Episode Book

EPISODE #5578

Resilience Isn't a Muscle — What the Research Actually Shows

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SYNOPSIS

Resilience is the most common outcome after trauma, yet the self-help advice to "strengthen it like a muscle" doesn't match the evidence. This episode digs into what resilience actually is — an outcome, not a trait — and why the real question is about energy, bandwidth, and load. Drawing on Bonanno's resilience paradox, the allostatic load framework, and recent intervention trials, we explore why small stressors feel overwhelming when you're maxed out, how stress sensitization lowers your threshold, and why reducing load often beats training harder. Plus: the contested science of ego depletion, and what actually buffers stress when you can't quit.

TRANSCRIPT



Corn

Resilient people are made, not born. There isn't a gene or a personality trait for resiliency. It's a skill you can practice and strengthen, just as you would a muscle.



Herman

That's the Mayo Clinic. Word for word. And it's everywhere.



Corn

It is. And Hannah sent us something this week that pokes at exactly that. She says they talk a lot about resilience with Ezra, the whole parenting idea of the moment, let the kid hit some frustration, don't swoop in and rescue him from every difficulty, give him a chance to learn he can handle things. She hopes that's landing. But what she actually wants to talk about is resilience in adults.



Herman

Right, because Ezra's a baby. He's got decades of this ahead of him.



Corn

Once we're already fully formed people, how flexible is it? Is it a muscle that can be strengthened, or is it mostly personality and circumstance? And then her second thread, which I think is the sharper one. How much of resilience is really just available bandwidth? When life is going well, a stressful situation is manageable. When you're maxed out, no reserve left, suddenly every small thing sends you into a tailspin.



Herman

And then the practical half.



Corn

What do you do at the limit? Can you build capacity in the middle of a stressful period, or is the answer sometimes just that you have to reduce the load before resilience can come back? And how do you actually claw your way out once you're already in the hole? Because waiting for life to get easier is not a plan.



Herman

No, it isn't. And the research here is interesting, because the muscle metaphor is not wrong so much as it's doing rhetorical work the evidence doesn't quite support.



Corn

So where do we start?



Herman

Start with what resilience actually is, because the definition has moved. The cleanest version is Troy and colleagues in the Annual Review of Psychology a few years back. They separate factors, processes, and outcomes. Resilience isn't a thing you have. It's an outcome, faring better than expected given adversity, and it sits on a continuum. There's no line where you cross over into being a resilient person.



Corn

Which already breaks the metaphor. A muscle is a thing you have. This is a result.



Herman

A result produced by processes. That's the key shift. And Bonanno's three axioms from 2024 make it concrete. First, resilience is the most common outcome after potentially traumatic events. Roughly two-thirds of people exposed to major trauma show a stable resilient trajectory. Second, there are no key traits. His line is "resilience is not a type." Third, resilient outcomes happen through flexible self-regulation.



Corn

Two-thirds. That's higher than most people would guess.



Herman

Much higher. The cultural picture is that trauma shatters people, and for a minority it does. But the modal response is stability.



Corn

I want to sit on that for a second, because it reframes the whole conversation. If two-thirds of people are fine after major trauma, then resilience isn't a rare achievement. It's the default. The exceptional case is the one-third who struggle.



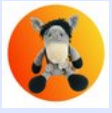
Herman

And it flips the self-help framing on its head. The self-help framing treats resilience as something you have to acquire, like a rare mineral. The data says it's what most people do by default, and the interesting question is what interferes with it.



Corn

So if two-thirds bounce back and there's no trait that predicts who, you'd think the field would be good at identifying resilient people in advance.



Herman

It's terrible at it. Bonanno calls it the resilience paradox. The correlates of resilient outcomes are, in his words, generally so modest that it is not possible to accurately identify who will be resilient.



Corn

So you can't pick them out beforehand.



Herman

Not reliably. Which is a real problem for the self-help version of this. If you can't predict who bounces back from measurable characteristics, then "just build resilience" is less actionable than it sounds. It's advice pointed at something nobody can locate.



Corn

And the intervention evidence backs that up.



Herman

The most important recent paper is a Nature Reviews Psychology review from May, Schäfer, Stoffers-Winterling and Lieb. They went through the intervention literature and the conclusion is blunt. Current resilience interventions, focused on training individual psychosocial factors, yield only small-to-medium favourable effects. And they argue the field has to move from training abstract individual factors to targeting mechanisms during stressor exposure.



