MCP SERVER | NO CODE | CLOUD HOSTED

Weight Loss Compounder MCP for AI Agents

Accurate Metabolic Modeling for Weight Tracking Goals

Weight Loss Compounder simulates realistic weight loss by modeling metabolic slowdown, going beyond simple linear calculators. This MCP accounts for the biological reality that your Total Daily Energy Expenditure (TDEE) drops as you lose mass, accurately projecting progress deceleration. It gives detailed weekly and overall trajectory estimates based on your starting weight, target goal, and daily calorie intake.

A+ Quality Score 100/100

weight-loss | metabolism | tdee | fitness-projection | calorie-deficit

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vinkius.com/mcp/weight-loss-compounder

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.

Weight Loss Compounder MCP

3 tools available
Cloud-hosted on Vinkius

Need a realistic view of how long it takes to reach your weight goals? This MCP simulates physiological reality. Most basic calculators assume linear weight loss, which is wrong because your body burns fewer calories as you get lighter. The Weight Loss Compounder fixes that. It models the natural deceleration curve—the point where progress slows down—by factoring in metabolic efficiency changes.

Your AI client uses this MCP to generate detailed projections. You can ask it to calculate a summary projection, which gives you an estimated timeline for your goal. For more granular detail, it runs a weekly trajectory report, showing exactly how much weight change and caloric deficit occurs week-by-week. Furthermore, it analyzes metabolic efficiency directly, letting you see how quickly your body's rate of loss is slowing down relative to your goals. If you're already connected to Vinkius, accessing this tool means having sophisticated physiological modeling available right alongside thousands of other industry tools.

The result isn't just a number; it's a detailed view of the entire process.

Core Capabilities

01 — Calculate Overall Progress Summary

Generates an estimated timeline and summary projection for reaching a target weight given starting metrics.

02 — Model Weekly Weight Changes

Provides a detailed, week-by-week breakdown of expected weight loss and caloric deficits until a goal is met.

03 — Analyze Metabolic Rate Decline

Quantifies the rate at which your body's energy expenditure decreases as you lose weight, helping predict slowdown points.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/weight-loss-compounder** — connect your AI agent in three steps.

01 Start by providing your agent with key data: your current weight, your target weight, and your expected daily caloric intake.

02 The MCP runs a physiological simulation, calculating the decreasing Total Daily Energy Expenditure (TDEE) based on mass loss. It projects how that metabolic slowdown affects your weekly progress.

03 You receive detailed reports, including overall summary estimates or deep week-by-week trajectories showing the expected weight change and deficit at each interval.

The bottom line is you get a scientifically accurate prediction of your weight loss journey that accounts for metabolic reality, not just straight lines on a graph.

Built For

This MCP helps fitness professionals and biohackers who need precise, science-backed metrics. It's for anyone tired of simple calculators that lie about the difficulty of sustained weight loss by ignoring metabolic slowdown.

Certified Personal Trainer

Uses this MCP to give clients realistic timelines and manage expectations, showing them exactly when their rate of progress will naturally slow down.

Registered Dietitian

Determines if a client's current caloric deficit is appropriate for their weight and how the resulting metabolic shift impacts their long-term health goals.

Biohacker / Self-Tracker

Runs simulations to stress-test different diet plans, understanding precisely how much a specific calorie adjustment will impact future TDEE.

What Changes When You Connect

01 Stop guessing. Instead of relying on linear estimates, use the `get_weekly_trajectory` tool to see a precise, week-by-week breakdown of your expected weight changes and required deficits.

02 Understand the science behind plateaus. The MCP analyzes metabolic efficiency so you know exactly when and why your progress will naturally slow down.

03 Get a full picture fast. Run `calculate_projection_summary` to get an immediate, high-level estimate of how long it'll take to reach your goal without diving into dozens of spreadsheets.

04 Refine your nutrition plan. By running these simulations, you can adjust your daily caloric intake until the projected rate of loss matches your personal goals.

05 Know what to expect. This MCP models Total Daily Energy Expenditure (TDEE) drops accurately, giving you a realistic view far beyond basic calculators.

Real-World Applications

Planning for a Marathon

A user needs to drop 20 pounds before a race. They ask their agent to run the projection through `get_weekly_trajectory`. The result shows they need to maintain a specific deficit of 1400 kcal/week, and it flags that by week 8, their metabolic rate will slow down significantly, requiring them to adjust their diet plan.

Adjusting for an Unexpected Calorie Surplus

A user overeats one day. They input the data into `analyze_metabolic_efficiency` and immediately see that the temporary surplus will not derail their entire progress, but they must increase their deficit slightly to compensate for the metabolic dip.

Setting a Long-Term Body Goal

A user wants to hit 150 lbs over six months. They use `calculate_projection_summary` and see that while it's possible, they need to adjust their target deficit slightly because the model predicts natural deceleration will be steeper than expected.

Comparing Different Diet Methods

The user wants to compare a 1800-calorie diet vs. a 2000-calorie diet. They run two separate simulations, and the MCP shows that the lower calorie count results in a faster initial loss but hits metabolic slowdown sooner.

Patterns to Avoid

Assuming Linear Progress

✗ AVOID

A user uses a simple calculator that assumes they lose 1 lb every week regardless of their body composition. This leads to setting an unrealistic, aggressive timeline.

✓ INSTEAD

Always use the Weight Loss Compounder MCP for projections. The tool correctly models how your metabolism drops as you get lighter, giving you timelines based on physiological reality.

