

M C P S E R V E R

N O C O D E

C L O U D H O S T E D

Hydration Needs Athlete MCP

Calculate exact fluid and electrolyte requirements for any training session.

Hydration Needs Athlete MCP provides a precision engine for managing athlete fluid intake. It uses physiological data and environmental stressors like temperature and humidity to build specific plans for pre-exercise, during exercise, and post-exercise recovery. Your AI client uses these calculations to prevent dehydration and hyponatremia by accounting for body weight, intensity, and sweat rates.

A+ Quality Score 100/100

hydration

athlete

fitness

physiology

sports



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.

Hydration Needs Athlete MCP

4 tools available

Cloud-hosted on Vinkius

You can stop guessing how much water or salt you need during a workout. This MCP uses specific physiological formulas to build hydration strategies that actually match your body's needs. By feeding your AI client details like your body weight, the duration of your session, and the intensity of your movement, you get a plan that covers everything from pre-loading fluids to post-workout recovery. It doesn't just look at how much you sweat; it also looks at the environment. If you're training in high humidity or extreme heat, the MCP adjusts your requirements to account for the increased thermal risk. This helps you avoid the dangers of dehydration and hyponatremia by ensuring your sodium replacement stays in sync with your fluid loss. Whether you're a marathon runner or a high-intensity athlete, your agent can now handle the math for your fluid and electrolyte balance.

Core Capabilities

01 — Environmental Risk Assessment

Your agent checks heat and humidity levels to determine thermal danger.

02 — Electrolyte Calculation

The AI calculates specific sodium requirements to prevent hyponatremia.

03 — Sweat Rate Prediction

Your client estimates fluid loss when you don't have direct measurements.

04 — Full Session Planning

The MCP builds hydration strategies for pre, during, and post-exercise phases.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/hydration-needs-athlete — connect your AI agent in three steps.

- 01 Connect your AI client to the Vinkius-hosted MCP.
- 02 Provide your body weight, exercise duration, and intensity to your agent.
- 03 Input environmental data like temperature and humidity.
- 04 The MCP runs the calculations through specialized physiological formulas.
- 05 Your agent delivers a specific hydration and electrolyte plan.

Connect the MCP to your preferred AI client and start feeding it your training data.

Built For

This MCP is built for anyone managing high-performance physical output where fluid balance is critical.

Endurance Athletes

Use the MCP to get personalized hydration schedules for long runs or rides.

Strength and Conditioning Coaches

Hand off physiological data to your agent to generate recovery plans for clients.

Sports Nutritionists

Use the tool to verify electrolyte replacement needs based on environmental data.

What Changes When You Connect

- 01 Calculates fluid needs based on body weight and exercise intensity.
- 02 Adjusts hydration strategies for temperature and humidity levels.

- 03

Provides specific sodium replacement numbers to prevent hyponatremia.
- 04

Covers all three phases of exercise from pre-load to recovery.

Real-World Applications

Heat Wave Training

Check the environmental risk level before heading out for a run in high humidity.

Sweat Rate Estimation

Predict how much fluid you'll lose during a workout when you haven't weighed yourself before and after.

Race Day Prep

Generate a complete hydration and sodium plan for a specific race duration and intensity.

Post-Workout Recovery

Determine exactly how much fluid to drink after a session to restore balance.

4 Tools Available

#	TOOL	DESCRIPTION
01	assess_environmental_risk	This tool evaluates the thermal danger level of your training environment. It checks how temperature and humidity will impact your body's ability to cool itself.
02	calculate_electrolyte_needs	This tool determines the exact amount of sodium you need to replace. It focuses on preventing hyponatremia by matching sodium intake to your specific losses.
03	calculate_hydration_plan	This tool generates a complete hydration strategy. It covers every stage of your session, including pre-exercise, during exercise, and post-exercise recovery.
04	estimate_sweat_rate	This tool predicts your expected sweat rate. It's useful when you don't have a direct measurement of your fluid loss available.

See It in Action

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

U I am a 75kg athlete planning a 90-minute moderate intensity run in 30°C and 40% humidity. I am acclimatized. What is my hydration plan?



Your hydration plan includes 0.4L pre-exercise, 0.8L per hour during exercise, and 1.2L for post-exercise rehydration, with a sodium recommendation of 0.6g.

U What is the environmental risk for a 35°C temperature and 80% humidity?



The risk level is Extreme due to high heat and humidity, which significantly reduces cooling efficiency.

U How much sodium do I need for a 2-hour high intensity session with a sweat rate of 1.5L/h?



You will need approximately 2.25g of sodium to maintain electrolyte balance during this session.

Frequently Asked Questions

01 How does this MCP prevent hyponatremia?

It uses the `calculate_electrolyte_needs` tool to determine the specific sodium replacement required to maintain electrolyte balance based on your sweat rate.

02 Can I use this for different types of exercise?

Yes. The engine calculates requirements based on the intensity and duration you provide, whether it's a moderate run or high intensity training.

03 What AI clients can I use with this MCP?

You can connect this MCP to any compatible client like Claude, Cursor, Windsurf, or VS Code.

04 Does it account for weather?

Yes. The `assess_environmental_risk` tool evaluates how temperature and humidity affect your thermal danger levels.

05 Do I need to provide my sweat rate?

No. If you don't have a measurement, you can use the `estimate_sweat_rate` tool to predict your fluid loss.

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>"hydration-needs-athlete": { "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

Hydration Needs Athlete 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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DOCUMENT INFORMATION

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Platform	Vinkius Cloud for AI Agents
Endpoint	https://edge.vinkius.com/{token}/mcp

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