

## 5.3. Assess the status of Dhātu and Dhātu Pradoshaja Vikāra

### 5.3. Assessing the Status of Dhātu and Dhātu-pradoshaja Vikāra

#### Learning goals

By the end of this chapter, you will be able to: (i) define **dhātu-sāmyata** (balanced tissue state) and recognise **dhātu-kṣaya/vrddhi**; (ii) perform a **structured assessment** of each of the seven dhātus in infants, children and adolescents; (iii) identify **dhātu-pradoshaja vikāra** (tissue-specific morbidities) with paediatric correlates; and (iv) write an **exam-ready** plan that integrates **Daśa-vidha parīkṣā** with modern measures (anthropometry, targeted labs).

#### Classical anchor (why dhātu status matters)

“समदोषः समाग्निश्च समधातु मलक्रियाः ।  
प्रसन्नात्मेन्द्रियमनाः स्वस्थ इत्यभिधीयते ॥”

— Suśruta Saṃhitā, Sūtrasthāna 15/41

(Health is the state of equilibrium of doṣa, agni, dhātu and mala with pleasantness of self, senses and mind.)

This verse is your opening line in long answers: **assessment of health is assessment of dhātu balance.**

#### 1) Key definitions

- **Dhātu**: the seven sustaining tissues — **Rasa**, **Rakta**, **Māṃsa**, **Meda**, **Asthi**, **Majjā**, **Śukra** — which sequentially nourish one another (*dhātu-saṃtāna*).
- **Dhātu-sāmyata**: functional and quantitative balance of each dhātu, appropriate for age and sex.
- **Dhātu-kṣaya**: deficiency (quantitative/qualitative) of a tissue; **Dhātu-vrddhi**: excess/overaccumulation.
- **Dhātu-pradoshaja vikāra**: tissue-specific morbid states arising from qualitative/quantitative derangement of a dhātu (with characteristic clinical expressions).

#### 2) Assessment framework (how to examine dhātus in children)

Use **Daśa-vidha parīkṣā** (Charaka: *sāra*, *saṃhanana*, *pramāṇa*, *satmya*, *satva*, *āhāra-śakti*, *vyāyāma-śakti*, *vaya* + *prakṛti*, *bala*) with **age-appropriate** observations. Pair every Ayurvedic observation with a **modern correlate** so your answer is complete and clinically useful.

##### 2.1 Sāra-parīkṣā (excellence of tissues) — child-friendly cues

(Summarised from classical descriptions; apply sensibly across ages)

Dhātu	Classical “sāra” hints (child-friendly)	Bedside/modern correlates
Rasa	Soft, well-hydrated skin, pleasant sheen, good stamina for age	Skin turgor, mucous membranes moist; hydration; no undue fatigue
Rakta	Healthy pink of lips, nails, conjunctiva; good enthusiasm	Hb, MCV; no pallor/jaundice; capillary refill normal
Māṃsa	Well-filled limbs, firm tone, good posture	MUAC, muscle bulk/strength (age-fit tasks), growth velocity

Dhātu	Classical “sāra” hints (child-friendly)	Bedside/modern correlates
Meda	Smoothness, unctuousness without heaviness	BMI-for-age, skinfolds; no acanthosis (excess) or wasting (deficit)
Asthi	Strong teeth, nails, hair set; steady gait	Rickets signs, bone pain, dental caries; Vit-D/Ca/ALP if indicated
Majjā	Plumpness, good eye glow, calm sleep	Neuro-development, fatigue, marrow/neurologic cues as relevant
Śukra/Artava	Luster, clarity of voice/eyes; in adolescents, normal pubertal milestones	Tanner staging; menstrual history in girls; endocrine red flags

**Exam tip:** In **infants**, emphasise **Rasa-Māṃsa** (hydration/growth) first; in **adolescents**, add **Asthi-Śukra/Artava** (bone mass, pubertal progress).

## 2.2 Samhanana (body compactness) & Pramāṇa (proportions)

- Observe **frame**, **posture**, and **proportions** (upper/lower segment ratio, head circumference in infants).
- Modern: **length/height**, **weight**, **BMI-for-age**, **MUAC**, **HC**; plot on **WHO growth standards**; track **z-scores** and **velocity**.

## 2.3 Satmya, Satva, Āhāra-/ Vyayāma-śakti, Vaya

- Satmya**: foods that suit the child (intolerance hints **Rasa/Rakta** or **Māṃsa** issues).
- Satva**: mental strength (poor satva → low appetite, recurrent illness).
- Āhāra-śakti**: appetite + digestion (vomits/bloating → Rasa pradoṣa/Agni issues).
- Vyayāma-śakti**: endurance for age (links **Māṃsa/Meda/Asthi**).
- Vaya**: age-appropriate **milestones/puberty** (dhātu maturity).

