MCP SERVER | NO CODE | CLOUD HOSTED

Hydration & Sweat Rate MCP

Stop guessing your recovery needs. Measure it.

The Hydration & Sweat Rate Calculator helps coaches and athletes precisely track fluid loss, dehydration levels, and electrolyte needs after any workout. It determines your actual sweat rate using weight changes and calculates specific sodium intake targets, ensuring you plan recovery and pre-event loading accurately.

A+ Quality Score 100/100

hydration | sweat-rate | athlete | dehydration | electrolytes

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vinkius.com/mcp/hydration-sweat-rate-calculator

SCAN TO VIEW

The infrastructure that powers AI agents in the real world.

Vinkius connects AI to the world's software through secure, enterprise-grade infrastructure — enabling real-world execution at scale, built on the Model Context Protocol (MCP).

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the cloud infrastructure where AI agents connect 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.

Hydration & Sweat Rate Calculator MCP

4 tools available
Cloud-hosted on Vinkius

Calculating real hydration metrics used to be messy. Coaches had to cross-reference body weights, elapsed time, and fluid intake into complex spreadsheets just to get a rough idea of performance loss. This MCP replaces that guesswork. It calculates your sweat rate and dehydration level from a completed session using weight changes. Beyond immediate recovery, you can generate a complete hydration replacement strategy for future workouts, figuring out exactly how much liquid and salt you need per hour. You also determine specific sodium targets to address electrolyte gaps with the assess_electrolyte_requirements tool. Need to prepare for a marathon? Use get_hyperhydration_protocol to build a solid pre-event loading plan, making sure your body is ready when race day hits. For reliable, deep performance data like this, connecting through Vinkius gives you access to thousands of other specialized tools across multiple industries.

Core Capabilities

01 — Calculate sweat rates and dehydration levels

Determines total fluid loss and the resulting percentage of dehydration after a period of intense activity.

02 — Determine electrolyte requirements

Calculates specific sodium targets needed to prevent mineral depletion during heavy sweating.

03 — Create future hydration plans

Generates a detailed, actionable strategy for fluid and electrolyte replacement based on activity metrics.

04 — Build pre-event loading routines

Provides structured protocols to prepare your body optimally before major athletic events.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/hydration-sweat-rate-calculator** — connect your AI agent in three steps.

01 Input the metrics from a session, like starting and ending weights or specific fluid intake amounts.

02 The MCP runs calculations against established sports science formulas to determine loss rates and deficiency levels.

03 You get back actionable data: your precise sweat rate, a calculated dehydration percentage, and recommended replacement protocols.

The bottom line is you stop guessing about recovery; you work with actual performance metrics.

Built For

Sports medicine professionals, physical trainers, endurance athletes, and competitive coaches need this. If your job involves tracking performance outside of a standard office setting, this MCP solves the constant math problem that plagues recovery planning.

Physical Trainer

Uses the calculator to analyze client workouts, determining if they are losing too many electrolytes or need adjustments to their fluid intake schedule.

Endurance Athlete

Runs through a race day simulation using the tool to determine precise sodium needs and ideal pre-race loading protocols.

Sports Performance Coach

Manages an entire roster, running various metrics on individual athletes to generate tailored replacement strategies for different training loads.

What Changes When You Connect

01 Know exactly how much you lost. The calculate_sweat_metrics tool gives you precise fluid loss and dehydration percentages, replacing rough estimates with real data points.

02 Target electrolytes properly. Don't just drink water; the assess_electrolyte_requirements function tells you your specific sodium targets needed to prevent cramping and optimize muscle function.

03 Plan for next time. Use generate_replacement_strategy to build a future-proof recovery plan, ensuring you hit ideal hourly intake goals before your next session.

04 Maximize pre-race readiness. The get_hyperhydration_protocol tool provides clear steps for loading fluids and salts, giving your body the optimal edge right when it matters most.

05 Move beyond general advice. This MCP delivers actionable metrics—not just vague recommendations—allowing you to adjust training loads immediately after a session.

Real-World Applications

Post-Marathon Recovery Assessment

A coach needs to know if an athlete's extreme sweat loss requires immediate dietary changes. They run the calculate_sweat_metrics tool and receive a 15% dehydration reading, prompting them to use assess_electrolyte_requirements immediately to adjust the recovery diet.

Setting up Training Cycles

A team is planning a three-week endurance block. Instead of guessing hydration needs week by week, they run generate_replacement_strategy based on peak training load, getting a set target intake for every day.

Optimizing Pre-Competition Loading

An athlete is preparing for an Olympic event. They use get_hyperhydration_protocol to build their loading week routine. This gives them clear, measurable steps instead of just 'drink more water.'

