MCP SERVER | NO CODE | CLOUD HOSTED

Blood Pressure Classifier MCP for AI Agents

Interpreting Blood Pressure Readings and Detecting Hypertension Trends

The Blood Pressure Classifier MCP analyzes cardiovascular data by classifying readings according to AHA/WHO standards. It detects dangerous spikes in blood pressure, tracks historical patterns for rising or falling trends, and issues specific health alerts, helping users monitor and understand their hypertension risk.

A+ Quality Score 100/100

blood-pressure | hypertension | health-tracking | cardiovascular | medical-analysis

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vinkius.com/mcp/blood-pressure-classifier

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.

Blood Pressure Classifier MCP

3 tools available
Cloud-hosted on Vinkius

Managing blood pressure is about more than just recording numbers; it's about interpreting what those numbers mean over time. This MCP gives your AI client the tools to do exactly that. You can feed raw measurements into the system and get an instant classification, telling you if a single reading falls within normal range or signals Stage 2 hypertension. But the real value is in the trend analysis. Instead of just seeing static data points, the system analyzes historical records—the last six months of readings, for example—and identifies patterns: are your numbers steadily creeping up? Are they dropping too fast? The MCP also evaluates overall health alerts, flagging immediate risks like potential hypertensive crises. You can connect this powerful capability through Vinkius to bring professional-grade cardiovascular analysis directly into your workflow, letting your agent handle the heavy lifting of medical interpretation.

Core Capabilities

01 — Classify a single reading

Determine if an immediate blood pressure measurement falls into a specific risk category based on established guidelines.

02 — Analyze historical patterns

Review multiple measurements over time to identify measurable trends, such as gradual increases or decreases in blood pressure.

03 — Identify critical health alerts

Evaluate current and past data points against known medical thresholds to flag potential emergencies or dangerous spikes.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/blood-pressure-classifier** — connect your AI agent in three steps.

01 Provide your agent with the specific blood pressure measurements, including the date and time for accuracy.

02 The MCP processes these readings by running them through established AHA/WHO guidelines to assess both current status and historical context.

03 Your AI client receives a clear report detailing classifications, trend patterns (e.g., 'Rising'), and any immediate health alerts.

The bottom line is that you get actionable, clinically relevant insights instead of just raw data points.

Built For

This MCP serves clinical staff and advanced patient trackers who deal with chronic cardiovascular monitoring. It's for the nurse reviewing charts late at night or the patient managing their own metrics, needing reliable interpretation of complex health data.

Registered Nurse

Uses this MCP to quickly assess incoming vital signs from multiple patients, flagging those who need immediate attention due to dangerous blood pressure spikes or concerning trend shifts.

Cardiology Patient

Connects their personal historical readings and asks the agent to analyze patterns. They can then discuss specific trends with their doctor, backed by data interpretation.

Health Data Analyst

Integrates this MCP into a larger monitoring dashboard to automatically process high volumes of patient-generated measurements for systemic risk pattern detection.

What Changes When You Connect

01 Instead of just seeing numbers, you get a classification. The `classify_single_reading` tool instantly tells you if the pressure is normal, elevated, or hypertensive, making interpretation fast.

02 Pinpoint risk patterns with `calculate_trend_analysis`. This function moves beyond single readings to show if your blood pressure is consistently rising or falling over weeks of data.

03 Avoid missing emergencies. The `evaluate_health_alert` tool acts as a safety net, instantly flagging readings that suggest a hypertensive crisis and demanding immediate attention.

04 Reduce manual review time for clinical staff. Your agent handles the tedious comparison against AHA/WHO standards across dozens of patient records.

05 Gain confidence in your data. By basing analysis on recognized medical guidelines, you ensure every insight is clinically sound.

Real-World Applications

Determining if a single reading is safe

A patient enters an unusual reading (145/92 mmHg) and asks their agent what it means. The agent uses `classify_single_reading` and immediately reports that the measurement is classified as Stage 2 Hypertension, advising them to consult a doctor.

Checking for immediate emergencies

A nurse receives an alert about a patient reading of 180/120 mmHg. The agent runs `evaluate_health_alert` and immediately flags it as a 'Hypertensive Crisis,' ensuring the care team knows to seek emergency help.

Spotting an escalating health risk

A physician uploads six months of patient data. The agent uses `calculate_trend_analysis` and discovers a steady 'Rising' pattern in the diastolic readings, alerting the care team to intervene before a crisis occurs.

Patterns to Avoid

Treating data points in isolation

✗ AVOID

Simply looking at a spreadsheet of random blood pressure readings without context. You might miss the fact that the user's numbers are trending upwards, thinking every spike is just an isolated event.

✓ INSTEAD

Don't rely on single measurements. Use `calculate_trend_analysis` to view historical data patterns and truly understand if your blood pressure is showing a consistent upward or downward movement over time.

Ignoring established medical standards

✗ AVOID

Relying only on vague advice or general guidelines that aren't tied to specific, accepted medical bodies. This can lead to misclassification and delayed care.

✓ INSTEAD

Always use the MCP because it runs classifications through recognized rules like AHA/WHO standards via `classify_single_reading` and `evaluate_health_alert`, ensuring every alert is medically grounded.

