

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

Knee Stability Surfing Assessment MCP

Predict injury risk and tailor training to your knee health.

Knee Stability Surfing Assessment MCP provides diagnostic tools to evaluate ligament integrity and muscle balance. It helps you understand how specific surfing maneuvers impact your knee stability and provides data to guide your training or recovery protocols.

surfing

knee-stability

injury-prevention

biomechanics

sports-science



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.

Knee Stability Surfing Assessment MCP

4 tools available

Cloud-hosted on Vinkius

You can use this MCP to get a clear picture of your knee health before you hit the water. It focuses on the specific biomechanical stresses surfers face, particularly rotational torque during maneuvers. Instead of guessing if your legs are ready for a heavy session, you can input your physical indicators to get a stability profile. You'll see exactly where your muscle imbalances lie and how much risk you're taking when performing specific turns or snaps. It's a practical way to bridge the gap between physical assessment and actionable training adjustments. Whether you're recovering from a previous injury or just trying to stay proactive, this tool gives your AI client the data it needs to suggest specific strengthening or rehab paths.

Core Capabilities

01 — Stability Profiling

Your agent uses this to build a baseline of your knee health.

02 — Imbalance Detection

The AI uses this to find specific muscle weaknesses in your legs.

03 — Maneuver Risk Prediction

Your client uses this to calculate how much torque a specific move puts on your joints.

04 — Protocol Categorization

The agent uses this to sort you into training or rehab groups.

One Click on Vinkius — From Prompt to Execution

Available at vinkius.com/en/ai-agent-connect/knee-stability-surfing-assessment — connect your AI agent in three steps.

- 01

Connect the MCP to your AI client like Claude or Cursor via Vinkius.
- 02

Provide your physical indicators like ligament status and muscle dominance.
- 03

The AI uses the tools to run stability and torque calculations.
- 04

Receive specific training or risk recommendations based on the results.

Connecting to this MCP gives your AI client immediate access to specialized biomechanical tools.

Built For

This MCP is built for people who need to manage knee health in high-impact environments.

Surfers

Use it to check if your knees can handle specific maneuvers.

Physical Therapists

Hand off data to your AI client to help design rehab protocols.

Strength Coaches

Use the muscle imbalance data to build targeted lower body programs.

What Changes When You Connect

- 01

Identifies specific muscle weaknesses to target in training.
- 02

Predicts the impact of rotational torque on your joints.
- 03

Categorizes your stability to guide recovery steps.

04 Provides a data-driven way to assess injury risk.

Real-World Applications

Pre-Session Check

Check your stability tier before a heavy swell to see if you should stick to certain maneuvers.

Injury Prevention

Calculate torque risk to avoid maneuvers that exceed your current stability limits.

Rehab Planning

Use muscle imbalance data to guide your physical therapy exercises.

Training Optimization

Adjust your gym routine based on your specific stability profile.

4 Tools Available

#	TOOL	DESCRIPTION
01	analyze_knee_stability	This tool generates a full stability profile and risk assessment based on your physical indicators.
02	evaluate_muscle_imbalance	Use this to isolate and measure specific weaknesses in your lower limb muscles.
03	calculate_torque_risk	This tool predicts how specific surfing maneuvers will impact your knee stability.
04	get_stability_tier	This tool places you into a specific category to help determine your training or recovery protocols.

See It in Action

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

U Assess my knee stability. My ligaments are intact, my muscles are quad-dominant, my movement is neutral, and I expect 50Nm of torque.



Your stability score is 75. Your injury risk is Low, but because you are quad-dominant, you should prioritize hamstring strengthening.

U Calculate the risk for a maneuver with 80Nm of torque if my stability score is 40 and my ligaments are mildly lax.



The risk multiplier is 2.5. You have reached a critical threshold; avoid sharp snaps and stick to controlled carves.

U What is my stability tier if my score is 30 and my risk is High?



You are classified as a Tier 3 (Compromised Stability) user. We recommend a Rehab protocol with a focus on neuromuscular control.

Frequently Asked Questions

01 How do I use this MCP with my AI client?

You connect once through the Vinkius platform. After that, any MCP-compatible client like Claude or Cursor can use the tools directly.

02 What kind of data do I need to provide?

You'll need to provide physical indicators such as ligament integrity, muscle dominance, movement patterns, and expected torque levels.

03 Can this predict if I'll get injured during a specific surf move?

The calculate_torque_risk tool determines how specific maneuvers will impact your knee stability based on your current profile.

04 What are the stability tiers?

The get_stability_tier tool categorizes you into groups to help determine if you need standard training or specific rehab protocols.

05 Does this replace a physical therapist?

No. This MCP provides data and risk assessments that you can use to inform your discussions with professionals or to guide your own training.

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>"knee-stability-surfing-assessment": { "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

Knee Stability Surfing Assessment 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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Server ID	01a0a3f7-afc6-726d-b194-b0696ab8641a
Platform	Vinkius Cloud for AI Agents
Endpoint	<code>https://edge.vinkius.com/{token}/mcp</code>

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