Corn

So the thing Mayo says you can strengthen like a muscle, the actual effect size of trying to strengthen it is small to medium.



Herman

Small to medium. That's not nothing. But it's a long way from "practice and strengthen, just as you would a muscle."



Corn

Let me make sure I understand the size of that gap. If I sign up for a resilience program, what am I actually buying?



Herman

A modest nudge. Think of it like the difference between a vitamin and an antibiotic. A vitamin is real, it does something, but if you have an infection, it's not the intervention you need. Resilience training is closer to the vitamin end of the spectrum. It helps at the margins.



Corn

And the margins are not where most people are struggling.



Herman

The margins are not where most people are struggling. Which is where Hannah's bandwidth question comes in, and I think that's where the biology actually gets interesting.



Corn

It does. There's a real framework for this, the energetic model of allostatic load. Bobba-Alves, Juster and Picard, 2022. The claim is that living organisms have a limited capacity to consume energy. Chronic stress overconsumes that energy, and it competes directly with growth, maintenance, and repair.



Corn

Say the competition part again, because that's the whole thing.



Herman

The transition to maladaptive states arises when the added energetic cost of stress competes with longevity-promoting growth, maintenance, and repair. It's not that stress makes you weak. It's that stress is spending the same budget your body uses to fix itself.



Corn

So you're not running out of willpower. You're running out of energy that was already allocated to repair.



Herman

Right. And Radley and Herman in Biological Psychiatry in 2023 put the same idea in one line. Transition to pathology occurs only after the adaptive capacity of an organism is exhausted.



Corn

"Only after." That's a strong claim.



Herman

It's a strong claim. The stress response isn't the problem. It's an adaptive defense mechanism. It becomes pathology when the capacity to sustain it runs out. Which is exactly Hannah's intuition. Being maxed out makes small things overwhelming because the reserve that would absorb a small thing is already committed.



Corn

And it gets worse with repetition, doesn't it?



Herman

Stress sensitization. Giotakos, 2020. Repeated emotional stressors leave traces that render individuals vulnerable to the onset of new episodes, even under the influence of only moderate psychosocial stress. The threshold drops. You don't need a big stressor the fifth time. A moderate one does it.



Corn

So the tailspin isn't a character flaw. It's a lowered threshold.



Herman

It's a lowered threshold with a mechanism behind it. There's also an inverted-U here. Kawamoto and colleagues, 2025. Moderate stress triggers beneficial adaptation. Chronic or excessive stress leads to allostatic load and pathology. Same stressor, opposite outcome, depending on where you are on the curve.



Corn

Which means "what doesn't kill you makes you stronger" is only true in a band.



Herman

Only in a band. Past the band it makes you sicker.



Corn

Is there a way to feel which side of the band you're on? Like a physical tell?



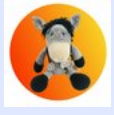
Herman

Sleep is the tell. If you're sleeping badly for weeks, you're past the band. If small things are landing harder than they should, you're past the band. The body usually tells you before the mind admits it.



Corn

Now, there's a piece of this I want to push on, because the "resilience as a depletable resource" idea has a famous controversy attached to it.



Herman

Ego depletion.



Corn

Because that's the laboratory version of "you run out."



Herman

And it's contested, so let's not pretend otherwise. The big multilab replication, twelve labs, one thousand seven hundred and seventy-five participants, found an effect of d equals zero point one zero. Small and significant, they called it. Other meta-analyses found the effect basically vanishes once you correct for publication bias.



Corn

So the lab version of "willpower runs out" is shaky.



Herman

It's shaky. But Baumeister and colleagues pushed back in 2024, arguing the failed replications were due to ineffective manipulations. So it's unresolved. I'd say the honest position is that the specific ego-depletion paradigm is in trouble, while the broader energetic picture from allostatic load is on much firmer ground. Different levels, different evidence.



Corn

That's a useful split. The metaphor is contested. The biology of exhaustion isn't.



Herman

That's exactly the split. And it matters for Hannah's question, because if resilience were a muscle in the straightforward sense, the answer at the limit would be "train harder." If it's an energy budget, the answer at the limit is "stop spending."



