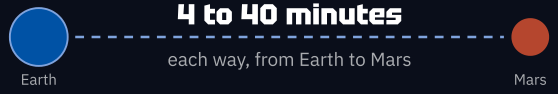
The problem

When the doctor is 20 minutes away, the crew still needs an answer now.



Symptom checkers on Earth assume Earth. In space a stuffy nose on day 2 is fluid shift, not a cold, and joint pain after a spacewalk is decompression sickness until proven otherwise.

With blackouts of up to two weeks and **no physician on board**, a non-medical crewmember has to answer three questions alone.

What could this be?	How serious is it?	What do we do now?
Fluid shift	Stuffy nose on day 1 is not a cold	
Spacewalk	Joint pain after one outranks a strain	
Kidney stone	Bone loss raises the risk in flight	

NASA's own risk models call in-flight medical data severely limited. For some serious conditions the count is zero, so there is nothing to train a model on.

Team TETHER

Who built it

Joshua Collado
Project lead and main coder

Joaquin
Medical research and co-coder

Cruz
Interface design and user testing

Ms. Sylvia Odoms
Sponsor

South Texas ISD Science Academy (school number TX151), Mercedes, Texas. NASA HUNCH 2026–27, Software and Technology: Medical Diagnostic System with Machine Learning and Artificial Intelligence.

What's next

November	Run it on the Jetson
Winter	Ground crew and doctor screens, first sensor
March	CDR at 90%, with voice
May	FDR at Johnson Space Center

Visit the website
jc-portfolio.codes
/vitals

VITALS is a student prototype for decision support. A doctor has the final say. Not a medical device.

VITALS

An onboard medical assistant for astronauts on long missions to the Moon and Mars. It works with no internet at all.

Team TETHER
NASA HUNCH 2026–27

What it does

Built to be trusted with no doctor in the room

Talk in plain words

Type how you feel, the way you'd say it out loud.

Urgency comes first

Every answer leads with how serious it is, in a word and a color.

Every answer has a source

It only names conditions from 35 researched spaceflight conditions, and shows where each came from.

A second check that never sleeps

A rules engine can raise the alarm even when the AI doesn't.

The crew can correct it

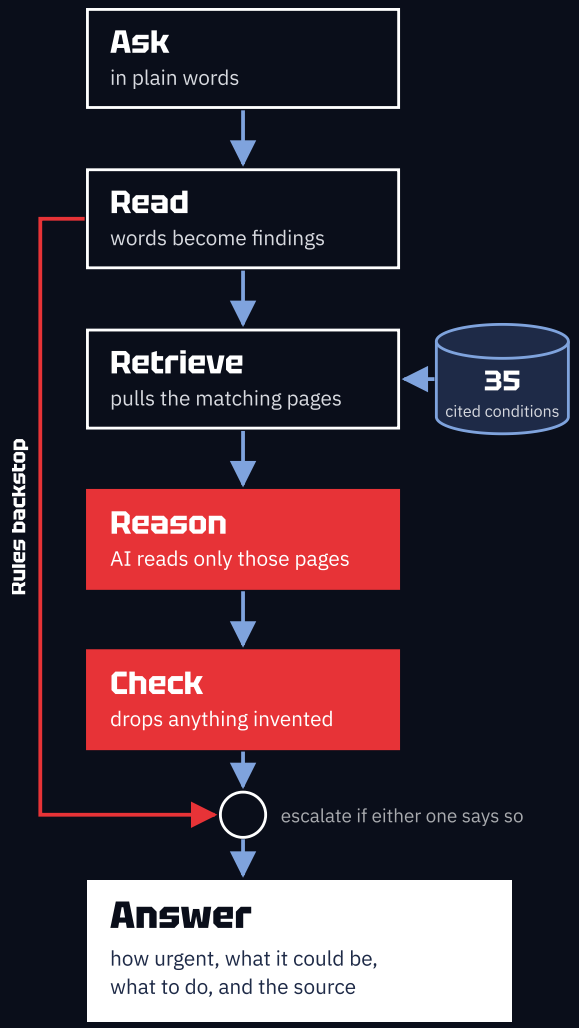
Tap **Wrong?** on anything it misread and the answer updates.

No internet needed

A local AI and the research run on one small computer in the habitat.

How it works

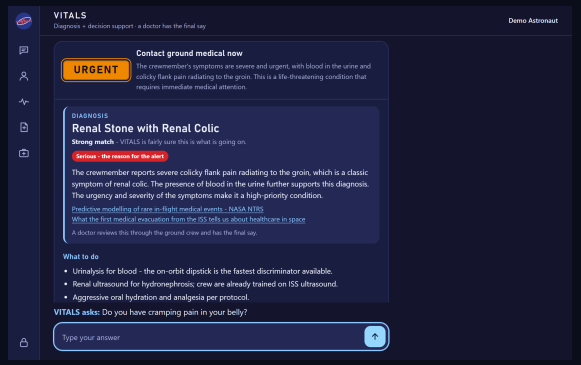
How VITALS answers



There is no flight data to train on, so VITALS grounds a local AI in cited NASA research instead.

The prototype

Working today



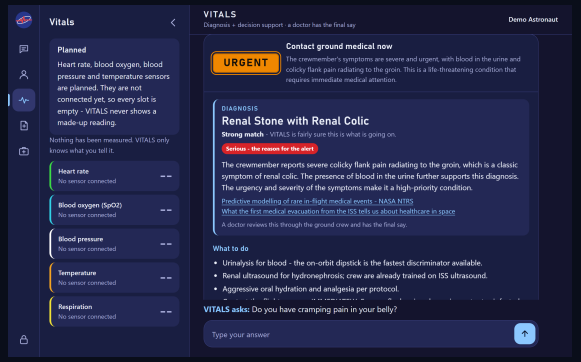
The astronaut screen: one complaint in, urgency and next steps out, with the research it came from.

6 of 6
basic missions

18 of 19
must-escalate cases caught

262
tests pass

Astronaut screen	Working
Offline AI and rules backstop	Working
Ground crew and doctor screens	Planned
Jetson Orin Nano server	Planned
Sensors and voice	Planned



Running Llama 3.2 offline. Tabs for vitals, doctor notes and supplies are already in the app, marked planned.