MCP SERVER | NO CODE | CLOUD HOSTED

Periodization Planner MCP for AI Agents

Structuring Athletic Training Macrocycles for Competition Readiness

The Periodization Planner generates comprehensive athletic training macrocycles. Just input a target competition date and available weeks, and it maps out every phase—from preparatory building blocks to peak competitive taper. It helps coaches structure volume and intensity systematically so athletes hit their best performance on time.

A+ Quality Score 100/100

athletic-training | periodization | macrocycle | coaching | fitness-planning

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vinkius.com/mcp/periodization-planner

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.

Periodization Planner MCP

3 tools available
Cloud-hosted on Vinkius

Building a long-term athletic plan is complex; you're juggling timelines, physiological adaptation, and specific competition dates. This MCP handles that math for you. You tell your AI client the target event date and how many weeks you have, and it generates a complete macrocycle blueprint using proven models like Linear or Undulating periodization. It determines all necessary phases, including preparatory stages and crucial tapering periods. Need to know what volume or intensity is needed in a specific phase? The tool retrieves those exact training focuses for you. You can also get a precise, week-by-week breakdown of relative load progression percentages across the entire cycle. All this systematic planning means your athlete's physical adaptation stays maximized through every stage. Accessing these complex calculations via Vinkius makes it simple to use these advanced sports science tools right alongside your everyday work.

Core Capabilities

01 — Structure a full training macrocycle

Determines how the total available time must be divided into distinct phases and mesocycles based on athletic models.

02 — Determine phase-specific training metrics

Retrieves the required target volume, intensity, and primary focus for any given training phase.

03 — Project weekly load progression

Generates a week-by-week breakdown showing how relative training loads should increase or decrease over time.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/periodization-planner** — connect your AI agent in three steps.

01 Provide the AI client with three key inputs: the athlete's target event date, the total number of weeks available for training, and the desired periodization model (e.g., Linear or Block).

02 The system processes these variables to calculate a complete macrocycle structure, dividing time into preparatory, specific, competitive, and tapering phases.

03 You then request deeper data points—like phase attributes or week-by-week load percentages—to build the final, actionable training schedule.

The bottom line is that you get a scientifically validated, multi-phase training roadmap tailored precisely to your athlete's competition window.

Built For

This MCP is built for coaches and athletic staff who manage elite performance programs. If you struggle with mapping long-term training goals onto realistic weekly loads, this tool gives you the structure you need to keep your athletes peaking at the right time.

Strength & Conditioning Coach

Uses this MCP to validate and adjust macrocycles for seasonal athletic competitions, ensuring volume progression aligns with peak performance dates.

Athletic Director

Manages multiple sport programs and needs a standardized way to generate periodization plans that adhere to sports science best practices.

Sports Scientist

Validates complex training protocols by cross-referencing required phase attributes, like target volume and intensity, against the athlete's current physical profile.

What Changes When You Connect

01 You ensure physiological adaptation is maximized because the tool calculates a complete macrocycle breakdown, detailing all necessary preparatory and tapering phases.

02 Stop guessing about weekly loads. Use `generate_weekly_load_progression` to get a precise, week-by-week percentage guide for training intensity.

03 Know exactly what your athlete needs in each phase. The MCP uses `get_phase_attributes` to pinpoint target volume and intensity metrics instantly.

04 Build plans that actually work with the calendar. It calculates the full structure using `calculate_macrocycle_structure`, mapping time against a specific event date.

05 It saves hours of spreadsheet math, letting you focus on coaching and executing the plan instead of designing it.

Real-World Applications

Planning for a Championship Race

A coach needs to structure a 52-week training year leading up to a major championship. The agent uses the MCP to calculate the macrocycle structure, dividing the time into distinct phases and recommending a taper period that hits peak performance on race day.

Adjusting for an Unexpected Delay

An athlete's target event date shifts by six weeks. The coach uses the MCP to recalculate the entire macrocycle structure, shifting the phases and updating all necessary mesocycles immediately.

Validating Phase Intensity

A sports scientist needs confirmation on whether the planned preparatory phase is adequate. They use `get_phase_attributes` to confirm that the target volume for building an aerobic base meets current standards.

Monitoring Load Management Mid-Season

During a competitive block, the coach wants to ensure load progression is appropriate. The agent runs `generate_weekly_load_progression` to confirm that intensity dips are scheduled correctly before the next competition.

Patterns to Avoid

Using vague planning timelines

✗ AVOID

Just creating a generic list of 'Prep, Competition, Taper' without defining how many weeks each phase lasts or what specific load percentages are required.

✓ INSTEAD

Use the Periodization Planner MCP to first run `calculate_macrocycle_structure` with your target date. Then use `get_phase_attributes` and `generate_weekly_load_progression` to fill in the concrete, measurable targets for each phase.

Ignoring load progression

✗ AVOID

Designing a perfect macrocycle on paper but failing to account for the dip or rise in training volume week-to-week, leading to burnout or underperformance.

✓ INSTEAD

Run `generate_weekly_load_progression` immediately after defining your phases. This forces systematic load management and prevents overtraining right before a key event.