Overlooking potential crises

✗ AVOID

Seeing high readings but failing to recognize the specific criteria for an immediate emergency like a hypertensive crisis. The warning signs are missed.

✓ INSTEAD

Routinely run `evaluate_health_alert` on all recorded data sets. This tool is specifically designed to flag dangerous spikes and potential crises when they appear.

The Right Fit

Use this MCP if your primary need is interpreting cardiovascular metrics, not just storing them. You need a system that understands the difference between a high single reading and a concerning trend pattern. This tool excels at running analyses against established medical guidelines (AHA/WHO), making it perfect for clinical monitoring and patient self-management. However, don't use this if you only need to generate random charts or perform basic data entry; those are simpler database tasks. If your goal is general wellness tracking without specific blood pressure metrics, a different health MCP might serve you better. This MCP shines when the core question involves 'Is this dangerous?' or 'Are these numbers getting worse?'

Blood Pressure Classifier: Understanding Cardiovascular Risk with AHA/WHO Standards

Today, monitoring cardiovascular health means manually cross-referencing readings against complex medical guidelines. You're stuck comparing systolic and diastolic numbers to generic charts, trying to determine if a reading is merely 'high' or if it signals an actionable, specific risk stage like Stage 2 Hypertension. This process involves lots of copy-pasting data into different reference sheets just to get one number right.

With the Blood Pressure Classifier MCP, that manual cross-referencing disappears. You input the raw numbers, and the tool automatically runs them through American Heart Association (AHA) and WHO guidelines. The result isn't just a color code; you get a definitive classification of risk, allowing your agent to tell you exactly what the reading means in clinical terms.

Blood Pressure Classifier: Tracking Long-Term Hypertension Trends

Manually tracking trends requires pulling data from multiple visits—sometimes weeks apart. You'd have to build pivot tables and visually inspect if the

This MCP changes that by running `calculate_trend_analysis`. Instead of looking at individual dates, the tool processes the entire

numbers are steadily creeping up or falling, a process prone to human error and tedious review.

sequence of readings and gives you a clear pattern: 'Rising,' 'Falling,' or 'Stable.' You immediately know if intervention is needed.

3 Blood Pressure Analysis Tools for Cardiovascular Health Tracking

These tools allow your agent to check single measurements, analyze long-term patterns, or flag immediate health crises based on professional medical guidelines.

#	TOOL	DESCRIPTION
01	`evaluate_health_alert`	Checks current and historical blood pressure data against known criteria to identify potential immediate health risks or crises.
02	`classify_single_reading`	Assigns a specific risk stage (e.g., normal, elevated, Stage 2) to one isolated blood pressure measurement.
03	`calculate_trend_analysis`	Analyzes sequences of recorded readings over time to determine if the user's blood pressure is generally increasing or decreasing.

See It in Action

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

U What does 160/100 mmHg mean for my heart health?

Blood Pressure Classification Report

- **Reading:** 160/100 mmHg
- **Classification:** Stage 2 Hypertension (Severe)
- **Action Recommended:** This reading exceeds guidelines for routine management. Please contact your primary care physician immediately.

Remember, high blood pressure is a serious risk factor that requires professional oversight.

U Analyze these readings: [120/80], [125/82], [130/85]. What's the trend?

Trend Analysis Results

The pattern detected across these three measurements is **Rising**.

- Systolic pressure increased by an average of 5 mmHg per reading.
- Diastolic pressure increased by an average of 3 mmHg per reading.

This sustained upward movement suggests a need for lifestyle adjustments and follow-up testing.

U Check if a 190/115 is an emergency.

🚨 **HEALTH ALERT: Potential Crisis Detected**

- **Reading:** 190/115 mmHg
- **Assessment:** This reading meets the criteria for a Hypertensive Crisis.
- **Urgency Level:** HIGH. Seek medical attention immediately and do not wait for your next scheduled appointment.

Frequently Asked Questions

01 **How accurately does the Blood Pressure Classifier handle different blood pressure readings?**

The MCP uses established American Heart Association (AHA) and WHO guidelines, providing a high degree of accuracy for classifying single measurements. It tells you if a reading is normal, elevated, or in a severe range.

02 **Can the Blood Pressure Classifier detect if my blood pressure is getting worse over time?**

Yes, that's exactly what it does. By using trend analysis on historical data, the MCP can identify subtle but serious patterns, like a slow and steady rise in your numbers, which signals a need for preventive care.

03 **What happens if I input readings that are too old or sparse?**

The system will process what data you provide. However, the accuracy of trend analysis relies on consistent readings over time; providing more complete data gives the agent a clearer picture of your true health pattern.

04 **Is this MCP useful for diagnosing hypertension?**

No, this tool does not diagnose conditions. It analyzes and classifies measurements against established guidelines to alert you to potential risks (like Stage 2 Hypertension) that require a professional medical evaluation.

05 **Does the Blood Pressure Classifier handle emergencies or spikes?**

Yes, it includes specific tools designed to evaluate health alerts. If your reading hits dangerous thresholds, the MCP will flag it instantly and tell you that immediate medical attention is required.

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 `"blood-pressure-classifier": { "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

Blood Pressure Classifier 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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