#### WHERE CLASSICAL WISDOM MEETS INTELLIGENT LEARNING

# Unit 4. Stanya Vijnana (Breast Milk) Topic 1. Stanyotpatti

# Unit 4: Stanya Vijñāna (Breast Milk)

Topic 1 — Stanyotpatti (physiology of lactation), Stanya Guṇa, Śuddha Stanya Lakṣaṇa (qualities of normal breast milk), Piyūṣa (colostrum), Composition and Types of Breast Milk

#### 1) Classical orientation and definitions

**Stanya** (breast milk) is considered the *upadhātu* (secondary tissue-product) of **Rasa-dhātu** (plasma/nutrient fluid) and the primary food of the infant in Ayurveda. Vāgbhaṭa and other Ācāryas repeatedly emphasise its indispensability for life, nutrition and immunity of the newborn.

#### Classical proof (Upadhātu of Rasa):

"रसात् स्तन्यं स्त्रियाः..." — the generation of stanya (in woman) from rasa is stated by Ācārya Caraka while enumerating the upadhātus.

Source: Caraka Saṃhitā, Cikitsāsthāna 15/16-17.

#### Human milk in Kşīra-varga (Drava-dravya-vijñānīya):

"मानुषं वातिपत्तासृगभिघाताक्षिरोगजित् । तर्पणाश्चोतनैर्नस्यैः" — "Human milk is beneficial in disorders of Vāta, Pitta, blood and injuries; salutary for eye therapies (tarpana, aścyotana) and as nasya."

Source: Aṣṭāṅgaḥṛdaya, Sūtrasthāna, Drava-dravya-vijñānīya (Kṣīra-varga).

These two ślokas together establish: (i) *stanya* arises from *rasa*, and (ii) *mānuṣa-kṣīra* (human milk) has cooling, nourishing, protective properties, aligning with modern findings on immunological benefits.

# 2) Stanyotpatti — Physiology of lactation

#### Ayurvedic view

- **Dhātu-saṃtāna:** Maternal *āhāra-rasa* nourishes Rasa-dhātu; from Rasa, *stanya* is elaborated as its *upadhātu* and transported through **stanya-vāha srotas** to **stana** (breasts). Balanced *Agni*, *doṣa*, and unobstructed srotas are prerequisites for adequate flow (*stanya-pravrtti*).
- Factors favouring stanyotpatti: Sātmyāhāra (wholesome diet), snigdha-madhura-rasa intake, adequate nidrā (sleep), calm manas, regular suckling (stimulates flow), and stanya-janaka dravyas (galactagogues) such as śatāvarī, vidārī, yaṣṭimadhu, and ghṛta when indicated.
- Factors impairing stanyotpatti: Maternal undernutrition, dehydration, śrama (fatigue), rukṣa & tikta-kaṭu dominant diets in excess, emotional disturbance, breast/duct obstruction (sanga), and stanya-doṣa due to maternal doṣa-prakopa.

#### Modern physiology (bridged to Ayurvedic concepts)

#### Hormonal axis:

- **Prolactin** (anterior pituitary) milk synthesis. Peaks with suckling; higher at night.
- **Oxytocin** (posterior pituitary) **let-down reflex**; causes myoepithelial contraction and ejection of milk through ducts (*stanya-vāha srotas* ↔ *let-down pathway*).

#### • Stages of lactation:

- **Lactogenesis I** (mid-pregnancy to early postpartum): Colostrum formation.
- Lactogenesis II (days 2-4): "Milk coming in" sharp rise in volume with falling progesterone.
- Galactopoiesis (maintenance): Supply-demand principle; frequent emptying sustains production.
- Autocrine control: The more completely and frequently breasts are emptied, the greater the synthesis (mirrors

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Ayurvedic emphasis on regular stanya-pāna to keep srotas unblocked).

**Clinical pearls (exam-oriented):** Initiation of breastfeeding within the **first hour** optimises oxytocin reflex and infant thermoregulation; rooming-in, skin-to-skin contact, and on-demand feeding prevent early lactation failure.

