

## 5.4. Nutritional diet and other topics of points 5-6-7

### Unit 5. Bāla Poṣaṇa (Child Nutrition) & Vyādhikṣamatva (Immunity)

#### Topics 4-7

##### Key ślokas for this unit

“यावद्द्वयस्याशनमशितमनुपहृत्य प्रकृतिं यथाकालं जरां गच्छति तावदस्य मात्राप्रमाणं वेदितव्यं भवति ॥” — *Caraka Saṃhitā, Sūtrasthāna 5 (Mātrāsītīya) /4* (proper quantity of diet is that which digests in time without deranging the prakṛti).

“रसादीनां शुक्रान्तानां धातुनां यत् परं तेजस् तत् खल्वोजः ; तदेव बलं इत्युच्यते ॥” — *Suśruta Saṃhitā, Sūtrasthāna 15* (Ojas—the supreme essence of all dhātus—is the very **Bala**/vital strength).

## 4) Nutritional diet in different ages

Ayurveda positions **Āhāra** as a prime pillar of health, while modern pediatrics quantifies age-wise energy and micronutrient needs. Integrating both:

### 0-6 months (exclusive breastfeeding)

- **Only breastmilk** on demand, including night feeds; no water/herbals.
- Colostrum (Piyūṣa) is **immunonutritive** and must not be discarded.
- **Benefits:** ideal macro/micronutrients, bioactive factors; protects against infections and later NCD risk.
- Red flags to refer: poor latch, <6 wet nappies/day after day 5, excessive weight loss.

### 6-12 months (complementary feeding added)

- **Begin at completed 6 months:** mashed family foods; 2-3 meals + 1-2 healthy snacks; continue breastfeeding.
- **Texture progression:** thin → thick → mashed soft lumps by 8-9 months; finger foods by 9-10 months.
- **Iron-rich** (dal, green leafy veg, egg where culturally acceptable), **zinc** sources (pulses, oilseeds). Avoid honey <1 year.
- Spices/ghee in **small** amounts for taste/digestion (agnidīpana) if tolerated.

### 1-3 years (toddler)

- **4-5 feeds/day** (3 meals + 1-2 snacks).
- Emphasize **variety:** cereals/millet, pulses, milk/curd, seasonal fruits, vegetables, ghee/healthy oils, nuts/seeds (powder/paste).
- **Milk** ~300-500 ml/day (including curd/paneer).
- Rituals from *swasthavṛtta*: regular mealtimes, calm feeding environment.

### 4-6 years (preschool)

- **Portion control** guided by appetite; encourage breakfast; school tiffin: cereal + protein + fruit/veg.
- **Limit ultra-processed** foods, juices, and sweetened beverages.

### 7-12 years (middle childhood)

- Growth spurts require **dense proteins** (dal, soy/soy paneer, milk/curd, egg, fish/meat where acceptable), complex carbs, and vegetables.
- Encourage sports; ensure iron/calcium sufficiency to prevent occult deficiencies.

### 13-18 years (adolescence)

- **Higher energy & protein** for rapid growth; address **iron (girls), calcium/vitamin D, folate, zinc**.
- Discourage fad diets, meal-skipping; ensure **hydration** for sport.

### Quick RDA anchors (ICMR-NIN 2020)

(Indicative daily totals; adjust for body size & activity.)

Age	Energy (kcal/day)	Protein (g/day)
6-12 months	~670	~9
1-3 y	~1010	~9-10
4-6 y	~1360	~13
7-9 y	~1700	~19
10-12 y (boys/girls)	~2220 / 2060	~26 / ~27
13-15 y (boys/girls)	~2860 / 2400	~36 / ~34
16-18 y (boys/girls)	~3320 / 2500	~45 / ~37

Sources synthesize ICMR-NIN 2020 recommendations.

**Ayurvedic rationale:** Choose foods by **doṣa/ṛtu/deśa**; aim for **mātrā** (right quantity) per the Caraka verse above—i.e., that which digests timely without disturbing prakṛti.