Corn

Which brings us to the fork. Can you build capacity mid-stress, or do you have to reduce the load first?



Herman

The literature leans hard toward load first. If you're in overload, the body is diverting energy away from repair. Training harder in that state is spending from the account you're trying to refill.



Corn

And the intervention trials that do show gains, what do they actually show?



Herman

Modest but real. An eight-week guided self-help mindfulness intervention raised Connor-Davidson Resilience Scale scores and lowered burnout in a hundred and eighteen psychiatric nurses. A five-week Enhanced Stress Resilience Training improved burnout and personal accomplishment in ICU nurses, forty-eight of them. A partially clustered trial of a hundred and forty-four mental health nurses improved coping self-efficacy.



Corn

All nurse populations.



Herman

All nurse populations, which is not an accident. That's a workforce with a known, measurable, chronic load. And notice the sizes. Forty-eight people. A hundred and eighteen. These are small trials with small-to-medium effects, which is exactly what the Nature Reviews review said to expect.



Corn

So the ceiling on training your way out is low.



Herman

The ceiling on training your way out is low, and the floor on reducing your load is high. That asymmetry is the finding.



Corn

Then what actually helps you claw back? Because "reduce the load" is not always available. You can't always quit.



Herman

No. And this is where the modifiable-resource studies are useful, because they don't ask you to change your personality. The breast-cancer study, Korecki and colleagues, a hundred and eighty patients. Lifetime stressor severity predicted depressive symptoms, beta of zero point three zero. But sleep quality, social support, optimism, and mastery buffered that relationship.



Corn

Buffered how?



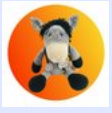
Herman

They weakened the link between the stressors and the depression. Same stressor count, different outcome, and the difference was carried by things you can actually change. Sleep is not a personality trait. Social support is not a personality trait.



Corn

Optimism is a bit of one.



Herman

Optimism is the fuzziest of the four, fair. But mastery, the sense that your actions move outcomes, that's trainable in a way that "be more resilient" isn't.



Corn

And the cohort study?



Herman

Contador and colleagues, 2026. Six hundred and seventy-seven older adults at risk for Alzheimer's, followed through COVID. Sixty-six percent followed a resilient trajectory. The predictors were physical and leisure activity, sleep, social relationships, and emotional support, and the effect was mediated by perceived stress.



Corn

Mediated by perceived stress. So the resources work by changing how stressful the situation feels.



Herman

Which is the bandwidth story from the other direction. You can add resources to the system, or you can lower the perceived load on it. Same ledger.



Corn

And there's the physical activity piece too.



Herman

Bonanno and colleagues, 2023. Physical activity may buffer against depression and promote resilience after major life stressors. That one's interesting because it's cheap, it's available when you can't quit your job, and it works on the energy side, not the mindset side.



Corn

Now, the practitioner accounts. Because the trials are small and the effect sizes are modest, and yet people do get out.



Herman

They do. And the accounts converge in a way the trials don't. The pattern is reduce the load first, then sleep, diet, exercise, then the mental work. One person put it as: the very first thing I did was reduce my workload. Sleep, diet and exercise were next.



Corn

Load first, in that order.



Herman

Load first. Another one: time, time and more time, be patient with yourself. And my favorite, because it's the least clinical: if you can afford it, quit your job and don't do anything until it sounds good, because you're giving your mind time to run a defrag on itself.



Herman

It's the best description of recovery I've read. Not a metric. A felt threshold.



Corn

But here's the thing I keep circling back to. If the answer is "reduce the load," that's not always available, and there's a version of this discourse that uses resilience to avoid that fact.



Herman

The dark side of resilience. Mahdiani and Ungar, cited in the 2026 review. Resilience discourse can be used to justify not fixing broken systems.



Corn

Which is the sharpest counterpoint in the whole literature. Because "build your resilience" aimed at someone covering three jobs is not advice. It's a way of not hiring the third person.



Herman

And it connects straight back to the paradox. If you can't predict who's resilient, and the interventions are small-to-medium, then telling people to be more resilient is often telling them to absorb a structural problem personally.



Corn

So the honest answer to Hannah's question might be: sometimes the answer is reduce the load, and sometimes you can't, and the gap between those two is where people actually live.