# 3) Stanya Guṇa — Properties of breast milk

#### Ayurvedic properties (Mānuṣa-kṣīra)

- Rasa (taste): Madhura (sweet).
- Guṇa: Snigdha (unctuous), mṛdu (soft), sātmya (naturally suited to the infant).
- **Vīrya:** Predominantly *śīta* (cooling, pitta-śāmaka).
- Vipāka: Madhura, thereby building tissues.
- **Karma (therapeutic actions):** *Jīvanīya* (life-promoting), *bṛṃhaṇa* (anabolic), *ojovardhana* (enhances ojas), *rasāyana-tulya* for the infant (supports immunity and longevity).
- From Aṣṭāṅgahṛdaya reference above: Indications in eye disorders and as nasya reflect antiinflammatory/protective (IgA-rich) qualities.

#### **Modern correlates**

- **Immunological:** Secretory **IgA**, lactoferrin, lysozyme, leukocytes; **HMOs** (human milk oligosaccharides) promote beneficial microbiome and anti-adhesive pathogen defence.
- **Growth & neurodevelopment:** Long-chain PUFA (DHA/ARA), cholesterol, hormones (leptin, adiponectin), nucleotides, growth factors (EGF), stem cells support brain myelination, retinal development and gut maturation.
- Allostatic protection: Lower risks of NEC, sepsis, otitis media, diarrhoea, SIDS; long-term reduction in obesity, type-2 DM; improved cognitive scores.

# 4) Suddha Stanya Lakṣaṇa — Qualities of normal breast milk

# Ayurvedic descriptors (examination-ready):

- Varṇa: Śaṅkha-śubhra (pearl-white), not too yellow/greenish.
- Gandha: Manda / non-offensive, characteristic sweetish odour; no rancidity.
- Rasa: Madhura, non-astringent/bitter.
- Sparśa/Drava: Smooth, homogeneous; not excessively viscous (atitanutā/taṇḍulatā absent); minimal frothing.
- **Śuddhi markers:** Infant drinks readily; no abdominal colic, regurgitation, skin eruptions or eye discharge after feeds, sleep is sound, weight gain appropriate.

*Note:* Texts also describe *stanya-parīkṣā* (simple bedside checks) and contrast features of *duṣṭa stanya* (e.g., excessive froth, stringiness, discoloration, unpleasant smell/taste) which correlate with infant intolerance/infections; these are detailed formally under *Stanya-doṣa* elsewhere in the syllabus.

# 5) Piyūṣa (Colostrum) — Concept and significance

**Definition:** *Piyūṣa* denotes the **first milk** expressed in early postpartum days (golden-yellow, viscous). Traditionally regarded as *amṛta-sadṛśa* (nectar-like), it is **not** to be discarded; it is the **first āhāra** of the newborn.

#### Ayurvedic rationale:

• Highly saṃskāra-yukta (naturally processed by the mother's physiology), bestows bala, varṇa, medhā, and

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protects the bāla-agni and srotas.

• Its early administration aligns with jātakarma care, ensuring warmth, bonding and initiation of stanya-pravṛtti.

#### Modern composition & benefits (clinically high-yield):

- **High protein (esp. whey), low fat & lactose;** very rich in **slgA**, lactoferrin, leukocytes, cytokines, HMOs, vitamin A & zinc.
- **Gut priming:** Seals mucosa, reduces intestinal permeability, promotes meconium passage (↓ jaundice risk), and seeds healthy microbiota.
- Infection control: Broad passive immune protection; strong anti-inflammatory action.

**Practice points:** Start within **1 hour** of birth; feed *on demand* (8–12 times/day); avoid pre-lacteal feeds and routine bottles to protect latch and supply.

### 6) Composition of breast milk

Component	Colostrum (0-3 d)	Transitional (4-14 d)	Mature milk (>2 wk)	Key notes
Energy	~55-65 kcal/100 ml	1	65-75 kcal/100 ml	Varies with maternal diet, time of day
Water	~87-88%	~87%	~87%	Adequate hydration for infant; no extra water needed
Protein	2.0-2.5 g/100 ml	1.5-1.8	0.8-1.0	Immunoproteins dominate early (slgA, lactoferrin)
Fat	2-3 g/100 ml	3-4	3.5-4.5 (variable)	1 in hind-milk; provides DHA/ARA
Lactose	4-5 g/100 ml	5-6	6.5-7.5	Fuel for brain; promotes Ca absorption
HMOs	High	High	High	Prebiotic; pathogen decoy
Micronutrients	Vitamin A, E, Zn <b>high</b>	Balanced	Balanced	Vit D depends on maternal status/sunlight

**Foremilk vs hindmilk:** Foremilk is relatively lower in fat (quenches thirst), hindmilk is fat-rich (satiety, weight gain). Ensure **complete emptying** of one breast before switching.