## 2.4 Srotas-parīkṣā (channels) and Doṣa context

- Do not assess dhātu in isolation**: annotate **doṣa** influences (e.g., **Pitta** aggravation with **Rakta** signs; **Kapha** with **Meda**).

## 3) The seven dhātus: what to look for, what goes wrong, how to corroborate

Use this table to structure any short/long answer; adapt examples to age.

Dhātu	Healthy status (age-fit)	Kṣaya (deficit) — signs & paediatric correlates	Vṛddhi (excess) — signs & correlates	Targeted corroboration
Rasa (plasma/primary nutrition)	Hydrated skin, good sleep, steady appetite	Dry tongue, poor skin turgor, easy fatigue, dizziness	Heaviness, lethargy, sticky salivation, oedema tendency	Hydration status, serum electrolytes if severe; feeding history
Rakta (blood)	Pink mucosae, warm peripheries, vigour	Pallor, irritability, pica; recurrent infections; tachycardia	Flush, bleeding tendencies with heat signs (rare in children)	CBC, smear, ferritin±CRP; LFT if jaundice
Māṃsa (muscle)	Age-appropriate bulk/tone; active play	Wasting, hypotonia, delayed motor skills	Stocky habitus with poor endurance	MUAC, growth velocity; diet protein quality

<b>Dhātu</b>	<b>Healthy status (age-fit)</b>	<b>Kṣaya (deficit) — signs &amp; paediatric correlates</b>	<b>Vṛddhi (excess) — signs &amp; correlates</b>	<b>Targeted corroboration</b>
<b>Meda</b> (adipose/lipids)	Softness without heaviness; satiety cycles	Dry rough skin, poor weight gain	Central adiposity, snoring, acanthosis	BMI-for-age, skinfolds; fasting glucose/lipids if obese
<b>Asthī</b> (bone/teeth)	Straight limbs, firm teeth/nails	Rickets signs (wrist widening, genu varum), bone pains	Bony overgrowths (rare; note exostoses/dentition anomalies)	Ca, P, ALP, 25-OH-D; dental exam
<b>Majjā</b> (marrow/nerve)	Calm sleep, bright eyes, good recovery from illness	Fatigability, neuro-cognitive lag (broad flag), recurrent bone pain (marrow)	Head-aches/heaviness with kapha signs (non-specific)	Developmental screen; anaemia profile; neuro eval if indicated
<b>Śukra/Artava</b> (reproductive tissue)	Normal pubertal timing; clear skin/lustre	Delayed puberty, dysmenorrhoea/oligomenorrhoea in girls, under-muscled boys	Precocious features; acne/oily skin (pitta/meda overlay)	Tanner staging; thyroid/FSH-LH/PRL as needed

## 4) Dhātu-pradoṣaja vikāra: concept and paediatric mapping

**Definition:** When a **particular dhātu is qualitatively vitiated or quantitatively deranged**, a recognisable **cluster of disorders** arises — these are **dhātu-pradoṣaja vikāra**. Know the classical associations and give **modern paediatric parallels** (for theory marks).

<b>Dhātu</b>	<b>Classical pradoṣaja pointers</b>	<b>Paediatric correlates/examples</b>
<b>Rasa</b>	Ārucī (anorexia), tandra (somnolence), gaurava (heaviness), klama (fatigue), śūla/āmā symptoms	<b>Feeding difficulties</b> , functional abdominal pain, <b>recurrent viral illnesses</b> with poor hydration/nutrition
<b>Rakta</b>	Raktapitta, kuṣṭha/śvitra, visarpa, pittaja netra-roga	<b>Anaemia syndromes, bleeding diathesis</b> work-ups, <b>atopy/eczema</b> overlap (pitta-rakta)
<b>Māṃsa</b>	Granthī/arbuda, apacī, gala-gāṇḍa (with other factors)	<b>Adenitis, tonsillar hypertrophy</b> ; rare neoplasms (mention carefully)
<b>Meda</b>	Prameha, sthūlatā, medoroga; srotorodha	<b>Childhood obesity</b> , insulin resistance ( <b>acanthosis</b> ), dyslipidaemia
<b>Asthī</b>	Danta-vikāra, nakha-kacha vikāra, śūla, sandhi-akṣepaka	<b>Rickets/osteomalacia</b> , dental caries/enamel defects, bone pains
<b>Majjā</b>	Timira/anetra-vikāra (with pitta/rakta), majjā-kṣaya lakṣaṇa	<b>Marrow failure/anaemia</b> red flags; neurodevelopmental lag (broad)
<b>Śukra/Artava</b>	Klaibya, vandhyatā, pautika/śukra-doṣa	<b>Pubertal disorders</b> (delayed/precocious), menstrual irregularities (adolescents)

**Important:** In **children**, Śukra/Artava-pradoṣa is mostly **puberty-age**; avoid adult sexual dysfunction language in paediatric answers — instead **chart pubertal timing and menstrual health**.