Mid-Workout Adjustments

During a long outdoor training session, the coach uses assess_electrolyte_requirements on the spot to check sweat patterns and advise the athlete to increase their sodium intake immediately.

Patterns to Avoid

Relying only on general guidelines

✗ AVOID

Reading a generic article that says 'drink enough fluids' or checking an old, static spreadsheet that assumes a fixed sweat rate of 1.0 L/h.

✓ INSTEAD

Use calculate_sweat_metrics to determine your *actual* sweat loss from the session you just finished. Then use generate_replacement_strategy to build a plan based on real data.

Ignoring electrolytes

✗ AVOID

Drinking plain water after intense sweating because it 'sounds better' than salt pills, leading to potential hyponatremia.

✓ INSTEAD

After heavy sweat loss, always run assess_electrolyte_requirements first. This tells you exactly how much sodium your body needs right now.

Treating every day the same

✗ AVOID

Following the same fluid intake schedule whether you're doing a short jog or an 8-hour ultramarathon.

✓ INSTEAD

Before any major event, use get_hyperhydration_protocol. It builds a dynamic routine that matches the specific intensity and duration of your upcoming challenge.

The Right Fit

Use this MCP if you need to move beyond simple 'drink more water' advice. This tool is for quantifying performance loss and recovery needs, not just general health tracking. You absolutely need it when training athletes or managing high-intensity physical work where measurable metrics matter. For instance, if a client completes a 90-minute cycle ride, you use calculate_sweat_metrics to get the numbers. If you only care about general hydration and don't track weight changes, then you probably don't need this; a simple tracking app will suffice. However, if you need specific sodium targets or structured pre-event plans, these tools are necessary. Don't use this if you just want to know if you drank enough coffee today—it's about athletic output metrics, not daily beverage consumption.

Tracking fluid loss used to be a guessing game.

Today, coaches are stuck tracking performance on paper. They weigh an athlete before and after the workout, then try to plug those numbers into complicated formulas just to estimate sweat loss. It's time-consuming work that leaves room for calculation errors and vague estimates.

With this MCP, you simply input the start and end weights, along with other metrics like fluids consumed. The system handles the complex calculations and gives you a clear sweat rate and dehydration percentage. You get reliable data in seconds.

Get your precise replacement strategy using generate_replacement_strategy.

Manual planning requires cross-referencing activity levels against general guidelines, then adjusting the fluid and electrolyte amounts for specific hours. This process is prone to inconsistency and often feels reactive rather than predictive.

Now, you let your agent run generate_replacement_strategy. It builds a whole replacement plan tailored to your measured output, giving you proactive, step-by-step instructions for optimal recovery.

Hydration & Sweat Rate Calculator MCP (4 Tools)

Use these tools to calculate everything from your immediate fluid loss metrics to long-term pre-event loading protocols.

#	TOOL	DESCRIPTION
01	`assess_electrolyte_requirements`	Calculates the amount of sodium required based on sweat losses and activity intensity.
02	`calculate_sweat_metrics`	Determines your actual rate of fluid loss and percentage of dehydration from a completed session.
03	`generate_replacement_strategy`	Creates an actionable plan for maintaining proper hydration levels during future training periods.
04	`get_hyperhydration_protocol`	Outputs a detailed routine to load fluids and electrolytes into the body before a major event.

See It in Action

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

U I weighed 80kg before my 60-minute run and 79.2kg after, having drank 0.5L of water. What is my sweat rate?

Your sweat rate is 0.8 L/hour, with a dehydration level of 1.0%.

U Based on a sweat rate of 1.5 L/h, what should my hydration strategy be?

You should aim for a target hourly intake of 1.2 L to maintain stability.

U How much sodium do I need if my sweat rate is 2.0 L/h?

For a sweat rate of 2.0 L/h, you should target approximately 1200 mg of sodium per liter.

Frequently Asked Questions

01 **How does the Hydration & Sweat Rate Calculator use weight loss?**

The calculate_sweat_metrics tool uses your weight change between two points in time, factoring in fluid and sweat loss to give you a precise rate of dehydration.

02 **Do I need to know my sodium levels for the assess_electrolyte_requirements tool?**

No. The assess_electrolyte_requirements function calculates your necessary sodium intake based on your measured sweat rates and overall activity load, so you don't need prior testing.

03 Can I use this MCP to plan for a half-marathon?

Yes. You can use get_hyperhydration_protocol to build the necessary pre-race loading routine and then generate_replacement_strategy to manage nutrition during the race.

04 Is calculate_sweat_metrics the only tool for sweat rates?

No, but it's the main one. It determines your rate of fluid loss. For planning future intake, you should also look at generate_replacement_strategy.

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 `"hydration-sweat-rate-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

Hydration & Sweat Rate 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

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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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