MCP SERVER | NO CODE | CLOUD HOSTED

Sport Nutrition Timing MCP

Know exactly what to eat for peak performance.

Sport Nutrition Timing Calculator determines precise carbohydrate and protein timing for your training. Just input your workout details—start time, duration, and intensity level (low, medium, or high)—and get exact macronutrient targets for pre-, intra-, and post-workout windows to maximize energy and muscle recovery.

A+ Quality Score 100/100

sports-nutrition | macronutrients | workout-timing | performance | fitness-tracking

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vinkius.com/mcp/sport-nutrition-timing-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.

Sport Nutrition Timing Calculator MCP

2 tools available
Cloud-hosted on Vinkius

This MCP analyzes the science behind nutrient timing around intense physical activity. It gives you a detailed plan for managing your carbs and proteins during training sessions. When you connect this MCP via Vinkius, your AI client handles all the complex calculations. You simply tell it when and how hard you're training, and the tool figures out exactly what you need to eat at three critical points: hours before you start, if the workout lasts over an hour, and right after you finish. This keeps energy stable for performance and ensures your muscles get the specific nutrients they need to rebuild.

Core Capabilities

01 — Determine pre-workout fueling

Calculates the necessary macronutrients and optimal meal timing hours before a session begins.

02 — Calculate in-session fuel needs

Determines the required rate of carbohydrate intake per hour for workouts lasting more than 60 minutes.

03 — Define recovery targets

Sets specific protein and carb goals needed within the critical window immediately following exercise to support muscle repair.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/sport-nutrition-timing-calculator** — connect your AI agent in three steps.

01 Input your training start time, total duration, and perceived intensity (Low, Medium, or High) into your AI client.

02 The MCP runs the data through nutritional models to calculate specific gram targets for each phase of your workout cycle.

03 Your agent receives a clear breakdown detailing what you should eat when, whether it's hours out, during the session, or immediately after cooling down.

The bottom line is that you get a precise nutritional schedule tailored to the metabolic demands of your specific training session.

Built For

Athletes and fitness enthusiasts who are tired of guessing what to eat around their workouts. If you're constantly adjusting macros based on vague advice, this is for you.

Endurance Athlete

Needs to know how many carbs per hour they must consume during a marathon training run to prevent bonking.

Strength Coach/Trainer

Manages clients' fueling schedules, ensuring proper pre- and post-workout meals for optimal muscle protein synthesis.

Sports Nutritionist

Calculates periodized macro adjustments based on a client's training load across multiple days of intense activity.

What Changes When You Connect

01 Stop guessing about fueling. The tool provides precise carbohydrate and protein gram targets based on your intensity level, so you know exactly what to consume before, during, and after training.

02 Avoid energy crashes by calculating necessary intake rates for long sessions over 60 minutes, ensuring steady glucose levels are maintained throughout the workout.

03 Optimize muscle recovery. It defines the critical anabolic window post-exercise with specific targets needed to maximize protein synthesis, which is better than just eating 'protein.'

04 Plan ahead accurately. Use the pre-workout calculation to establish two distinct feeding windows—one 3–4 hours out for base energy, and one short burst closer to activity.

05 Simplify complex science. Instead of reading dense academic papers, you get a straightforward, actionable meal plan directly from your agent.

Real-World Applications

Recovering after a long race

A runner finishes a 10k race and wonders what to eat next. They ask their agent about post-workout nutrition, and the MCP provides specific carb and protein targets for the 30–60 minute recovery window.

Planning an intense lift day

A powerlifter is gearing up for a high-intensity session. They use the pre-workout tool to get timing advice, learning they need two separate meals—one three hours out and one short snack closer to lifting.

Maintaining energy during a tough workout

A physical therapist schedules a 90-minute resistance session. The agent uses the intra-workout tool, which advises them they need a specific amount of carbohydrates per hour to maintain power output for the full duration.

Adjusting nutrition based on intensity

A client has varying workouts that week. They use the pre-workout calculation to see that their nutritional needs are completely different for a low-intensity warm-up versus a high-intensity interval day.

Patterns to Avoid

Eating 'enough' food

✗ AVOID

Simply eating a protein shake and an apple before a long run, without considering the timing or required carb load for sustained energy.

✓ INSTEAD

Use the pre-workout needs tool to map out specific meals. It will tell you if you need oats three hours out *and* bananas 30 minutes out, ensuring your body gets fuel at the right time.

Ignoring session length

✗ AVOID

Assuming that because a workout is over 60 minutes, no extra fueling is needed. This leads to mid-session energy depletion and poor performance.

