MCP SERVER | NO CODE | CLOUD HOSTED

Pediatric Dose Calculator MCP

Verify complex drug dosing safety instantly.

Pediatric Dose Calculator determines precise, weight-based medication dosages for children. This MCP first retrieves pharmacological constraints from specific drugs, then calculates the exact single dose needed based on a child's current weight. It also evaluates complex dosing schedules to flag potential overdose risks or deviations outside safe daily therapeutic limits.

A+ Quality Score 100/100

pediatrics | dosage | pharmacology | safety | medication

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vinkius.com/mcp/pediatric-dose-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.

Pediatric Dose Calculator MCP

3 tools available
Cloud-hosted on Vinkius

Calculating pediatric medications requires intense precision; margins of error aren't an option. This MCP gives you the safety net you need, determining correct dosages for kids based on their weight and specific drug constraints. You simply input the medication details and the child's weight. The system first checks the drug's minimum and maximum allowable thresholds. Then, it calculates the immediate single dose needed. For complex regimens involving multiple doses throughout the day, it assesses the total daily intake to make sure the dosage stays within safe limits. Vinkius hosts this MCP so your AI client can access this critical calculation engine whenever you need it.

Core Capabilities

01 —

02 —

03 —

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/pediatric-dose-calculator** — connect your AI agent in three steps.

01 You provide the medication name and the relevant pharmacological parameters to check against safety thresholds.

02 The system calculates the specific single dose needed for a child based on their weight input.

03 It then reviews the entire dosing schedule, flagging any total daily intake that exceeds established safety limits.

The bottom line is you get immediate confirmation that the proposed drug regimen is within safe therapeutic parameters for a pediatric patient.

Built For

Pediatricians, Nurse Practitioners, and Clinical Pharmacists use this when they need to quickly validate complex medication regimens. They hate manually cross-referencing weight charts with drug guidelines while working under time pressure.

Pediatrician

Determining the optimal starting dosage and ensuring that a multi-drug regimen adheres to safety standards for a small child.

Clinical Pharmacist

Reviewing prescription orders to confirm that calculated single doses and total daily intakes meet strict pharmacological guidelines.

Nurse Practitioner

Quickly verifying complex dosing schedules, especially when switching medications or treating chronic conditions across multiple days.

What Changes When You Connect

01 Know the hard limits immediately. You can use the `get_drug_dosage_specs` tool to pull minimum and maximum mg/kg thresholds for any medication, preventing initial dose errors.

02 Avoid calculation mistakes with single doses. The `calculate_single_dose` tool takes a child's weight and spits out the exact amount needed for one administration, saving manual math time.

03 Catch dangerous overdosages before they happen. Use `evaluate_dosage_regimen` to check an entire week's schedule against safety parameters, flagging total daily intake issues.

04 Simplify complex charting. Instead of referencing multiple drug handbooks, your AI client handles the comparison between weight, single dose, and full regimen limits in one go.

05 Reduce risk across departments. This MCP provides a consistent, standardized calculation method, whether you're working on inpatient orders or outpatient scripts.

Real-World Applications

Checking a new antibiotic schedule

A pharmacist needs to verify if Amoxicillin given three times daily is safe for a 5kg child. They input the regimen, and the `evaluate_dosage_regimen` tool immediately warns them that the total daily dose exceeds the established safety limit.

Calculating initial fever medication

A nurse needs to give Ibuprofen for a 12kg child. Instead of guessing, they use the `calculate_single_dose` tool to get the precise amount (180 mg), ensuring the dose is accurate every time.

Validating drug limits

A doctor needs to confirm the safe range for Paracetamol. They run the `get_drug_dosage_specs` tool, which returns the minimum single dose (10 mg/kg), maximum single dose (15 mg/kg), and daily safety limit (75 mg/kg) instantly.

Reviewing a transition of care

A clinic requires checking if a child's new medication schedule conflicts with their existing regimen. The AI client uses `evaluate_dosage_regimen` to ensure no drug crosses the total daily safety threshold.

