PeWoNu

Know your own baseline.

Mind, movement and fuel for crews far from Earth.

- **Peace** mind
- **WOD** move
- **Nutrition** fuel



Challenge: Create Health Monitoring Software for Astronauts on Space Missions

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NASA Space Apps Challenge 2026 · Prototype with simulated, analog data. No diagnosis.

On the way to Mars, “normal” changes

AST-0001 · SIMULATED

Two weeks of history on Earth. In transit, sleep dips. On arrival, the pulse and the balance symptoms rise.

Normal, or a warning?

An average cannot tell. **Their own baseline can.**



3–22 min

one-way delay, Earth to Mars

5

NASA hazards of spaceflight

1–2 %

bone lost a month without countermeasures

Who it affects: crews on long missions and the crew medical officers who look after them.

Why it is urgent: help is minutes away, so the first decisions are made on board.

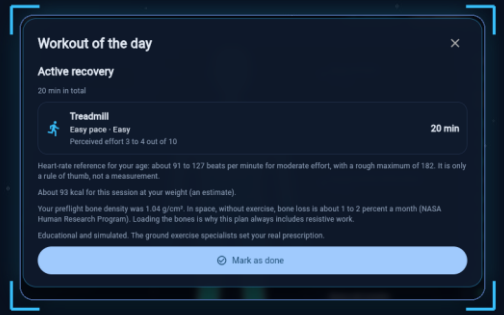
Sources: NASA Human Research Program (hazards, bone loss); NASA NTRS 20250000009 (delay range).

Three pillars, one baseline



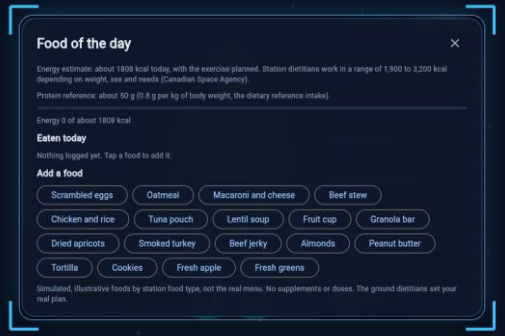
Peace · Mind

A calm check-in: mood, a guided pulse, a voice log that keeps numbers, not audio.



WOD · Move

Today's workout on the machines the ISS crew has: T2, CEVIS and ARED.



Nutrition · Fuel

Energy and meals against the 1,900–3,200 kcal range of station dietitians.

What is new: traditional tools compare you with a population average. PeWoNu compares you with yourself, in each place, and says gray when it does not know.

NASA and agency resources, and how we use them

NASA · HRP

Its five hazards are the vocabulary of our hazards screen and system cards. Bone loss of 1–2 % a month shapes the WOD.

NASA · ISS EXERCISE

The T2, CEVIS and ARED machines our workout of the day is built on. About 2.5 hours a day.

NASA + CSA · FOOD

ISS food types and the 1,900–3,200 kcal range frame our meal log and energy estimate.

NCHS · REPORT NO. 41

Used as the labeled population pulse reference, only while there is no personal baseline.

MEDLINEPLUS · NIH

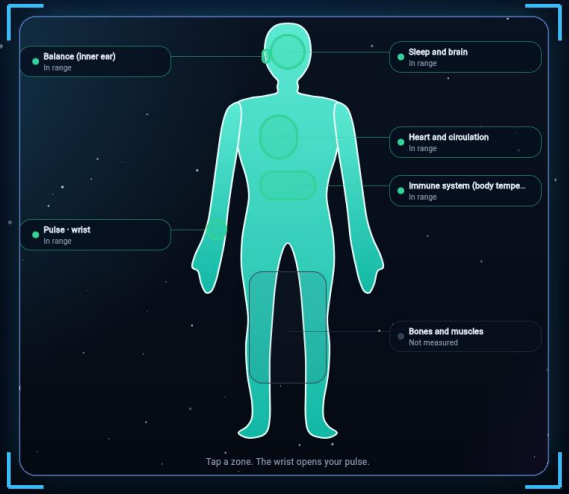
The hand-pulse technique our guided mission teaches, step by step.

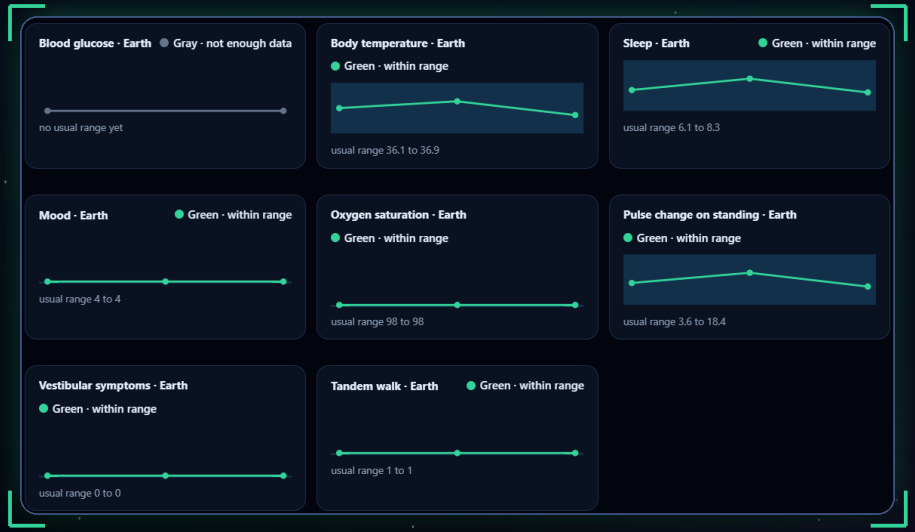
HL7 FHIR R4 · LOINC

How the pulse is shared: Observation 8867-4, /min. 0 errors in the official validator.

Resources, not datasets (the challenge lists none). They define what we measure, compare and share.

Your own range, in every place





1 Intake

Mood, pulse, wearables, workouts, meals

2 Baseline

Median and robust band per place; 3 readings in a row outside it turn amber

3 Status

Green, amber, red or gray, with a reason

4 Share

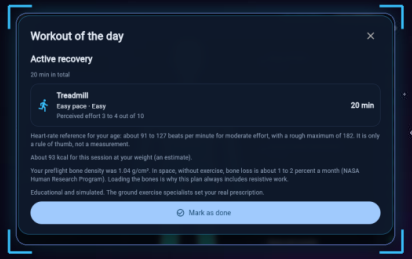
Only what you confirm, as HL7 FHIR R4

A day with AST-0001









1. Sign in
2. See each system
3. Train and eat
4. Share what you confirm

Simulated crew and data.

What PeWoNu could change

BENEFITS

Fewer false alarms, advice that fits each person, and sharing only what the astronaut decides.

SCALE

Today: analog missions on Earth. Tomorrow: Artemis and Mars, where help is minutes away.

NEXT

Real wearables, validation with analog-mission data, meals saved in the database.



github.com/MrT-coder/pewonu

Open source · MIT license

TRANSPARENCY AI used: Claude Code (code, tests, docs), NotebookLM (research), Gemini (logo) and Gemini + Meta AI (pulse illustrations). AI images carry a visible mark. All crew and data are simulated.