MCP SERVER | NO CODE | CLOUD HOSTED

Sleep Debt Calculator MCP for AI Agents

Track your sleep deficit and get a data-backed recovery plan for better rest.

Sleep Debt Calculator lets you track your missing rest, figure out how many nights of extra sleep you need to catch up, and find the best times to nap without feeling like a zombie. It turns your messy sleep logs into a concrete recovery plan based on your age and caffeine habits.

A+ Quality Score 100/100

sleep | health-tracking | recovery | caffeine | analytics

MAINTAINED BY VINKIUS CLOUD FOR AI AGENTS · JULY 2026
vinkius.com/mcp/sleep-debt-calculator

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.

Sleep Debt Calculator MCP

4 tools available
Cloud-hosted on Vinkius

Most people just know they're tired. They don't know if they're actually sleep-deprived or just hitting a wall. This MCP changes that by turning vague feelings into actual numbers. You can feed it your sleep history from the past week, and it'll tell you exactly how many hours you're behind based on your age. It doesn't just stop at the "how much" part, though. It actually helps you plan the way back to feeling normal. If you want to know how many nights of extra sleep it'll take to clear the deck, it'll give you that timeline. It even looks at your caffeine intake to tell you when a nap won't leave you feeling groggy. It's a useful addition to the Vinkius catalog because it bridges the gap between "I need to sleep more" and "here is the specific plan to do it." You get a clear picture of your cognitive performance drops and a schedule that works with your actual life, not just a generic sleep 8 hours suggestion.

Core Capabilities

01 — Calculate total hours of missing sleep

It determines exactly how much rest you're behind based on your weekly logs.

02 — Predict nights of extra rest needed

It tells you how many nights of surplus sleep you need to hit specific recovery goals.

03 — Estimate percentage of brain fog

It gives you a number on how much your fatigue is actually affecting your cognitive performance.

04 — Find optimal nap windows for caffeine

It suggests the best time to nap based on your last caffeine hit to avoid grogginess.

05 — Track sleep consistency over time

It monitors your sleep patterns to help you identify erratic habits.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/sleep-debt-calculator** — connect your AI agent in three steps.

01 Provide your age and your sleep logs from the last seven days.

02 Let the agent analyze your deficit against your age-based requirements.

03 Get a clear recovery timeline and a personalized nap schedule.

The bottom line is you get a data-backed plan to fix your sleep schedule instead of just guessing.

Built For

This is for anyone who feels like they're constantly running on fumes but doesn't know how to fix it. It's built for people who need to manage irregular sleep cycles or want to quantify their recovery for better performance.

Shift Workers

They use this to find the best times to nap between shifts without ruining their ability to sleep later.

High-Performance Professionals

They use this to see how much their lack of sleep is actually hurting their focus during big projects.

Students

They use this to figure out the fastest way to recover cognitive function after a long night of studying.

Biohackers

They use this to track every variable of their sleep and caffeine intake to optimize their daily output.

What Changes When You Connect

01 Know your numbers: Use `calculate_sleep_debt` to see exactly how many hours of sleep you're behind, moving past the "I'm just tired" feeling.

02 Plan your recovery: `forecast_recovery_timeline` gives you a clear end date for when you'll actually feel rested again, so you can plan your life around it.

03 Avoid the groggy nap: `schedule_nap_remedy` looks at your caffeine half-life to make sure your nap actually works and doesn't mess with your night sleep.

04 Quantify your brain fog: `evaluate_cognitive_impact` puts a number on your fatigue, helping you decide if you're actually fit to handle a big meeting or project.

05 Personalized recovery: The MCP uses your age to determine your needs, meaning the advice isn't just generic "get 8 hours" but tailored to your body.

Real-World Applications

The afternoon slump

A worker feels a slump at 3 PM and asks their agent for a nap window that won't ruin their night sleep. The agent uses `schedule_nap_remedy` to find the perfect time.

The post-all-nighter plan

A student who pulled an all-nighter wants to know how many hours of extra sleep they need over the next 3 days to be sharp for an exam. The agent uses `forecast_recovery_timeline` to give them a plan.

The meeting readiness check

A manager wants to know if their 4-hour sleep night will result in a significant cognitive drop before a big presentation. The agent uses `evaluate_cognitive_impact` to provide a percentage.

The caffeine audit

Someone who drinks a lot of coffee wants to see if their caffeine intake is actually making it harder to nap effectively. They use `schedule_nap_remedy` to check their windows.

Patterns to Avoid

Guessing nap times

✗ AVOID

Taking a nap whenever you feel tired regardless of your coffee intake.

✓ INSTEAD

Use `schedule_nap_remedy` to see how your caffeine is messing with your sleep cycle and find a window that actually works.

Ignoring the deficit

✗ AVOID

Trying to sleep in once on Sunday to fix a week of bad habits.

✓ INSTEAD

Use `forecast_recovery_timeline` to see how many nights it actually takes to clear a week of debt based on your specific history.

Generic sleep goals

✗ AVOID

Aiming for 8 hours of sleep without considering your actual history.

