

MCP SERVER

NO CODE

CLOUD HOSTED

Deload Calculator MCP for AI Agents

Optimizing Athlete Training Cycles and Preventing Overtraining Injuries

The Deload Calculator is a specialized MCP for managing athlete training stress. It analyzes complex physiological indicators, like sleep quality, motivation levels, and performance metrics, to generate precise, actionable recovery protocols. Athletes and coaches use this tool to prevent overtraining syndrome and adjust volume/intensity safely, ensuring consistent, sustainable athletic progress.

B Quality Score 85/100

training

recovery

deload

fitness-tracking

athletic-performance



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.

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.

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.

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

Encryption at rest

Ed25519

PKI vault signatures

24h TTL

Ephemeral session keys

V8 Isolate

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.

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.

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.

06 — Honeypot Trap System

Phantom credentials are injected into isolated environments. If a honeypot 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.

FinOps

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

Firewall & DLP

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

Agent Activity

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

Tool Health

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

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.

Deload Calculator MCP

0 tools available

Cloud-hosted on Vinkius

Training hard is great, but pushing too far without a plan causes burnout. This MCP fixes that. It provides a structured way for athletes and coaches to manage fatigue and build smart recovery into high-volume training cycles. Instead of guessing how long you should rest or what percentage of volume you need to cut, the calculator processes multiple inputs—things like your sleep quality score, perceived motivation, and actual performance trends—to give you concrete answers.

It quantifies accumulated stress first. Then, it uses that number to calculate exactly how much intensity and volume you should drop for a specific period. Finally, it designs a schedule tailored to your sport type, telling you what metrics to look for when it's time to ramp back up. You connect this MCP through the Vinkius catalog with your preferred AI client, letting your agent handle the math and planning so you don't have to cross-reference three different spreadsheets.

This means coaches get data-driven rest periods, not just 'take a break.' It ensures every recovery day actually moves performance forward.

Core Capabilities

01 — Quantify Accumulated Stress

The MCP evaluates your current physiological and psychological state to generate a numerical score of total accumulated training stress.

02 — Prescribe Deload Volume Adjustments

It determines the precise percentage reduction needed for both overall lifting volume and target intensity during a recovery phase.

03 — Design Structured Recovery Periods

The system creates an optimal, sport-specific timeline for your deload period, including clear metrics to track return readiness.

One Click on Vinkius — From Prompt to Execution

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

- 01** You feed the MCP data points: specific inputs like sleep quality ratings, perceived motivation scores, and recent performance declines.
- 02** The system processes this data using its tools to generate a quantitative fatigue index and calculate necessary adjustments to your current training metrics (volume/intensity).
- 03** Your agent receives an actionable plan showing exactly how many days the recovery should last and what specific physical indicators you need to hit before returning to full load.

The bottom line is, it takes messy human performance data and spits out a clear, measurable training adjustment protocol.

Built For

This MCP is for coaches, athletic trainers, and dedicated athletes who need to stop guessing about recovery. If you're tired of watching an athlete plateau because they pushed too hard without a plan, this tool gives you the science-backed structure you need.

Strength & Conditioning Coach

You use it to manage multiple athletes in a team, running fatigue checks and generating individualized deload prescriptions for different sports or training phases.

Athletic Trainer

You check an athlete's readiness by feeding in metrics like sleep and perceived effort to determine if they can safely train at high intensity that week.

Competitive Athlete

You use it with your coach to log weekly performance data, ensuring you build recovery directly into your training cycle so you peak for competition.

What Changes When You Connect

- 01 Stop guessing about rest. Use `evaluate_fatigue_severity` to get a precise, quantifiable score of accumulated stress rather than relying on 'how you feel.'
- 02 It moves beyond simple advice. The MCP provides concrete numbers when using `calculate_deload_prescription`, telling you exactly what percentage volume and intensity to cut.
- 03 The plan is specific to the sport. When running `design_recovery_schedule`, it accounts for whether you're a Powerlifter or an Endurance Athlete, changing the return metrics accordingly.
- 04 It keeps your agent focused on outcomes. You get measurable data points—like 'stabilized bar speed'—to signal when training can resume, eliminating guesswork.
- 05 You save time cross-referencing multiple sources. The MCP handles the complex calculation across sleep, motivation, and performance trends in one go.

Real-World Applications

Athlete plateaus due to chronic fatigue

The athlete feels sluggish and their PRs stall. They ask their agent for a plan. The agent uses `evaluate_fatigue_severity` which returns 'High,' prompting the system to run `calculate_deload_prescription`, resulting in a 60% volume cut, giving the coach an immediate, actionable training adjustment.

Transitioning from competition season

A marathon runner finishes a race and needs to taper. The agent runs `design_recovery_schedule` for 'Endurance Sport,' providing a detailed 7-day timeline that prioritizes low-impact recovery metrics, ensuring they don't get injured before the next event.

Managing overtraining in strength sports

A powerlifter hits a motivational slump and struggles with sleep. The agent checks fatigue severity, gets a high index score, and uses ``calculate_deload_prescription`` to recommend maintaining intensity (85%) while reducing volume by 60%, keeping the training stimulus high but safe.

Determining return-to-play status

After an injury, a soccer player needs clearance. The agent uses ``design_recovery_schedule`` to establish specific benchmarks (like 'stabilized bar speed') and duration, providing the coach with clear criteria for when they are ready to rejoin team practice.