### Macrominerals

Nutrient	Principal Sources	Functions
Calcium	Milk and milk products, meat, fish, eggs, cereals, beans, fruits, vegetables	Bone and tooth formation, blood coagulation, nerve transmission, muscle contraction, myocardial conduction
Chloride	Many foods, mainly animal products but some vegetables; similar to sodium	Blood and intracellular acid-base balance, osmotic pressure, kidney function
Potassium	Many foods, including whole and skim milk, bananas, prunes, raisins, and meats	Muscle contraction, nerve transmission, intracellular acid-base balance, water balance
Magnesium	Green leaves, nuts, cereals, grains, seafood	Bone and tooth formation, nerve transmission, muscle contraction, enzyme activation
Sodium	Many foods, including beef, pork, sardines, cheese, green olives, corn bread, potato chips, and sauerkraut	Blood and intracellular acid-base balance, osmotic pressure, muscle contraction, nerve transmission, maintenance of cell membrane gradients
Phosphorus	Milk, cheese, meat, poultry, fish, cereals, nuts, legumes	Bone and tooth formation, blood and intracellular acid-base balance, energy production

### Recommended Dietary Reference Intakes\* for Some Macronutrients, Food and Nutrition Board, Institute of Medicine of the National Academies

Category	Age or Time Frame (year)	Protein (g/kg)	Energy(kcal/kg)	Calcium (mg/kg)	Phosphorus (mg/kg)	Magnesium (mg/kg)
Infants	0.0-0.5	2.2	108.3	66.7	50.0	6.7
	0.5-1.0	1.6	94.4	66.7	55.6	6.7
Children	1-3	1.2	100.0	61.5	61.5	6.2
	4-6	1.2	90.0	40.0	40.0	6.0
	7-10	1.0	71.4	28.6	28.6	6.1

Category	Age or Time Frame (year)	Protein (g/kg)	Energy(kcal/kg)	Calcium (mg/kg)	Phosphorus (mg/kg)	Magnesium (mg/kg)
Males	11-14	1.0	55.6	26.7	26.7	6.0
	15-18	0.9	45.5	18.2	18.2	6.1
	19-24	0.8	40.3	16.7	16.7	4.9
	25-50	0.8	36.7	10.1	10.1	4.4
	51+	0.8	29.9	10.4	10.4	4.5
Females	11-14	1.0	47.8	26.1	26.1	6.1
	15-18	0.8	40.0	21.8	21.8	5.5
	19-24	0.8	37.9	20.7	20.7	4.8
	25-50	0.8	34.9	12.7	12.7	4.4
	51+	0.8	29.2	12.3	12.3	4.3
Pregnant	—	0.9	4.6	18.5	18.5	4.9
Breastfeeding	1st year	1.0	7.9	19.0	19.0	5.4

\*These amounts, expressed as average daily intakes over time, are intended to provide for individual variations among most healthy people living in the US under usual environmental stresses.

## 5) Methods to improve Vyādhikṣamatva (immunity) & Bala; Swarna-prāśana and Lehana

### Concepts

- **Bala** is the functional expression of **Ojas**—the essence of dhātus; depletion → vulnerability to disease.
- **Vyādhikṣamatva** = resistance to disease (prevention) + capacity to recover (resilience).

### Core measures (integrated practice)

1. **Nidrā-Āhāra-Brahmacarya (tri-upasthambha)**: age-appropriate sleep timing, balanced diet (see Section 4), screen-time hygiene. (Refer *Aṣṭāṅga Hr̥daya* Mātrāsītīya for diet conduct.)
2. **Daily regimen (snehana/snāna/abhyanga as per season)**: gentle **abhyanga** (sesame/coconut oil per climate) improves skin barrier, calms vāta.
3. **Play/exercise & sunlight**: bone/muscle health; circadian anchoring (vitamin D).
4. **Micro-nutrient sufficiency**: iron, vitamin A, D, zinc (diet first; supplements only when indicated).
5. **Preventive care**: full **immunization** (Section 6), deworming as per national directives, oral hygiene.

### Lehana (palatable pediatric rasāyana/ medicated linctus)

- Classical pediatric practice to promote **medhā-agni-bala**, using age-suitable, mild **medhya dravyas** (e.g., ghr̥ta-based formulations) under physician supervision. (*Kāśyapa Saṃhitā*, *Sūtrasthāna*, *Lehādhyāya* describes the indications and formulations.)
- **Indications (traditional)**: poor appetite, low weight, recurrent illness; **Contra-indications**: acute fever, diarrhea, active infections.