Herman

That's the gap. And I'd add one more thing, which is that the muscle metaphor isn't harmless in that gap. It implies the deficit is in you. If resilience is a muscle, then not having enough is a training failure.



Corn

When it might be a staffing failure.



Herman

It might be a staffing failure.



Corn

I want to test the metaphor one more time before we move on. Is there any version of it that survives?



Herman

A weak version survives. Flexible self-regulation is a skill, and skills improve with practice. What doesn't survive is the implication that it grows reliably with use, without limit, and that the growth is the main lever. Beyond a threshold it doesn't grow with use. It degrades.



Corn

Like a muscle that tears instead of builds.



Herman

Like a muscle that tears instead of builds, and the tear doesn't announce itself until you try to lift something small.



Corn

Okay. That's the research picture. But what does it actually look like when you're in the hole?



Hilbert

It's about four hundred dollars.



Corn

Sorry?



Hilbert

The cot. For the dispatch room. We priced one in seventy-nine and it came to about four hundred dollars with the mattress, and the company wouldn't sign it, so we slept in the parking lot instead.



Herman

You dispatched.



Hilbert

Regional trucking. Nights. Small room, two radios, a phone, and a board with the routes on it. Mostly you sat there. The sitting was the job.



Corn

And the sitting was the stress.



Hilbert

The waiting was. Ninety-five percent nothing, five percent catastrophe, and the catastrophe always came at four in the morning when you'd already been up eighteen hours. That job taught me more about this than anything since.



Herman

More than the training programs.



Hilbert

We got one of those eventually. Videos and a workbook. Resilience training, they called it. The only thing that measurably changed was how good people got at saying they were fine.



Corn

That's the dark side of resilience with a product number.



Hilbert

The ones who lasted weren't the ones who toughed it out. They were the ones who figured out how to sleep in the car between shifts. Kept food in the desk drawer. Had one specific person they'd call at three in the morning. The ones who tried to push through burned out first, every time.



Herman

So the ones who lasted were managing load, not building capacity.



Hilbert

They were managing load. Then the company hired two more dispatchers so nobody covered three routes at once, and the burnout problem went away. Not the videos. The two dispatchers.



Corn

That's the whole episode in one hiring decision.



Hilbert

It usually is.



Corn

So if the muscle metaphor is doing harm, what replaces it? Because "resilience is an outcome produced by processes" is true and completely unusable as a sentence.



Herman

It's unusable. But the 2026 review actually gestures at the replacement. Target mechanisms during stressor exposure rather than training abstract individual factors.



Corn

Which in plain language means help people while the thing is happening, not in a workshop beforehand.



Herman

Help them while it's happening. Which is a staffing question and a scheduling question and a sleep question, not a seminar question. It's Hilbert's two dispatchers.



Corn

And it means the unit of intervention shifts. From the individual to the conditions the individual is standing in.



Herman

Which is a much harder sell, because you can't put a system in a workbook.



Corn

You can't. And there's a real tension there, because the individual-level stuff isn't worthless. Sleep, social support, mastery, physical activity, those are real levers and they're available to people whose load can't change this month.



Herman

Both are true. The personal levers are real and small. The load is structural and large. And the failure mode is pretending the small levers are the large one.



Corn

Which is what the metaphor does. It takes the structural lever and relabels it as a personal one.



Herman

Which is why the honest answer to Hannah is a fork, not a slogan. If you can reduce the load, do that first. If you can't, the modifiable resources are what you have, and they work, slowly.



Corn

The resilience paradox says don't expect to know in advance whether it's working.



Herman

Don't expect to know in advance. Expect it to be slow, expect the threshold to be lowered for a while, and expect the recovery to be measured in seasons, not weekends.



Corn

One more thing before we close, because I think it's the most useful reframe in the whole literature.



Herman

Go on.



Corn

The inverted-U. Moderate stress adapts you, excessive stress degrades you. Which means the question isn't "how do I become more resilient." It's "which side of the curve am I on."



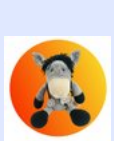
Herman

That's the question. And you can't answer it from the inside, usually. That's what the person you call at three in the morning is for.



Corn

If you found this useful, a review helps other people find the show. Thanks to our producer, Hilbert Flumingtop. This has been My Weird Prompts. Email us at show at my weird prompts dot com.



Herman

We'll be back soon.