Patterns to Avoid

Using general wellness advice

✗ AVOID

Telling an athlete, 'Just get more sleep and eat better.' This is vague and doesn't provide concrete adjustments to their lifting or running load. It fails because it lacks measurable targets.

✓ INSTEAD

Instead, use the MCP. First, run ``evaluate_fatigue_severity`` to quantify *how much* recovery they need. Then, use ``calculate_deload_prescription`` to translate that need into a specific percentage reduction of volume (e.g., 50% cut) and a set duration.

Forgetting the sport type

✗ AVOID

Applying an endurance recovery schedule to a weightlifter, resulting in inappropriate metrics. The plan doesn't match the physical demands of the athlete.

✓ INSTEAD

Always run ``design_recovery_schedule`` and specify the exact sport (e.g., 'Powerlifting'). This ensures the final recovery timeline measures things relevant to their specific biomechanics.

Ignoring multiple input variables

✗ AVOID

Only checking sleep quality but ignoring performance drops. The calculated rest period will be inaccurate because it only addresses one isolated variable.

✓ INSTEAD

The MCP processes all indicators—sleep, motivation, and performance trends—at the same time in ``evaluate_fatigue_severity``, giving you a holistic index that reflects overall readiness.

The Right Fit

You should use this MCP if your training decisions rely on complex interactions between physical metrics (like volume/intensity) and psychological states (sleep, motivation). It's essential when the risk

of overtraining is high or when you need to justify a significant deload period with objective data. Don't use it if you just need simple advice like 'rest for a week'; that requires less precision. If your goal is simply tracking calories burned, this MCP isn't built for that—you'd need a dedicated nutrition tracker instead.

Deload Calculator: Preventing Overtraining in Athletic Training

Today, coaching recovery often feels like an educated guess. Coaches track training logs and spot performance dips, but they struggle to tie that dip directly to a quantifiable measure of accumulated fatigue. The process involves cross-referencing subjective athlete reports (like 'I feel tired') with objective metrics (like declining 1RM numbers), leading to guesswork about the necessary rest period or how much volume must be cut.

With this MCP, you give your agent all those variables—sleep quality, motivation score, and performance trends. The tool calculates a precise fatigue index, instantly telling you if the athlete is truly overreaching. You don't just get advice; you get the hard data needed to prove *why* and *how much* they need to rest.

Deload Calculator: Structuring Recovery for Peak Performance

Manually designing a return-to-play schedule is tedious. You have to account for the sport—a runner's recovery looks nothing like a weightlifter's. This means manually setting different benchmarks and tracking them over several days, which is prone to human error.

The Deload Calculator handles this complexity automatically. By specifying your athlete's sport type, it generates a structured timeline that only monitors the indicators relevant to their discipline. It gives you clear 'go/no-go' signals when they are truly ready for max load.

See It in Action

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

- U** I just finished a tough month of training. My sleep was poor (5/10), motivation is low, and my squat numbers dropped 20kg last week. What's my fatigue index?



Fatigue Assessment Report

Based on your inputs:

- Sleep Quality: Low
- Motivation: Declining
- Performance Drop: Significant

Your calculated Fatigue Index is **7.8/10 (High Risk)**. Immediate, significant recovery intervention is required to prevent injury and burnout.

- U** I'm a competitive powerlifter with High fatigue. How long should my deload be and what are the key signs I need for return?



Powerlifting Deload Plan

- **Duration:** 7 days minimum.
- **Goal:** Stabilize recovery and maintain movement patterns.

Return Metrics to Monitor: *Stabilized Bar Speed* (must be within 5% of baseline) and Rate of Perceived Effort* (RPE must stay below 6/10). Only proceed when both metrics are stable for three consecutive days.

- U** We need a deload plan for an endurance athlete. They had moderate fatigue, average volume of 1200kg, and intensity at 85%. What adjustments should we make?



Endurance Deload Prescription

- **Target Volume Reduction:** 40% (Maintain distance/time targets but cut overall load).
- **Target Intensity Maintenance:** 75% of peak effort.
- **Key Focus:** Low-impact, high-cadence work. The goal is to flush the system without stressing connective tissue.

Frequently Asked Questions

01 How does Deload Calculator help me know if my athlete is ready to come back from a break?

The MCP provides objective metrics instead of general feelings. It designs a recovery schedule that specifies exact performance indicators—like stabilized bar speed or minimum sleep quality needed—you must hit before returning to full training.

02 Is Deload Calculator just for weightlifting, or can I use it for running?

It's designed for various athletic disciplines. You simply specify the sport type when running the calculations; this ensures the resulting recovery plan and return metrics are relevant to whether you run a marathon or lift heavy.

03 What data points does Deload Calculator actually need from me?

It requires key inputs like your sleep quality score, how motivated you feel (on a scale), and any noticeable drops in performance. Providing this detailed context leads to much more accurate deload protocols.

04 Will the Deload Calculator tell me exactly how much volume I should cut?

Yes, it calculates specific percentage adjustments for both volume (total load) and intensity. This moves you past vague advice like 'take a break' to actionable numbers.

05 Can Deload Calculator help me manage fatigue across different athletes on a team?







Absolutely. You can run the assessment for each athlete individually, allowing you to track multiple recovery needs simultaneously and ensure no one gets overtrained while maximizing the whole team's performance.

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 <code>"de-load-calculator": { "url": "..."} </code>
 Windsurf	MCP Settings → <code>mcp_settings.json</code> → 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

Deload 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](https://cloud.vinkius.com) →

vinkius.com · support@vinkius.com

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