges for activities like running, walking and cycling. Scientific evidence indicates that Garmin is a comparable leader, and in some categories, better than its competitors. Since CFA is a scientific study, the accuracy of the data collected is vital.

What data will be collected during the study?
The data collected is the minimum necessary to meet the goals of the study, including exercise type, duration, heart rate, estimated VO2max, and repetition counts for muscular fitness such as push-ups. The data collected from the wearable device consists of one metric that gets to the overall level of cardiorespiratory fitness and one metric that identifies the quantity and intensity of the physical activity.

Are study participants expected to wear the devices 24/7?
No, participants are only required to wear these devices during physical activity. They will also receive instructions for disabling the GPS. This measure addresses privacy concerns from those who do not wish to log data on location and movement.

Will the devices track participants' sleep and how many steps they log each day?
No. The study focuses only on select fitness parameters collected during routine, purposeful physical activity, as well as other requirements such as cardiorespiratory/muscular fitness.

What system will track the data from these devices?
Guardian data will be tracked on the Airman Data and Performance Tracking System, or ADAPTS, a secure platform originally developed for the special operations community that aggregates data from commercial wearable fitness trackers with customizable dashboards. The study team is also leveraging Cloud One, a Department of the Air Force enterprise information technology capability that provides cloud services via common secure computing environments.

How secure is the system that will track Guardians' data?
An AFRL cybersecurity team validated the security of the system through an Approval to Operate, or ATO, certification, which involves a risk management framework process where a set of controls are selected to protect the system based on risk assessment.

What cybersecurity measures are in place to ensure the system and the data collected is secure?
An AFRL cybersecurity team evaluated the security measures associated with the watch and the systems that collect the data. After evaluating the system, AFRL secured the initial authority to operate in the study phase. This authorization certifies a system is sufficiently compliant with federal cybersecurity policies and regulations to mature the capability.

How will study participants' privacy be protected?
Personal information is protected and behind firewalls. The study team took several steps to protect participants' privacy. One of the strongest privacy protections involves the deidentification or anonymity of the data collected. There's no way to attach anybody's personal information to the data flowing from the watch. That information is protected and behind firewalls. Very few people will have access to personal info and it will be used only to ensure

participation. The limited group of people who will have access to Guardian's fitness data will be required to follow strict data privacy policies.

Will data from the watches be provided to leadership?
The individual data will not be provided to leadership. Data from Guardians' devices will be accessible only by the Guardians themselves and the study personnel with a need-to-know. Only aggregated data on the status of members will be available to the chain of command. Among these are weekly averages of purposeful physical activity, an appraisal of cardiorespiratory fitness (VO2 max) levels, and periodic muscular-fitness parameters. Embedded human performance teams, or Guardian Resilience Teams, supporting the study will only see aggregated, deidentified unit-level data.

What is AFRL doing to address potential vulnerabilities and thwart potential hackers going forward?
Scientists and engineers from AFRL's Information Directorate are assessing vulnerabilities using a Cyber Blue Book process. In April 2023, AFRL released the initial Cyber Blue Book to the study team, a report that assesses the cyber vulnerability of an information system. AFRL secured a cooperative research and development agreement, or CRADA, with Garmin in March 2023 to fully investigate all areas, including the specifications, software, sensors and data encryption. In addition to data security, the AFRL team is also addressing security from an attacker's perspective by identifying tactics, techniques and procedures to prevent system breaches.

What other areas will the study examine?
This study will first explore how CFA impacts the Guardians' physical activity behaviors. But then, a comparison group with Airmen who have similar job requirements to Guardians, will enable the study team to determine if CFA is an equivalent, or potentially better solution for maintaining physical readiness, as compared to current Department of the Air Force fitness standards. While the study focuses on physical fitness and wellness indicators, the data will also help assess other Department of Defense requirements, including musculoskeletal injury risk. The team will also work to test and refine standards for determining when a Guardian needs additional fitness support.