### Swarna-prāśana (gold-based pediatric samskāra)

- Described in **Kāśyapa Saṃhitā** (*Lehādhyāya*) as a **medhā-bala** promoting samskāra given with ghr̥ta/madhu in minute dose. (Textual basis widely cited in Ayurvedic pediatrics literature.)
- **Current practice (prudent approach)**:
  - Use only **pharmacopeial**, quality-assured preparations; avoid unregulated metallic products.
  - Dose/timing strictly as per treating Vaidya; defer during fever/illness; monitor for allergy.
  - Communicate that modern evidence is evolving; it is **complementary** to—not a substitute for—**national immunization**.



**Remember:** From Suśruta, **Ojas = Bala**; building dhātu-sāratā through right diet/sleep/regimen is foundational; rasāyana/lehāna are **adjuncts**.

## 6) Universal Immunization Programme (UIP) & National Immunization Schedule (NIS) – India

**Aim:** Protect children against vaccine-preventable diseases (VPDs) free of cost under MoHFW's UIP. India currently immunizes nationally against **12 VPDs** (JE in endemic districts).

### NIS (operational, 2023-2025) – pediatric components (summary)

Age	Vaccine(s)	Notes (dose/route/site)
At birth	BCG; <b>OPV-0</b> ; <b>Hep-B birth dose</b>	BCG 0.05-0.1 ml ID (L UA); OPV 2 drops oral; Hep-B 0.5 ml IM (anterolateral thigh).
6 weeks	<b>Pentavalent-1</b> (DPT-HepB-Hib), <b>OPV-1</b> , <b>fIPV-1</b> , <b>RVV-1</b> , <b>PCV-1</b>	fIPV 0.1 ml <b>ID</b> right UA; RVV oral; PCV IM.
10 weeks	<b>Pentavalent-2</b> , <b>OPV-2</b> , <b>RVV-2</b>	
14 weeks	<b>Pentavalent-3</b> , <b>OPV-3</b> , <b>fIPV-2</b> , <b>RVV-3</b> , <b>PCV-2</b>	fIPV 0.1 ml <b>ID</b> right UA.
9 months	<b>MR-1</b> , <b>PCV-Booster</b> , ( <b>JE-1</b> in endemic districts), <b>fIPV-3</b>	fIPV-3 <b>ID left UA</b> (MR uses right UA).
16-24 months	<b>MR-2</b> , <b>DPTBooster-1</b> , ( <b>JE-2</b> in endemic districts)	
5-6 years	<b>DPT-Booster-2</b>	
10 & 16 years	<b>Td</b> (replacing TT)	
<b>Vitamin A</b>	1st dose <b>1 lakh IU</b> with MR-1; then <b>2 lakh IU</b> every 6 months till 5 years (total 9 doses)	Delivered via biannual rounds (ICDS link).

**Recent operational update:** fIPV **three-dose** schedule (6 w, 14 w, **9 m**) in routine immunization, with the 9-month dose aligned to MR-1 session flow.

**HPV (adolescent girls):** NTAGI recommended introduction into UIP with a catch-up (9-14 y) followed by routine at 9 y; the Union Budget 2024 **encouraged** vaccination. As of latest official communication, nationwide UIP rollout decision was **pending**; states may run pilots/initiatives. (Quote policy updates in viva with dates.)

**Digital support:** **U-WIN** platform for end-to-end immunization records (pregnant women to 17 years).

## 7) Reproductive & Child Health (RCH) / RMNCH+A – overview

### Evolution & scope

- **RCH-I (1997)** → **RCH-II (2005-2013)** under NRHM → integrated **RMNCH+A Strategy (2013)** adopting **continuum of care** across **Reproductive, Maternal, Newborn, Child & Adolescent** health, later expanded as **RMNCAH+N** (adds **Nutrition**).