## 5) Step-wise assessment algorithm

- General growth screen:** weight, length/height, **z-scores, MUAC** (6-59 mo), **BMI-for-age** (5-19 y).
- Daśa-vidha parīkṣā focus:** **Sāra** → **Samhanana** → **Pramāṇa**; āhāra-śakti & vyāyāma-śakti; **satmya/satva**; age (milestones/puberty).
- Dhātu-wise checklists:** Rasa (hydration, appetite), Rakta (pallor, bleed), Māṃsa (tone, MUAC), Meda (skinfolds, acanthosis), Asthi (rickets/dental), Majjā (fatigability/neuro), Śukra/Artava (Tanner/menstrual).
- Doṣa & srotas lens:** is there Pitta-Rakta pattern? Kapha-Meda block? Vāta-Asthī link?

5. **Corroborative tests (only as needed):** CBC, ferritin±CRP; Ca/P/ALP/25-OH-D; fasting glucose/lipids in obesity; thyroid & pubertal hormones selectively.
6. **Grade the state: Sāmyata vs Kṣaya vs Vṛddhi** (dhātu by dhātu).
7. **Plan:** Pathya-āhāra + vyāyāma; correct micro-nutrients; age-fit **rasāyana/bṛhmaṇa** or **langhana/lekhaniya** where appropriate; treat any **dhātu-pradoṣa** condition with standard protocols; schedule follow-up with **growth velocity**.

## 6) Putting theory into practice (age-wise nuances)

### Infants (0-12 months)

- **Rasa-Māṃsa priority:** ensure **exclusive breastfeeding (0-6 mo)**, then **iron-rich complementary feeding**; check **hydration, stools, weight velocity**.
- **Dhātu-pradoṣa focus:** **Rasa-pradoṣa** (feeding/colic/functional diarrhoea); **Rakta** (early anaemia) — **CBC** if red flags.

### Toddlers & preschool (1-5 years)

- **Māṃsa-Meda-Asthi triad:** protein quality, fats (energy density), **calcium/vit-D**; watch for **rickets** signs.
- **Pradoṣa:** **Meda** (early adiposity), **Asthi** (vit-D deficiency), **Rakta** (IDA).

### School-age & adolescents

- **Asthi peak-bone-mass** and **Śukra/Artava maturation:** calcium-vit-D, exercise; monitor **menstrual health** in girls; **iron** for both sexes (esp. girls).
- **Pradoṣa:** **Meda-pradoṣa** (obesity/IR), **Rakta** (anaemia), **pubertal disorders** (endocrine evaluation).

## 7) Management principles framed by dhātu state

**Rule:** "Treat the child, the doṣa, the dhātu, and the srotas — in that order, with age-appropriate gentleness."

- **Dhātu-kṣaya (deficit):**
  - **Pathya:** energy-protein dense diet, iron-zinc-vit-A/D/B12 as indicated; small frequent meals; correct **agni** (avoid over-restrictive fad diets).
  - **Bṛhmaṇa & Rasāyana-yoga** (child-safe): **ghṛta-based** preparations, *Jīvanti/Satāvarī/Vidārī* support where appropriate; treat underlying infections/IBD/parasites.
- **Dhātu-vṛddhi (excess):**
  - **Langhana/Laṅghana-pācana** (mild), **lekhaniya pathya**; prune sugars/UPFs; bolster playful **vyāyāma**; address **sleep**.
  - For **Meda-pradoṣa** (obesity/IR): graded activity, family diet change; consider **lipid/glucose** screens.
- **Dhātu-pradoṣaja vikāra** (examples):
  - **Rakta** (IDA): diet + **iron therapy** with deworming per program; address menorrhagia in adolescents.
  - **Asthi** (rickets): **vit-D + calcium** regimen, sun-exposure guidance.
  - **Meda** (obesity): stage by BMI-z; comorbidity screen; behaviour therapy.

## 8) Case snippets (for short answers)

1. **9-month infant**, BF + thin gruels, pallor.

- **Dhātu screen:** Rasa okay? Rakta likely **kṣaya**.
- **Plan:** Thicken foods; add **iron-rich** (egg/legume + vit-C); **CBC/ferritin**; review in 2 weeks with weight.

2. **7-year child**, BMI-z > +2, acanthosis.

- **Dhātu: Meda-vṛddhi** (pradoṣa).
- **Plan:** Family-based diet shift; playful daily activity; fasting glucose/lipids; counsel sleep.

3. **14-year girl**, delayed menarche, fatigue, bone pains.