Mixing models incorrectly

✗ AVOID

Trying to combine elements from Linear, Undulating, and Block periodization without mathematical guidance, resulting in an unmanageable plan.

✓ INSTEAD

Start by letting the MCP handle the initial split. Use `calculate_macrocycle_structure` first, then select a single model (Linear, etc.) before drilling down into phase attributes.

The Right Fit

Use this MCP if your planning requires rigorous adherence to sports science models. If you need to map out complex, multi-month training plans—where the timing of volume changes is critical—this tool is essential. It lets you move beyond simple checklists and into genuine physiological modeling. Don't use it if you just need a basic list of workout types for a single day or week; those simpler tasks don't require macrocycle calculations. If your goal is simply to track attendance or record individual workouts, look for a general fitness logging tool instead.

Periodization Planner MCP: Structuring Athletic Training Macrocycles

Before this MCP, structuring an athlete's year was a messy process. Coaches spent days cross-referencing academic papers with complex spreadsheets—manually dividing weeks into phases and guessing the appropriate volume targets for each block. It was tedious, error-prone work that slowed down planning before the season even started.

Now, you input the target date and model choice. The MCP instantly calculates the entire macrocycle breakdown. You get a complete, scientifically sound blueprint that tells you not only which phases to hit (Preparatory, Specific), but also exactly what volume and intensity are required in each stage.

Periodization Planner MCP: Optimizing Training Load Progression

Without this tool, managing the week-to-week training load is guesswork. Coaches often fail to accurately predict the necessary dip or rise in relative load percentages required for peak performance, risking either severe overtraining or under-preparation.

The Periodization Planner resolves that by providing a granular `generate_weekly_load_progression` schedule. You get an actionable timeline showing exactly how much load must change every week to ensure the athlete peaks precisely on race day.

Periodization Planner: 3 Tools for Macrocycle Structure & Load Progression

These three tools allow you to build, analyze, and refine entire long-term athletic training cycles from start to finish.

#	TOOL	DESCRIPTION
01	`generate_weekly_load_progression`	Outputs a sequential breakdown of relative training load percentages for every week in the plan.
02	`get_phase_attributes`	Retrieves specific performance metrics, including target volume and intensity, for any defined phase.
03	`calculate_macrocycle_structure`	Determines the full division of available time into sequential training phases and mesocycles.

See It in Action

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

U I need a full training plan for my sprinter targeting nationals in 30 weeks, using the Block model.

Periodization Cycle: Sprinting (Block Model)

- **Phase I: Preparatory (Weeks 1-8):** Focus on foundational strength and aerobic base. Target Volume: High; Intensity: Low.
- **Phase II: Specific (Weeks 9-20):** Build speed endurance. Target Volume: Medium; Intensity: High.
- **Phase III: Competitive (Weeks 21-28):** Race specificity, maintaining high intensity with lower volume.
- **Phase IV: Tapering (Weeks 29-30):** Sharp reduction in load to ensure peak readiness.

Check the weekly progression for Weeks 1 through 30.

U What are the specific metrics I need during the competitive phase of a marathon plan?

Competitive Phase Attributes

For sustained endurance events, this phase requires balancing fatigue management with race-specific stimulus:

- **Target Volume:** Medium (High enough to maintain fitness but low enough to recover).
- **Target Intensity:** High (Mimicking goal pace efforts).
- **Primary Focus:** Maintaining physiological economy and high neuromuscular output.

This means you're training hard, but not constantly. Rest is key.

U Show me the load progression for 16 weeks using Daily Undulating periodization.

Daily Undulating Load Progression (16 Weeks)

Week	Relative Load %
1	70%
2	85%
3	70%
4	90%
...	...
13	60%
14	75%
15	50% (Taper)
16	30% (Race)

Frequently Asked Questions

01 **How does the Periodization Planner help me structure a year-round plan?**

The Periodization Planner takes your target event date and calculates all necessary phases, automatically mapping out preparatory blocks, specific training, and crucial tapering periods. It ensures you start weeks in advance with a scientifically sound blueprint.

02 **I don't know if my volume is right for the next phase; can this MCP help?**

Yes. You can use the tool to retrieve specific metrics like target volume and intensity for any given phase. This gives you concrete data points, moving your planning from educated guesswork to measurable science.

03 **Can I see how my training load needs to change week by week?**

Absolutely. The Periodization Planner generates a detailed weekly load progression schedule. It provides exact percentages for every single week, letting you manage fatigue and ensure peak performance at the right time.

04 **What if I have multiple training goals or sport types?**

The MCP is model-agnostic; it simply processes your chosen periodization model (Linear, Block, etc.) against your timeline. It focuses on structuring the macrocycle based on time and phase requirements, regardless of the specific sport.

05 **Is this better than just using a spreadsheet for planning?**

A spreadsheet is static; the Periodization Planner is mathematical. It handles the complex calculations—like determining how many weeks are allocated to 'Specific' training given a 52-week timeline—using established sports science models automatically.

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 `"periodization-planner": { "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

Periodization Planner 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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