### Key programmatic packages you should recall:

- **Maternal:** JSY (cash incentive for institutional delivery); JSSK (free drugs/diagnostics/diet/transport for PW & sick infants); **PMSMA** (fixed-day, 9th of every month ANC by specialists); **LaQshya** (quality improvement in labour rooms & maternity OTs); **SUMAN** (dignified, assured services).
- **Newborn/Child:** **FBNC** (SNCU/NBSU), **HBNC/HBYC** home visits, **MAA** (breastfeeding), **IMNCI**, **Vitamin A**, **Universal Immunization** (UIP), **RBSK** (child screening for 4Ds).

- **Adolescent (RKSK):** AFHCs, WIFS (weekly iron-folic acid), School Health & Wellness.

**How to write a short note (exam angle):** Define RCH/RMNCH+A, state goals (reduce MMR/IMR, universal coverage & quality), list **5-6 flagship schemes**, add one sentence each on delivery mechanism (fixed day/teams/digital), and quote **continuum of care** linkage.

## A. One-day pediatric diet templates (illustrative; adjust for appetite & cultural context)

Age	Early morning	Breakfast	Lunch	Evening	Dinner
6-8 mo	BF	Ragi porridge (thin)	Mashed rice-dal + ghee	Banana mash	BF
9-12 mo	BF	Suji upma (soft) + curd	Rice-dal-veg mash + ghee	Fruit pieces (soft)	Khichri (thick) + ghee
1-3 y	Milk	Veg poha + peanuts powder	Rice/chapati + dal + veg + curd	Fruit	Khichri + ghee / egg curry + rice
4-6 y	Water	Paratha + curd + fruit	Chapati + dal + subzi + salad	Roasted chana	Rice + veg + paneer/egg/fish
7-12 y	Water	Idli/dosa + sambar + fruit	Chapati/rice + dal + veg + curd	Nuts/fruit	Millet roti + dal + veg
13-18 y	Warm water	Stuffed paratha + curd + fruit	Rice + dal/rajma/chana + veg + salad	Buttermilk + peanuts	Chapati + paneer/egg/fish + veg

(BF = breastfeeding)

## Self-check (rapid)

1. Define **Vyādhiḥṣamatva** and relate it to **Ojas** with a classical reference.
2. Write the NIS **9-month** visit vaccines (current).
3. List any **four** schemes under **RMNCH+A** and one-liner on each.
4. Justify starting complementary feeding at **6 months** from both Ayurvedic and modern perspectives.

## References

### Classical

- **Caraka Saṃhitā**, Sūtrasthāna 5 *Mātrāśītiya* (diet quantity): verified text & translation.
- **Suśruta Saṃhitā**, Sūtrasthāna 15 (definition of **Ojas/Bala**).
- **Kāśyapa Saṃhitā**, Sūtrasthāna *Lehādhyāya* (pediatric lehana/samskāras) — chapter coverage.

### Modern standards & policy

- **ICMR-NIN (2020)** recommendations on energy/protein & nutrient guidance.
- **MoHFW/NHM - Routine Immunization:** NIS & operational manuals (including fIPV 3-dose update).
- **Universal Immunization Programme overview** (12 VPDs; JE sub-national).
- **Vitamin A program** & biannual rounds.
- **HPV policy status** (NTAGI recommendation; official update on rollout decisions; budget note encouraging vaccination).
- **U-WIN** digital immunization platform.
- **RMNCH+A Strategy (2013)** and RMNCAH+N program elements; PMSMA/LaQshya/JSY/JSSK/SUMAN/HBNC-HBYC/RKSK.



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### Short answer prompts (practice)

- **SAQ 1 (3 marks):** Explain “mātrā” of diet with Caraka’s definition and give two clinical cues for under/over-feeding in toddlers.
- **SAQ 2 (3 marks):** Outline three pillars to enhance Vyādhikṣamatva in a school-going child.
- **SAQ 3 (5 marks):** Write the National Immunization Schedule from birth to 16 years (headings only).
- **SAQ 4 (5 marks):** Enumerate components of RMNCH+A and briefly describe RBSK & HBYC.

Tip for answers: Always anchor diet quantity to **Mātrāśītiya śloka**, immunity to **Ojas-Bala śloka**, and NIS to the latest **MoHFW RI Manual** plus the **fIPV 3rd dose** update with month-wise details.

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