# 7) Types/classifications of milk

## (A) Ayurvedic Kşīra-varga (overview)

Classics describe **eight milks** (cow, buffalo, woman, goat, sheep, camel, horse, elephant) with distinct guṇas. For **mānuṣa-kṣīra**, the Aṣṭāṅgahṛdaya śloka (quoted above) highlights therapeutic use, reflecting its gentle, protective nature suited to the human infant.

(Detailed doșa-wise stanya-doșa classification is addressed under a separate topic.)

# (B) Modern functional types

- Colostrum → Transitional → Mature (time-based maturation).
- Foremilk vs Hindmilk (within-feed gradient).
- Preterm milk: Higher protein, certain minerals, and protective factors than term milk naturally tailored to preterm needs.

#### 8) Practical assessment of adequate lactation & normal milk

• Infant parameters: Effective latch/suck-swallow-breathe pattern; ≥6 wet nappies/day by day 5; transitional stools

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- to seedy yellow by day 4-5; birth weight regained by 10-14 days, then ~20-30 g/day gain in early months.
- **Maternal signs:** Fullness before feeding, softening after; occasional let-down tingling; no persistent pain/cracks (suggest latch issues).
- If concerns: Observe a full feed, correct positioning, ensure on-demand frequency (including night feeds); screen
  for maternal anaemia, thyroid disorders, drug use, dehydration, stress; investigate infant tongue-tie or illness when
  indicated.

# 9) Integrative management pointers (Ayurveda + modern care)

- **Daily regimen:** Warmth, rest, post-partum *abhyanga* as per season, light *bṛṃhaṇa* diet (e.g., *yavāgū*, *māṣa|mudga* as suitable), *ghṛta* in moderation, spices that aid *agni* yet are mild (śuṇṭī, ajamodā).
- **Stanya-vardhaka dravyas** (under supervision): Śatāvarī, Vidārī, Yaṣṭimadhu, Jeeraka-kaṣāya, ṣaḍ-dhānya gruels, fenugreek in appropriate dose; maintain hydration.
- Lactation counselling: Early skin-to-skin, rooming-in, demand feeding, avoid pre-lacteals/formula unless medically indicated.
- **Red flags needing referral:** Poor weight trajectory, dehydration signs, persistent jaundice >3 weeks, fever, maternal mastitis/abscess, inverted nipples unresponsive to support, infant structural anomalies affecting feeding.

# 10) High-yield "compare & contrast"

Feature	Śuddha stanya (Ayurveda)	Healthy breast milk (modern)
Appearance	Pearl-white, homogeneous, not frothy	Opaque white/bluish; thin at start, creamier later
Tolerance	Infant calm, sleeps well, thriving	Adequate wet diapers, weight gain, no persistent colic
Smell/taste	Pleasant, not rancid or bitter	Mild "sweet" smell; off-odour suggests storage/rancidity
Effect	Bṛṃhaṇa, ojovardhana, disease protection	Immunoprotection (slgA, HMOs), neurodevelopment support

# Key Sanskrit ślokas for this topic

1. Upadhātu link (origin of stanya):

"रसातु स्तन्यं स्त्रियाः..."

Caraka Saṃhitā, Cikitsāsthāna 15/16-17.

2. Properties/indications of human milk:

"मानुषं वातपित्तासृगभिघाताक्षिरोगजित् । तर्पणाश्चोतनैर्नस्यैः"

Aşţāngahrdaya, Sūtrasthāna, Drava-dravya-vijñānīya (Kşīra-varga).

(Use these verbatim with source. If your university expects exact numbering for AH verses, cite by chapter title—Dravadravya-vijñānīya (Kṣīra-varga)—as printed editions vary in verse counts.)