- **Dhātu: Asthi kṣaya** with possible **Rakta** issues.
- **Plan:** Tanner staging; **Ca/P/ALP/25-OH-D, CBC**; calcium-vit-D repletion; protein upgrade; reassess milestones.

## 9) Common pitfalls (and how to avoid them)

- **Mixing up doṣa and dhātu:** write **both** (e.g., “Pitta-rakta prakopa → Rakta-pradoṣa features”).
- **Ignoring age:** Śukra/Artava assessment applies to **adolescents**; do not discuss adult sexual dysfunctions in paediatric answers.
- **Over-ordering labs:** use **targeted tests**; the backbone is **growth + sāra/samhānana/pramāṇa** assessment.
- **One-size diet:** tailor by **satmya, āhāra-śakti**, and **culture**.

## Self-assessment

### MCQs (one best answer)

1. The **single verse** that best justifies assessing dhātu balance in health definition is from:
  - A. Caraka Nidānasthāna 4
  - B. Suśruta Śārīrasthāna 2
  - C. Suśruta Sūtrasthāna 15/41**
  - D. Aṣṭāṅga Hṛdaya Uttarasthāna 3

**Answer: C.**
2. A 2-year child with MUAC 11.8 cm most likely has:
  - A. Normal **Māṃsa**
  - B. Māṃsa-kṣaya** (MAM)
  - C. Meda-vṛddhi
  - D. Asthi-vṛddhi

**Answer: B** (MUAC 115-124 mm ≈ MAM).
3. Acanthosis nigricans in a 10-year-old suggests primarily:
  - A. Rakta-kṣaya
  - B. Meda-pradoṣa with insulin resistance**
  - C. Asthi-kṣaya
  - D. Rasa-kṣaya

**Answer: B.**
4. Rickets-like signs point to derangement of:
  - A. Rasa
  - B. Asthi**
  - C. Māṃsa
  - D. Majjā

**Answer: B.**
5. In adolescents, delayed menarche belongs under:
  - A. Rasa-pradoṣa
  - B. Śukra/Artava-pradoṣa** (with endocrine review)
  - C. Meda-vṛddhi
  - D. Māṃsa-vṛddhi

**Answer: B.**

### Short-answer prompts (3-4 lines each)

- Define **dhātu-pradoṣaja** *vikāra* and give **two** examples each for **Meda** and **Asthi**.
- Outline a **dhātu-wise** assessment plan for a 7-year-old with poor school stamina.
- List **four** clinical cues of **Rakta-kṣaya** and two investigations.
- Write **three** diet measures for **Māṃsa-kṣaya** in a toddler.

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## References

### Classical sources

- **Suśruta Saṃhitā**, *Sūtrasthāna* 15/41 — definition of health emphasising **samadhātu** (quoted above).
- **Caraka Saṃhitā**, *Vimānasthāna* 8 — **Sāra-parīkṣā**, *Daśa-vidha parīkṣā* parameters (sāra, samhanana, pramāṇa, satmya, satva, āhāra-śakti, vyāyāma-śakti, vaya).
- **Caraka Saṃhitā**, *Sūtrasthāna* (relevant adhyāyas on **dhātu-saṃtāna** and **dhātu-kṣaya/vṛddhi** concepts; commentators describe **dhātu-pradoṣaja** clusters across *Sūtrasthāna* 28-30).
- **Aṣṭāṅga Hṛdayam**, *Sūtrasthāna* (doṣa-dhātu-mala & srotas concepts supporting tissue assessment); *Uttaratantra* – *Bālopacaraṇīya* (age-context in children).

### Modern standard resources

- **WHO Child Growth Standards** and **WHO 2007 BMI-for-age** (anthropometry, z-scores, MUAC thresholds).
- **IAP Textbook of Pediatrics** — growth & puberty, anaemia, rickets/osteomalacia, childhood obesity.
- **Ghai Essential Pediatrics** — practical nutrition, anaemia work-up, Vitamin D/calcium disorders.
- **NIN/ICMR** Dietary Guidelines (energy-protein and micronutrient priorities by age).

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### 60-second last-minute revision

- Quote **Suśruta 15/41** to anchor *samadhātu*.
- Examine via **Daśa-vidha parīkṣā**; translate each finding into **modern growth & lab** screens.
- **Rasa-Māṃsa** dominate infancy; **Asthi-Śukra/Artava** gain importance in adolescence.
- **Dhātu-pradoṣaja** = tissue-specific morbidity clusters (e.g., **Meda**→ obesity/IR; **Asthi**→ rickets; **Rakta**→ anaemia).
- Finish with a **plan**: pathya, micro-nutrients, **bṛṃhaṇa** (for kṣaya) or **lekhaniya/langhana** (for vṛddhi), and follow-up on **velocity**.