MCP SERVER | NO CODE | CLOUD HOSTED

Fatigue Accumulation Tracker MCP for AI Agents

Monitoring Sleep Debt and Cognitive Function in Productivity

The Fatigue Accumulation Tracker monitors sleep debt by analyzing your nightly logs. It calculates your total fatigue level, assesses how much poor sleep impacts focus and reaction time, and builds a concrete recovery schedule so you know exactly when you'll feel normal again.

A+ Quality Score 100/100

sleep-tracker | fatigue | cognitive-health | productivity-tool | wellness-monitoring

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vinkius.com/mcp/fatigue-accumulation-tracker

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Fatigue Accumulation Tracker MCP

3 tools available
Cloud-hosted on Vinkius

When you're running on fumes, it’s hard to tell if that slow period at work is just bad luck or actual physical impairment. This MCP helps you track your sleep debt scientifically. You feed in your nightly hours, and the tool figures out your net fatigue score—whether you've banked a surplus or accrued a deficit. Beyond just numbers, it translates those deficits into practical warnings about your mental performance. If you need to plan for maximum cognitive function, this MCP gives you a clear path forward. Connect it through Vinkius to let your AI client handle the math and the prognostication so you can focus on getting better sleep.

Core Capabilities

01 — Determine total sleep deficit or surplus

The tool analyzes multiple nights of sleep logs to calculate a cumulative fatigue score.

02 — Predict mental impairment from poor sleep

It assesses your expected dips in attention span and motor skills based on accumulated debt.

03 — Plan recovery time until equilibrium

You get a specific timeline showing how many nights of better sleep are required to eliminate the current debt.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/fatigue-accumulation-tracker** — connect your AI agent in three steps.

01 Provide your AI client with several recent nightly sleep logs (e.g., 5 hours, 7 hours, 6 hours).

02 The MCP processes these inputs to calculate the total accumulated debt and predict immediate cognitive risks.

03 Your agent returns a clear assessment: a current fatigue score, an impairment level, and the precise number of recovery nights needed.

The bottom line is that you get actionable health data based on your sleep history, turning raw logs into a concrete plan for better performance.

Built For

Anyone who feels perpetually tired or struggles to maintain focus through the day needs this. It's for high-stakes professionals, shift workers, and anyone managing chronic stress who knows sleep quality impacts everything from job performance to mood.

Sleep Coach

Uses the MCP to analyze client logs and provide concrete recovery timelines, moving beyond general advice.

Operations Manager

Checks team members' accumulated debt to preemptively schedule mandatory rest days and prevent burnout-related errors.

Wellness Professional

Assesses the cognitive impact of poor sleep, helping clients understand the real-world risk to their attention span.

What Changes When You Connect

01 Stop guessing about your energy levels. Using `calculate_accumulated_debt` immediately quantifies whether you're running a deficit or have a surplus.

02 Gain predictive power with `estimate_cognitive_impact`. You see exactly how much poor sleep affects your attention and motor skills before a critical meeting.

03 Planning is key: `calculate_recovery_timeline` gives you a definitive countdown, telling you precisely how many nights of extra rest you need to feel 100% again.

04 It turns vague feelings of exhaustion into hard data. This allows you to schedule recovery time like any other project milestone.

05 Move beyond generic advice about 'getting more sleep.' You get a personalized, quantifiable roadmap for true physical and mental equilibrium.

Real-World Applications

Preparing for a critical presentation

A user inputs their last week's varied sleep logs. The agent uses `calculate_accumulated_debt` to show they have a 14-hour deficit, and then runs `estimate_cognitive_impact`, warning of 'Severe impact risk,' forcing the user to reschedule or prioritize rest.

Managing shift work fatigue

An operations manager inputs logs from several employees. They use the MCP to check for accumulated debt across the team, proactively identifying three people who need immediate mandatory time off before an incident happens.

After a major illness recovery

A user enters sleep data following a bad viral bout. The agent calculates the initial deficit and then uses `calculate_recovery_timeline` to provide a concrete date when they can realistically expect to feel normal again.

Evaluating lifestyle changes

The user logs their sleep data for two weeks, one period before and one after changing their routine. They use the MCP to compare the resulting debt scores and cognitive impact levels side-by-side.

Patterns to Avoid

Treating exhaustion as normal

✗ AVOID

Thinking that 'just pushing through' a week of poor sleep is fine because you are highly motivated. This leads to missed details and burnout.

✓ INSTEAD

Don't just feel tired; track it. Use `calculate_accumulated_debt` to prove the deficit, then use `estimate_cognitive_impact` to see what skills are actually failing.

Ignoring recovery time

✗ AVOID

Assuming that sleeping two extra hours on a weekend will fix all accumulated problems. The effect is temporary and insufficient.

✓ INSTEAD

You need a plan, not just a quick fix. Use `calculate_recovery_timeline` to know exactly how many nights of sustained rest are required.

Using generic health advice

✗ AVOID

Following vague tips like 'get more sunlight' without knowing your actual starting point or deficit severity.

