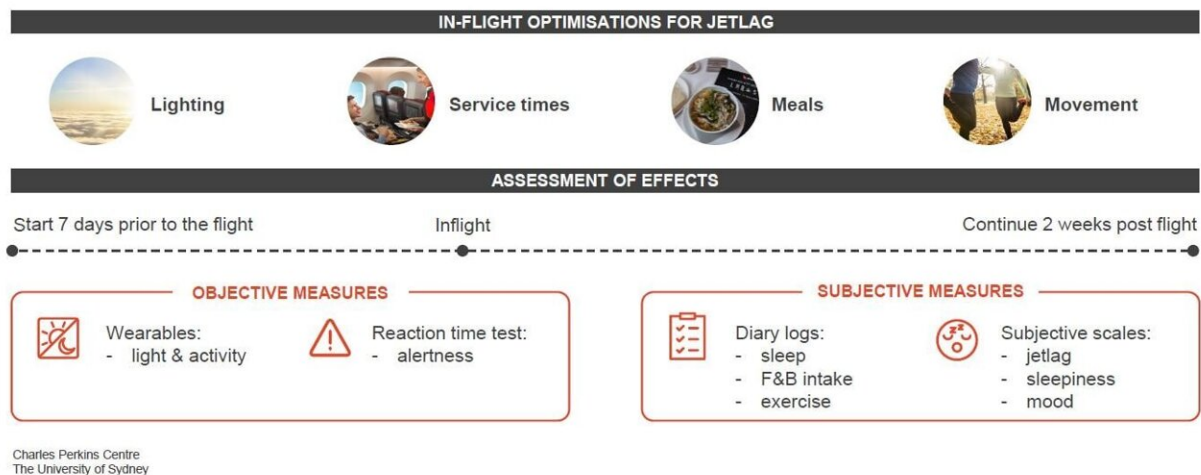


# Research suggests ways to reduce jet lag for long-haul flights

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The 2019 flights were designed to test the feasibility and the likely impact of the in-flight optimisations. Credit: University of Sydney

Research findings by the University of Sydney's Charles Perkins Center and Australian airline Qantas show it is possible to reduce the impacts of jet lag by reshaping the inflight travel experience.

Different lighting and [sleep schedules](#), mealtimes, and specific ingredients like chili and chocolate during long-haul flights have been shown to contribute to improved traveler well-being in preliminary studies. Movement and exercise is, unsurprisingly, a key element.

The world-first research was conducted during 2019 research flights for Qantas' Project Sunrise program, which will connect Sydney directly with New York and London for the first time from late 2025.

The airline has been working with the University of Sydney's Charles Perkins Center since 2015 when it first began preparations to launch Perth to London direct flights.

Qantas operated three Project Sunrise research flights from New York and London to Sydney in 2019 in partnership with Charles Perkins Center researchers to collect real-world passenger data.

Researchers traveled on the aircraft and monitored 23 volunteer customers who were fitted with wearable device technology during the 20-hour flights as they followed specially designed menu, lighting, sleep and movement sequences.

## **Initial findings**

Initial findings, as yet unpublished, indicate that compared to customers on a traditional in-[flight](#) sequence of light exposure, eating and sleeping, those on the tailored schedule experienced:

- less severe jet lag (self-reported)
- better sleep quality in-flight
- better cognitive performance in the two days after flight

The inflight trials involved tailored cabin lighting schedules to facilitate adaption to the destination time zone and integrating simple stretch and movement activities.

They also adjusted the timing of meal services to align the passengers' body clock and encouraged waking and sleeping by using specific menu

items including fish and chicken paired with fast-acting carbohydrates, as well as comfort foods like soups and milk-based desserts to encourage sleep. The aim was to promote the brain's production of the amino acid tryptophan ("Tryp") to help passengers drift off more easily.

The specially designed Airbus A350s that Qantas will use for Project Sunrise flights include an onboard Well-being Zone informed by the research and unveiled today in New York, where passengers can take time out to stretch and do simple exercises onboard, guided by video screens.

Peter Cistulli, Professor of Sleep Medicine at the University of Sydney said while the research was ongoing, there were clear signs that the interventions implemented during the trial flights reduced the impact of ultra long-haul travel.

"We have a multi-disciplinary team of more than ten researchers from medicine, science and engineering backgrounds working together on this project. This includes sleep researchers, circadian experts, nutrition and movement experts. No airline has ever done this kind of research before.

"The early findings have given us optimism that we can make a real difference to the health and well-being of international travelers thanks to this partnership with Qantas."

Qantas Group CEO Alan Joyce said the national carrier was excited by the prospect of minimizing jet lag and revolutionizing international flying for all travelers.

"Given our geography, Qantas has a long history of using imagination and innovation to overcome the tyranny of distance between Australia and the rest of the world," said Mr. Joyce.

"Now that we have the aircraft technology to do these flights, we want to make sure the customer experience evolves as well, and that's why we're doing this research and designing our cabins and service differently.

"Our A350s will have about 100 fewer seats than most of our competitors, which gives us room for more space in all classes as well as a Well-being Zone for Premium Economy and Economy passengers to stretch. People can choose how they spend their time but we'll make recommendations based on science around menu choices and best times to eat or rest. That extends to before and after the flight to improve how people feel when they arrive on the other side of the world."

"Importantly, these direct flights actually cut total travel time by more than three hours compared to one-stop services."

Charles Perkins Center and Qantas will take part in a first-ever combined lighting workshop at Airbus' Hamburg headquarters later this year where specialists will design the lighting settings for the aircraft, including reviewing the optimal brightness and color tone settings for each part of the flight.

"The timing and level of light is crucial to facilitate passengers' adjustment to new time zones, and we know that light at incorrect times can even move the body clock in the wrong direction," said Dr. Svetlana Postnova, an expert in circadian modeling at the Charles Perkins Center and the School of Physics.

"We are excited at the prospect of applying our scientific knowledge to the [aircraft design](#) and schedules for Project Sunrise moving forward."

Parallel research has been done by other teams to manage crew well-being on these flights, which also draws on experience from other ultra-long haul flights operated by Qantas.

Qantas is scheduled to take delivery of its first A350 in late 2025, with the Project Sunrise launch route between Sydney and New York expected to take off shortly after.

Provided by University of Sydney

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