MCP SERVER | NO CODE | CLOUD HOSTED

Pediatric BMI Calculator MCP

Accurate Growth Statusing for Ages 2-20 Years.

Pediatric BMI Calculator lets you determine a child's Body Mass Index, growth percentiles, and nutritional status using official WHO and CDC standards. Enter a child’s age, weight, and height to get immediate classification—whether they are falling into the healthy, overweight, or undernourished category. It processes data specifically for ages 2 through 20 years, providing reliable metrics essential for pediatric care.

A+ Quality Score 100/100

pediatric | bmi | growth | healthcare | cdc | who

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vinkius.com/mcp/pediatric-bmi-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 BMI Calculator MCP

3 tools available
Cloud-hosted on Vinkius

This MCP provides specialized calculations for assessing a child's growth trajectory and nutritional status. Instead of relying on general BMI charts that don't account for age-specific growth patterns, this tool uses established WHO and CDC standards to map physical measurements to precise percentiles and z-scores. You input the necessary biological data—age, weight, height—and the MCP immediately generates a comprehensive profile. It calculates the core index using `calculate_bmi`, then uses that figure to determine the appropriate nutritional classification with `assess_growth_metrics`. If you suspect the initial data might be faulty or outside expected clinical limits, you can run `validate_pediatric_parameters` first. Connecting this MCP via Vinkius gives your AI client access to these specialized calculations, letting you spend less time cross-referencing guidelines and more time focusing on the patient's care plan.

Core Capabilities

01 — Calculate BMI Index

Inputs weight and height data to compute a child's Body Mass Index score.

02 — Determine Growth Classification

Uses the calculated BMI to assess specific pediatric growth metrics, providing nutritional status (e.g., healthy weight, overweight).

03 — Validate Input Parameters

Checks age and physical measurements against accepted clinical bounds for a valid assessment.

One Click on Vinkius — From Prompt to Execution

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

01 Start by entering the child's full data set (age in months, weight in kg, height in cm) into your AI client.

02 The MCP first runs `validate_pediatric_parameters` to ensure all provided measurements fall within clinically acceptable ranges. If they pass validation, it proceeds to calculate the BMI index using `calculate_bmi`.

03 Finally, the system uses the resulting BMI and age data through `assess_growth_metrics` to return a definitive growth status and percentile ranking.

The bottom line is you get an instant, standard-compliant assessment of the child's weight relative to their expected growth curve.

Built For

Pediatricians, Family Medicine Physicians, Nurses, and Pediatric Dietitians. You need this MCP when manual chart review is slowing down your clinic flow or when you can't rely on general calculation tools that ignore age-specific growth curves.

Pediatrician

Determining if a patient's BMI deviation requires immediate referral for further testing, based on WHO guidelines.

Family Medicine Physician

Performing routine wellness checks and generating documentation that accurately reflects the child's weight status relative to their age.

Pediatric Dietitian

Analyzing growth metrics to identify nutritional deficits or excesses, guiding specific dietary recommendations for parents and patients.

What Changes When You Connect

01 Get immediate, standard-compliant classification. The `assess_growth_metrics` tool uses official CDC and WHO standards, so your documentation is always accurate.

02 Save time on manual calculations. Instead of cross-referencing multiple tables for age-specific BMI percentiles, the MCP handles it all in one request.

03 Ensure data integrity before diagnosis. Running `validate_pediatric_parameters` first catches invalid inputs, preventing misleading growth assessments.

04 Go beyond simple numbers. This MCP doesn't just calculate a score; it classifies the result, telling you if the child is healthy weight or overweight.

05 Focus on care, not charts. By automating complex pediatric calculations, your agent gives you actionable insights faster than any manual system.

Real-World Applications

Routine Check-Up Follow-up

A family doctor needs to check a 7-year-old's weight after a growth spurt. Instead of calculating the BMI by hand and referencing outdated charts, they ask their agent to use `calculate_bmi` followed by `assess_growth_metrics`. The system immediately returns the percentile ranking and confirms if it remains in the healthy range.

Addressing Data Uncertainty

A nurse receives measurements for a 1-year-old that are outside standard pediatric ranges. Before proceeding, they use `validate_pediatric_parameters`. The MCP flags the data as invalid, preventing the doctor from making an assessment based on faulty inputs.

Documentation Review

A pediatrician needs to compare a child's current growth status against historical records. They feed the new measurements into this MCP to generate a reliable report that reflects the proper WHO/CDC classification, ensuring compliance for the patient file.

