Why Aegis Station Is Going 1g

We know what happens in **zero gravity**—and it's not good.

Muscle atrophy, bone loss, fluid redistribution, vision problems, psychological strain. We've been flying humans in microgravity for over 60 years. The effects are well-documented, and none of them point to long-term viability. Astronauts can survive in 0g, but they do not *thrive*.

We also know what happens in **1g**—because that's Earth. That's the environment the human body evolved in over millions of years. Every biological system—cardiovascular, skeletal, vestibular, reproductive—relies on gravity as a baseline input. It's not optional. It's foundational.

But what about **0.2g**? Or **0.5g**? What about Mars' **0.38g** or the Moon's **0.17g**?

We don't know. There is *no* long-duration human data for any level of partial gravity. Not for weeks. Not for months. Not for years. Zero. That entire region between Earth and orbit is a scientific blind spot. The only way to fill it is with artificial gravity via rotation—and nobody's done it yet.

The Risks of Partial Gravity

Aegis Station was originally designed for **0.5g**, with the assumption that half Earth gravity might be "good enough." But that's a gamble. If it turns out that 0.5g still causes chronic muscle or bone deterioration—or worse, impairs reproduction or development in children—we've built a multibillion-dollar station that people can't live on indefinitely.

And if we're wrong, it won't show up right away. The body can adapt in the short term. The real danger is subtle: long-term, cumulative degradation. The kind of damage you don't see until people return to Earth and can't walk. Or never *can*return because their bodies can no longer tolerate full gravity.

We can't afford that kind of uncertainty—not for permanent settlement. We can simulate lower gravity environments within a 1g station. We cannot simulate 1g in a partial-g system.

The Benefits of 1g

By designing Aegis Station to provide a full **1g at the floor**, we eliminate the biggest unknown in human spaceflight. We give people a place to live, work, raise children, and return to Earth without a months-long rehabilitation. We remove gravity as a medical variable.

1g isn't just safer—it's *simpler*. Life support, circulation, digestion, exercise, fluid systems—all behave as they do on Earth. Equipment doesn't have to be redesigned for unfamiliar environments. Training is easier. Failure modes are familiar. A 1g station becomes a natural extension of Earth, not an alien biome that humans must constantly fight to survive in.

There's another advantage: *capacity*. Because the new station radius is larger (350m), the ring length is longer. That means **more usable interior space per ring**—without doubling costs. We get more room, more decks, and more future expansion options by scaling to 1g now.

Conclusion

We already know how to survive in 0g. We want to *live* in space—and that means gravity. Not maybe-gravity. Not we-hope-it's-enough gravity. Real gravity. The kind our bodies know.

So Aegis Station is going 1g.

Because if we're building the first great world in space—it should be one people can call home.