✓ INSTEAD

Get specific data. First, run `calculate_accumulated_debt` to find the number, then use that number in `estimate_cognitive_impact` for a targeted assessment.

The Right Fit

Use this MCP if your problem is quantifying sleep deficit and predicting performance dips. Specifically, if you need to know *how far* off baseline you are (use `calculate_accumulated_debt`) or *when* you'll be back on track (use `calculate_recovery_timeline`). Don't use it if you just want general tips about improving sleep hygiene—you still need a dedicated journaling app for that. Also, don't rely solely on its cognitive predictions; treat them as strong indicators, not absolute diagnoses. Always pair the data from these tools with professional medical advice.

Fatigue Accumulation Tracker MCP: Monitoring Sleep Debt in Productivity

Right now, when you feel foggy or hit a wall mid-afternoon, your first instinct is often to blame coffee or stress. You manually keep logs of how many hours you slept each night and compare them vaguely against an 'ideal' amount, but the resulting number doesn't tell you what it means for your job performance. It’s just noise.

With this MCP, that vague feeling becomes hard data. After inputting those same sleep logs, the tool runs a calculation to give you a single, actionable deficit score and immediately shows you the predicted drop in attention span or motor skills. You don't just feel tired; your AI agent tells you *why* and *how badly* it's affecting your ability to work.

Fatigue Accumulation Tracker MCP: Scheduling Recovery for Optimal Performance

The manual process of recovery planning is guesswork. You might take a weekend off, feel better Monday morning, but then realize the fatigue will creep back in by Wednesday afternoon because you never accounted for the full depth of your deficit.

This MCP changes that entirely. Instead of guessing, you use `calculate_recovery_timeline` to generate a concrete, day-by-day schedule. It tells you exactly how many nights of better sleep are required to return fully to baseline performance. You finally have a measurable goal instead of just 'feeling rested.'

Fatigue Accumulation Tracker: 3 Tools for Measuring Sleep Deficit

These three tools let your agent analyze sleep logs, quantify debt, predict mental impairment, and schedule your path back to full rest.

#	TOOL	DESCRIPTION
01	`estimate_cognitive_impact`	Predicts how much accumulated sleep debt might impair your focus and reaction time.
02	`calculate_recovery_timeline`	Determines the exact number of nights you need to sleep better to return to baseline performance.
03	`calculate_accumulated_debt`	Calculates your total sleep deficit or surplus over a given period of time.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U I slept 5, 6, and 4 hours over the last three nights. My standard is 8 hours. What's my total sleep debt?

Sleep Debt Assessment

Based on your inputs:
- Night 1: -3 Hours Deficit
- Night 2: -2 Hours Deficit
- Night 3: -4 Hours Deficit

Total Accumulated Debt: -9 hours. You need to focus heavily on improving sleep quality this week.

Goal: Return to baseline performance.

U If I have a total debt of 10 hours, and I can manage 2 extra hours per night, how many nights until I'm recovered?

Recovery Timeline Calculation

- Total Debt: 10 Hours
- Daily Improvement Goal: 2 Hours/Night

Result: It will take **5 nights** of consistent sleep (minimum 8 hours) to eliminate your current sleep debt and return you to equilibrium. Keep tracking!

U What's the cognitive impact if I have a 12-hour sleep deficit?

Cognitive Impact Report

- Debt Level: Severe (12 Hours)
- Impact Rating: High Risk
- Affected Areas:

* Attention Span: Significantly reduced, prone to lapses.
* Motor Skills: Noticeable slowing in reaction time.

Recommendation: Avoid driving or operating machinery until the debt drops below 6 hours.

Frequently Asked Questions

01 **How does Fatigue Accumulation Tracker help me know if I'm actually suffering from sleep debt?**

It gives you a quantifiable score, not just a feeling. By inputting your logs, the MCP calculates your total accumulated deficit, turning vague tiredness into a clear number that tells you how far off baseline you are.

02 **Can I use this Fatigue Accumulation Tracker to plan when I'll feel 100% again?**

Yes. The tool provides a specific recovery timeline. You input your debt, and it calculates the exact number of nights you need to sleep consistently better to reach full equilibrium.

03 **What does the cognitive impact assessment from Fatigue Accumulation Tracker mean for my job?**

It tells you which specific mental functions are at risk—like attention or motor skills. It's a warning sign, letting you know to avoid high-stakes tasks until your sleep debt is lower.

04 **Does Fatigue Accumulation Tracker track different types of poor sleep?**

It focuses on the total hours slept versus your baseline requirement. It measures the overall deficit or surplus, which is the most critical number for determining recovery needs.

05 **Is this MCP useful if I'm shifting between different time zones?**

Yes. By tracking multiple nights of sleep logs, it can help you measure how cumulative jet lag or shift work has impacted your overall fatigue and predict when stable performance might return.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"fatigue-accumulation-tracker": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Fatigue Accumulation Tracker is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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