✓ INSTEAD

Use `calculate_sleep_debt` to see what your specific body needs based on your age and your actual logs from the past week.

The Right Fit

Use this if you want to move beyond "feeling tired" and actually have a plan for your sleep recovery. It's great for anyone who tracks their sleep but doesn't know how to use that data to make better choices about naps or extra rest. It's perfect for people who want to see the math behind their fatigue. Don't use this if you need a tool that automatically syncs with your smartwatch or heart rate monitor for real-time physiological data. This MCP is for analyzing logs and planning recovery, not for live biometrics. Don't use it if you just want a simple alarm clock or a basic sleep tracker that doesn't do any analysis. If you want a tool that tells you exactly what's happening in your brain waves while you sleep, you'll need a different clinical tool.

Sleep Debt Calculator for accurate sleep recovery tracking

Most people handle sleep debt by just trying to sleep more when they finally have a free moment. It's a guessing game. You wake up, feel like a zombie, and try to power through the day, only to feel even worse by 3 PM. You might take a nap, but it often leaves you feeling heavier and more confused because you didn't account for the coffee you had two hours earlier.

This MCP changes the math. Instead of guessing, you feed your logs into the tool and get a hard number for your debt. You get a specific timeline for recovery and a nap window that actually works with your biology. You stop reacting to tiredness and start managing it with a plan.

Sleep Debt Calculator for caffeine-aware nap scheduling

You can stop manually calculating your deficits or wondering if that 2 PM nap was a good idea. The tool handles the math of sleep requirements based on your age and cross-references your caffeine intake to give you a clear go or no-go for resting.

It turns your sleep history into a roadmap. You'll know exactly how many nights of surplus sleep you need to hit your goals and how much your current fatigue is actually affecting your ability to think clearly.

Sleep Debt Calculator 4-tool Sleep Recovery Tool

Use these tools to quantify your sleep debt, predict recovery, and optimize your nap schedule based on your caffeine intake.

#	TOOL	DESCRIPTION
01	`calculate_sleep_debt`	Tells you the total hours of sleep you're missing from the last week.
02	`evaluate_cognitive_impact`	Gives you a percentage of how much your brain power has dropped.
03	`forecast_recovery_timeline`	Predicts how many nights of extra sleep you need to reach specific goals.
04	`schedule_nap_remedy`	Tells you the best time to nap based on your last caffeine hit.

See It in Action

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

U I'm 30. I slept 5 hours every night this week. How much debt do I have?

Your total accumulated sleep debt is 10 hours. Based on your age, your sleep consistency is rated as **Poor**.

U I have 8 hours of debt. If I sleep 2 extra hours a night, when am I done?

You'll reach full recovery in **4 nights**. You can expect to reach the fifty percent reduction milestone in 2 nights.

U I had a coffee at 1 PM. I'm tired now. When should I nap?

Since your caffeine levels are still active, a recommended nap window is between **4:30 PM and 5:00 PM** for a duration of 25 minutes. Note that caffeine is still high enough to potentially interfere with deep sleep.

Frequently Asked Questions

01 **How does the Sleep Debt Calculator help me feel less tired?**

It provides a data-backed recovery plan. Instead of just guessing how much sleep you need, it calculates your actual deficit and gives you a timeline to reach full recovery.

02 **Can the Sleep Debt Calculator tell me if my coffee is ruining my naps?**

Yes. It looks at your last caffeine intake and its half-life to suggest nap windows that won't leave you feeling groggy or interfere with your night sleep.

03 **Is the Sleep Debt Calculator good for shift workers?**

It's ideal for shift workers because it helps manage irregular sleep cycles by identifying the best windows for restorative naps based on your specific history.

04 **How do I know how many nights I need to catch up on sleep?**

The tool predicts the exact number of nights required to reach specific debt reduction milestones based on how much extra sleep you can get each night.

05 **Will the Sleep Debt Calculator tell me if I'm too tired to work?**

It can estimate the percentage drop in your cognitive performance due to your current debt levels, helping you decide if you're fit for high-focus tasks.

06 **Does the Sleep Debt Calculator take my age into account?**

Yes, it uses your age to determine your specific sleep requirements, ensuring the recovery roadmap is tailored to your body's needs.

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 `"sleep-debt-calculator": { "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

Sleep Debt Calculator 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

INDEPENDENT PLATFORM DISCLAIMER

Vinkius is an independent platform and is not affiliated with, endorsed by, sponsored by, verified by, or otherwise authorized by Sleep Debt Calculator. All third-party trademarks, logos, and brand names are the property of their respective owners. Their use in this document is strictly for informational purposes to identify service compatibility and interoperability.

DOCUMENT INFORMATION

Generated	July 2026
MCP Server	Sleep Debt Calculator MCP
Server ID	`019f3053-9dc8-707b-b87b-c5f1de093ddd`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

LICENSE & USAGE

This document is generated automatically by the Vinkius PDF Engine. Content reflects the MCP server configuration at the time of generation and may change as updates are deployed. For the most current information, visit vinkius.com/mcp/sleep-debt-calculator.