Ignoring Metabolic Slowdown

✗ AVOID

A trainer tells a client they just need to eat 500 fewer calories forever. Without accounting for TDEE changes, this plan will fail once the client passes key weight milestones.

✓ INSTEAD

Consult your agent using `analyze_metabolic_efficiency`. This tool pinpoints exactly when and how much the rate of loss will slow down, making the plan sustainable.

Getting a Single Number Estimate

✗ AVOID

Accepting only a single projected date for a goal. These estimates lack necessary detail regarding weekly fluctuations or required adjustments.

✓ INSTEAD

Always run `get_weekly_trajectory`. This provides the detailed, actionable week-by-week data you need to actually make changes and stay on track.

The Right Fit

Use this MCP if your goal planning requires scientific rigor. If you are a trainer or dietitian who needs to manage client expectations with accurate metabolic projections, this is essential. You *must* use it when assessing long-term weight loss because basic calculators ignore the natural deceleration of TDEE.

Don't use it if you just need a quick 'ballpark estimate' for fun

conversation; there are simpler tools for that. Also, don't rely on this MCP to tell you *what* diet to follow—it only models the outcome based on your inputs. For specific meal planning or exercise routines, look at dedicated nutrition or fitness tracking tools instead.

Weight Loss Compounder: Modeling Metabolic Efficiency for Fitness Planning

Right now, calculating weight loss progress involves manually graphing weight changes and constantly adjusting the estimated Total Daily Energy Expenditure (TDEE) in a spreadsheet. You have to calculate how much your metabolism slows down after every 10 pounds lost, which is tedious, error-prone, and takes hours.

With this MCP, you simply ask your agent for a projection. It automatically factors in the biological reality of metabolic deceleration. The result isn't just a date; it's a detailed curve showing how your body adapts as you lose weight, giving you actionable data on where the plateaus will hit.

Weight Loss Compounder: Tracking Weekly Weight Trajectories for Dietitians

Before this MCP, a dietitian would run multiple scenarios—high-deficit, moderate-deficit, etc.—and manually plot the resulting weight curves to advise on sustainable goals. This process is slow and involves juggling multiple complex formulas.

Now, running `get_weekly_trajectory` gives you that entire spectrum instantly. You can show a client exactly how their body will respond over 20 weeks with a specific calorie intake, allowing for immediate, data-driven consultation.

Weight Loss Compounder: 3 Tools for Metabolism & Weight Projection

Use these tools to calculate total projected timelines, detailed weekly trajectories, or analyze the specific rate of your body's metabolic efficiency decline.

#	TOOL	DESCRIPTION
01	`analyze_metabolic_efficiency`	Determines and analyzes the rate of deceleration in weight loss efficiency based on provided metrics.
02	`calculate_projection_summary`	Generates a high-level summary predicting your total time needed to hit a target weight.
03	`get_weekly_trajectory`	Provides a detailed, step-by-step projection of expected weight loss and deficits over multiple weeks.

See It in Action

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

U If I start at 300 lbs and want to hit 250 lbs eating 1900 calories daily, what's the plan?

Weight Loss Projection Summary

- **Start Weight:** 300.0 lbs
- **Target Weight:** 250.0 lbs
- **Estimated Duration:** Approximately 16 weeks.
- **Key Insight:** The metabolic slowdown is projected to peak around week 10, requiring a slight increase in deficit or activity to maintain the target pace.

U Show me my progress if I start at 235 lbs and aim for 210 lbs with 1700 calories.

Weekly Trajectory Report

WEEK	START WEIGHT	END WEIGHT	DEFICIT (KCAL)
1	235.0 lbs	231.5 lbs	1450
2	231.5 lbs	228.0 lbs	1400
...	...	...	...
9	212.0 lbs	209.0 lbs	1150

(Simulation continues until target is reached.)

U How does my metabolic rate change going from 280 to 240 lbs on 2200 calories?

The analysis shows a total metabolic deceleration of about 13.5% over this journey. This means that while you'll lose weight steadily, the energy cost of maintaining your body will drop significantly by the time you reach 240 lbs compared to week one.

Frequently Asked Questions

01 **How does the Weight Loss Compounder handle metabolic slowdown?**

It accounts for the fact that your body burns fewer calories as you get lighter. Instead of showing a straight line, it uses science to model how your Total Daily Energy Expenditure (TDEE) drops, giving you realistic progress estimates.

02 **Can I use Weight Loss Compounder to plan my weight loss for a marathon?**

Yes. You can input your starting and target weights along with your planned caloric intake. The resulting trajectory helps identify potential plateaus weeks in advance, so you know when to adjust your diet or training.

03 **Is the Weight Loss Compounder better than a simple online calculator?**

It is much better. Simple calculators assume constant energy burn rates. This MCP provides advanced modeling that predicts how metabolic efficiency changes, giving you actionable and accurate data points for your plan.

04 **What inputs does the Weight Loss Compounder need from me?**

You must provide your current weight, your final target weight, and the daily caloric intake amount you plan to maintain. The more precise these numbers, the better the projection will be.

05 **Does this MCP only give an estimate, or is it accurate?**

It provides a highly sophisticated, data-driven simulation based on established physiological models. It shows you what *should* happen given your inputs, helping guide real behavioral changes.

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 `"weight-loss-compounder": { "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

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

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