Differential Diagnosis Support

A dietitian needs to know if weight gain is due to nutritional deficiency or excess. They run `assess_growth_metrics` using the MCP's advanced algorithms, which provide a detailed classification that guides their next round of dietary consultation.

Patterns to Avoid

Using general BMI calculators

✗ AVOID

Relying on simple online tools or spreadsheet functions that calculate BMI without considering the child's age and sex-specific growth curves.

✓ INSTEAD

You must use this MCP. The `assess_growth_metrics` tool specifically adjusts for pediatric variations, giving you a result based on established CDC/WHO standards.

Ignoring data quality checks

✗ AVOID

Processing measurements that might be incorrect—for instance, entering an age in months when the system expects years.

✓ INSTEAD

Always run `validate_pediatric_parameters` first. This step confirms your inputs are viable before any complex calculations begin.

Manually comparing percentiles

✗ AVOID

Spending minutes manually looking up the correct percentile range for a 10-year-old male versus a 10-year-old female.

✓ INSTEAD

The MCP handles this complexity. The `calculate_bmi` tool provides the raw score, and the subsequent `assess_growth_metrics` automatically maps it to the correct gender/age percentile.

The Right Fit

Use this MCP if your primary need is accurate, standard-compliant assessment of pediatric growth and nutrition for children aged 2–20 years. This tool excels when you must classify a child's BMI relative to official WHO or CDC percentiles. Don't use it if you are assessing adult patients; those require different calculation parameters. If your goal is simply to calculate an index without knowing the

classification (e.g., for basic research), running `calculate_bmi` alone will suffice, but most clinical use cases require the full assessment provided by pairing this MCP's tools.

The Difficulty of Age-Specific Growth Tracking

Currently, tracking a child's growth often involves multiple steps: gathering age, weight, and height; calculating the raw BMI index; then, consulting separate tables to determine which percentile range that score falls into. If you use general tools, you risk misclassifying the result because they don't account for how a 5-year-old's growth curve differs from a 15-year-old's.

With this MCP, your agent handles all of that complexity internally. You just provide the measurements, and it returns a definitive classification—telling you exactly where the child stands against established global health standards.

Getting Definitive Growth Status with assess_growth_metrics

The key manual steps that disappear are the cross-referencing and interpretation of growth charts. You don't need to switch between a BMI calculator, a percentile chart, and a classification guide.

Now you get one unified output: a clear, clinically actionable status report generated directly from your AI client.

Pediatric BMI Calculator: 3 Tools

These tools allow you to calculate a child's Body Mass Index, assess their growth status against clinical standards, and validate all input data before making any assessment.

#	TOOL	DESCRIPTION
01	`calculate_bmi`	Computes the core Body Mass Index (BMI) score using provided weight and height metrics.
02	`assess_growth_metrics`	Determines the child's nutritional classification and growth percentile based on the calculated BMI.
03	`validate_pediatric_parameters`	Confirms that all input measurements (age, weight, height) are within valid clinical and developmental bounds for assessment.

See It in Action

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

U Calculate the BMI for a 5-year-old boy weighing 20kg and 110cm tall.

The calculated BMI is 16.53. For a 60-month-old male, this falls within the healthy weight range.

U Is a BMI of 25 for a 14-year-old female considered overweight?

A BMI of 25 for a 168-month-old female corresponds to the overweight classification based on CDC growth charts.

U Check if these parameters are valid: age 12 months, weight 5kg.

The parameters are invalid. The supported age range for pediatric assessment is between 24 and 240 months.

Frequently Asked Questions

01 **Does the Pediatric BMI Calculator MCP use WHO or CDC standards?**

Yes, this MCP incorporates both World Health Organization (WHO) and Centers for Disease Control (CDC) guidelines. It uses these established standards to map your child's weight and height to accurate percentiles.

02 **What age range does the Pediatric BMI Calculator support?**

It supports children from 2 years up to 20 years. The underlying calculation engine is built specifically for this pediatric developmental window.

03 **If my data is bad, how does the calculate_bmi tool handle it?**

The system first prompts you to run `validate_pediatric_parameters`. This ensures that if any input—like age or weight—is outside normal clinical bounds, the calculation won't proceed until the measurements are corrected.

04 **What is the difference between calculate_bmi and assess_growth_metrics?**

Calculating BMI gives you a raw index number. Running `assess_growth_metrics` takes that number, compares it to age-specific curves, and tells you what it means in terms of nutritional classification.

05 **Can I use this MCP for adults?**

No. This MCP is highly specialized for pediatric care (ages 2–20). Adult patients require a different calculation protocol that accounts for different physiological 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 `"pediatric-bmi-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 BMI 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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