# Assessment

### A. Long answer (10 marks)

1. Explain **Stanyotpatti** with Ayurvedic and modern mechanisms. Add the role of *stanya-vāha srotas*, prolactinoxytocin physiology, and clinical steps to establish breastfeeding within the first hour.

# B. Short essays (5 marks each)

- 1. Śuddha Stanya Lakṣaṇa: enumerate and correlate with modern clinical markers of adequate milk.
- 2. **Piyūṣa (Colostrum):** composition, benefits, and its place in *jātakarma* care.

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3. **Stanya Guṇa** of *mānuṣa-kṣīra*: Ayurvedic properties with modern parallels.

#### C. Short answers (3 marks each)

- 1. List any four immunological constituents of human milk.
- 2. Define foremilk and hindmilk; why must one breast be emptied before switching?
- 3. Name three **stanya-vardhaka** dravyas with classical rationale.
- 4. Mention two maternal and two infant causes of perceived "low milk".
- 5. Enumerate three bedside signs that lactation is adequate by day 5.

#### D. MCQs (1 mark each)

- 1. Stanya is an **upadhātu** of: (a) Rasa (b) Rakta (c) Meda (d) Śukra.
- 2. Primary hormone for milk ejection is: (a) Oxytocin (b) Prolactin (c) Estrogen (d) Progesterone.
- 3. HMOs in human milk act mainly as: (a) Prebiotics/anti-adhesins (b) Vitamins (c) Enzymes (d) Minerals.
- 4. Which is richest in slgA: (a) Colostrum (b) Transitional milk (c) Mature foremilk (d) Mature hindmilk.
- 5. A normal indicator by day 5 is: (a) ≥6 wet diapers/day (b) Weight loss >12% (c) Green frothy stools persistent (d) No stools at all.
- 6. In AH Kṣīra-varga, mānuṣa-kṣīra is indicated even for: (a) Ocular therapies (b) Vamana (c) Virechana (d) Basti.
- 7. Foremilk is relatively: (a) Lower fat (b) Higher fat (c) Higher protein (d) Higher minerals.
- 8. Hindmilk supports: (a) Satiety & weight gain (b) Only hydration (c) Only immunity (d) Only minerals.
- 9. Earliest breastfeeding should begin within: (a) 1 hour (b) 6 hours (c) 24 hours (d) 48 hours.
- 10. A true sign of adequate supply is: (a) Breast softening after feeds (b) Persistent deep nipple pain (c) Infant lethargy and dry mouth (d) <2 wet diapers/day.

Case-vignette prompt (5 marks): A primipara on day 3 reports "no milk," baby crying. Outline five steps to assess and support lactation using both Ayurvedic and modern measures.

# References

#### Classical

- Caraka Samhitā Cikitsāsthāna 15/16-17 (Upadhātu enumeration: rasāt stanyam).
- Aṣṭāṅgahṛdaya Saṃhitā (Vāgbhaṭa) Sūtrasthāna, Drava-dravya-vijñānīya (Kṣīra-varga) properties and indications of mānusa-ksīra.
- Suśruta Samhitā Śārīrasthāna (context of stanya and post-natal care), Sūtrasthāna (Kṣīra-varga parallels).
- Kāśyapa Saṃhitā (Vrddha Jīvakiya Tantra) Khilasthāna/Lehya-annapāna, Bāla-poshana topics supporting primacy of stanya and colostrum feeding.
- **Aṣṭāṅgasaṅgraha** corroborative verses on *kṣīra-varga* and paediatrics.

#### Modern

- IAP Textbook of Pediatrics (latest ed.) Breastfeeding & human milk composition.
- WHO/UNICEF: Ten steps to successful breastfeeding; Early initiation policy briefs.
- Lawrence & Lawrence: Breastfeeding: A Guide for the Medical Profession physiology & clinical practice.
- Ballard O., Morrow A. Human milk composition: nutrients and bioactive factors (Pediatr Clin North Am).
- Victora et al. Breastfeeding and health outcomes (The Lancet Breastfeeding Series).

Exam tip: Quote Caraka for origin (Rasa → stanya) and Aṣṭāngaḥṛdaya for properties and clinical indications of mānuṣa-kṣīra. Use modern numbers (sIgA, HMOs, DHA, 6-12 feeds/day, ≥6 wets by day 5) to secure integration marks.

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