✓ INSTEAD

Run the calculation for intra-workout needs immediately when scheduling a long session. It will tell you exactly how many grams of carbs per hour you need to prevent glycogen burnout.

Overthinking recovery

✗ AVOID

Wasting time debating what 'recovery' means, and eating an unbalanced meal that doesn't hit the necessary protein/carb ratio.

✓ INSTEAD

Trust the post-workout guidance. It gives you clear targets for muscle synthesis in the vital 30 to 60 minutes after training.

The Right Fit

Use this MCP if your goal is metabolic precision—you need quantifiable, timing-specific nutrient intake data (e.g., 'I need X grams of carbs per hour'). Don't use it if you are just looking for general fitness advice or macro goals without considering the workout timeline. If you only want a basic list of healthy foods, that's fine, but if you need to know *when* and *how much*, this is the tool. Remember, the MCP doesn't replace a nutritionist; it gives them data they can use. It calculates needs based on start time, duration, and intensity; generic calorie calculators won't cut it.

The Guesswork of Pre-Workout Fueling

Today, planning for a big workout means relying on general guidelines: 'eat complex carbs three hours before.' You end up eating whatever is available—oats one day, toast the next—and you never know if that combination actually matches your body's immediate energy needs or if it leaves you with a mid-session crash.

With this MCP, you input only your training start time and intensity. The system figures out two distinct fueling windows for you: what to eat hours before (for sustained base energy) and what quick source of glucose you need right up until the warm-up starts. You get actionable timing advice, not just a vague list.

Calculate Pre-Workout Needs

Manual planning involves looking at multiple diet plans and trying to cross-reference carb loading schedules with specific workout times. You constantly have to check: Is this meal appropriate for a high-intensity session starting in four hours? What if the intensity changes?

The MCP centralizes that logic. It instantly determines your precise macronutrient targets, whether you're aiming for peak performance or just warming up. It removes the guesswork and gives you a concrete eating plan.

Sport Nutrition Timing Calculator: 2 Tools

These tools let you calculate exactly when and how much carbohydrate and protein you need around any physical activity, ensuring peak energy levels.

#	TOOL	DESCRIPTION
01	`calculate_intra_workout_needs`	Figures out the necessary carbohydrate replenishment rate for sustained, long-duration exercise.
02	`calculate_pre_workout_needs`	Determines ideal macronutrient targets and optimal meal timing hours before a training session begins.

See It in Action

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

U I have a high-intensity training session starting at 2023-10-27T14:00:00Z. What should my pre-workout nutrition look like?

For your high-intensity session, you should follow two windows: 3-4 hours before (Window 1) and 30-60 minutes before (Window 2). Your targets will include specific carbohydrate and protein grams to support the metabolic demand. Suggested foods include oats for Window 1 and bananas or rice cakes for Window 2.

U I am training for 90 minutes at medium intensity. Do I need intra-workout nutrition?

Yes, since your session is longer than 60 minutes, you require intra-workout nutrition. You should aim for a carbohydrate range of approximately 30-6 grams per hour to maintain energy levels.

U What are the macronutrient targets for a low-intensity session lasting 45 minutes?

For a 45-minute low-intensity session, intra-workout nutrition is not required. Your focus should be on the pre-workout windows to ensure adequate energy availability without excessive intake.

Frequently Asked Questions

01 **How does Sport Nutrition Timing Calculator calculate pre-workout needs?**

The MCP analyzes your training schedule to set two critical feeding windows: one 3–4 hours out for steady energy, and a shorter window 30–60 minutes before for rapid glucose availability.

02 **Do I need calculate_intra_workout_needs if my workout is only 45 minutes?**

No. The MCP is designed to identify when intra-workout nutrition isn't necessary, focusing your attention on the pre-workout windows instead.

03 **What information does calculate_pre_workout_needs require?**

You must provide the training start time, duration, and intensity level (Low, Medium, or High) for accurate results.

04 **Can I use Sport Nutrition Timing Calculator for different types of sport?**

Yes. The MCP uses generalized metabolic principles but adjusts carbohydrate and protein targets based on the specific intensity profile you enter.

05 **Is this better than just looking up a general macro guide online?**

Absolutely. A general guide can't account for your unique timeline. This MCP provides precise, time-sensitive guidance that adapts to whether you are training hard or lightly.

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 `"sport-nutrition-timing-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

Sport Nutrition Timing 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

DOCUMENT INFORMATION

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MCP Server	Sport Nutrition Timing Calculator MCP
Server ID	`019efdb7-5038-718f-975c-ae49b92f6aa4`
Platform	Vinkius Cloud for AI Agents
Endpoint	`https://edge.vinkius.com/{token}/mcp`

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