Patterns to Avoid

Using generic calculators

✗ AVOID

Relying on basic web calculators that only accept a single weight input and don't account for minimum/maximum thresholds or daily limits.

✓ INSTEAD

Use the specialized `get_drug_dosage_specs` tool to pull specific pharmacological constraints first. Then, use `calculate_single_dose` and `evaluate_dosage_regimen` together for a complete safety review.

Manual cross-referencing

✗ AVOID

Having to open three different PDFs (drug guide, weight chart, dosing rules) just to confirm if 750mg is safe.

✓ INSTEAD

Feed all variables into the `evaluate_dosage_regimen` tool. It handles the complex comparison of multiple drugs and total daily limits in a single check.

The Right Fit

Use this MCP if your primary need is calculating weight-adjusted, safety-critical drug dosages for pediatric patients. If you are confirming safe ranges or checking multi-day schedules against strict thresholds, this tool set works. Don't use it just because you need a general medical lookup; it will only handle pharmacology and dosage mathematics. If your goal is finding the side effects of a drug or comparing treatment efficacy across different populations, that requires clinical literature review tools instead.

Checking pediatric dosages feels like playing high-stakes guesswork.

Right now, confirming a single dose involves juggling multiple data points: the child's weight, the drug's specific mg/kg range, and the daily safety limits. You check one chart, then switch tabs to another guideline, manually cross-

With this MCP, your AI client handles that entire complex process for you. You provide the drug and the child's weight; it immediately calculates the single dose needed and checks if the whole

referencing every number just to make sure you haven't missed a crucial threshold or exceeded a total daily limit.

schedule is safe. You get reliable numbers, instantly.

Get Accurate Dosing with calculate_single_dose

Manual calculation requires you to take the drug's weight-based parameters and apply them using a calculator, hoping you don't mix up units or misread a decimal point. Then you have to repeat that for every single dose.

The `calculate_single_dose` tool eliminates all that friction. It takes your inputs and delivers the exact medication amount needed—no manual math required. Just the answer.

Pediatric Dose Calculator MCP (3 Tools)

These tools allow you to retrieve dosage specifications, calculate single doses based on weight, and evaluate complex dosing schedules for pediatric safety.

#	TOOL	DESCRIPTION
01	`calculate_single_dose`	Calculates the precise amount of medication needed for one administration based on a child's weight.
02	`evaluate_dosage_regimen`	Checks an entire sequence of doses to ensure total daily intake remains within safe limits.
03	`get_drug_dosage_specs`	Retrieves the minimum, maximum single dose, and total daily safety thresholds for a specific medication.

See It in Action

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

U What are the dosage limits for Paracetamol?

For Paracetamol, the minimum dose is 10 mg/kg, the maximum single dose is 15 mg/kg, and the daily safety limit is 75 mg/kg.

U Calculate a single dose of Ibuprofen for a child weighing 12kg.

The calculated dose for 12kg is 180 mg.

U Is it safe to give Amoxicillin 3 times a day to a 5kg child, with each dose being 250mg?

Danger: The total daily dose of 750mg exceeds the safety limit for a 5kg child.

Frequently Asked Questions

01 **How does Pediatric Dose Calculator know the safety limits for a drug?**

It uses the `get_drug_dosage_specs` tool to retrieve established pharmacological constraints, including minimum and maximum dosage thresholds (mg/kg) from its database.

02 **Can I use Pediatric Dose Calculator for daily safety checks?**

Yes. The `evaluate_dosage_regimen` tool reviews the entire dosing schedule to ensure the cumulative total of all administered drugs does not exceed safe daily intake limits.

03 **What if my child weighs less than the minimum dose?**

The system uses the `get_drug_dosage_specs` tool to determine the precise minimum acceptable threshold, ensuring any calculated dosage respects that lower boundary.

04 **Is Pediatric Dose Calculator faster than calling a pharmacist?**

It provides instant calculation. While a human expert review is always best practice, this MCP gives you immediate verification on single doses and regimen safety checks.

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 `"pediatric-dose-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

Pediatric Dose 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

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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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