NGN NCLEX • PEDIATRIC ONCOLOGY

RHABDOMYOSARCOMA (RMS)

Most common soft tissue sarcoma in children • 2026 Test Plan

📌 FOCUS: Recognize Cues → Prioritize → Take Action

#1	2–6 yrs	70%	♂ > ♀
Soft Tissue Sarcoma in Kids	Peak Age (also adolescence)	5-Year Survival Rate	Slight Male Predominance

🧬 WHAT IS IT?

- **Rhabdomyosarcoma (RMS)** = malignant tumor of embryonic mesenchymal cells that were meant to become **striated (skeletal) muscle**.
- Can arise **ANYWHERE** in the body — even in sites that don't normally have skeletal muscle.
- Highly aggressive — spreads early via **lymph nodes, lungs, bone, and bone marrow**.

📍 COMMON TUMOR SITES (by frequency)

🧠 **Head & Neck** (orbit, nasopharynx, middle ear)	~40%
🫁 **Genitourinary** (bladder, prostate, vagina)	~25%
💪 **Extremities** (arms/legs)	~20%
🫀 **Trunk & Other** sites	~15%

🔬 HISTOLOGIC TYPES — Know the Difference!

Type	Age	Location	Prognosis
Embryonal *(most common ~60%)*	Young children (< 6 yrs)	Head/Neck, GU	BETTER ✓
Alveolar	Adolescents / Teens	Extremities, Trunk	WORSE ✗
Pleomorphic	Adults (rare in peds)	Extremities	VARIES

💡 **Special Variant:** *Sarcoma botryoides* — "grape-like" cluster, embryonal subtype, arises in **vagina, bladder, nasopharynx**.

🚨 SIGNS & SYMPTOMS — By Location (Recognize Cues!)

- 👁️ **Orbit:** Proptosis (bulging eye), ptosis, periorbital swelling, strabismus
- 👃 **Nasopharynx:** Nasal obstruction, epistaxis, dysphagia, chronic sinusitis, voice change
- 👂 **Middle Ear:** Chronic otitis media unresponsive to abx, facial nerve palsy, ear drainage
- 🚽 **Bladder/Prostate:** Hematuria, urinary retention/frequency, obstruction
- 🌸 **Vagina:** Bleeding, grape-like mass protruding through introitus (botryoides)
- 💪 **Extremity:** PAINLESS, firm, enlarging mass — often mistaken for injury

🔍 DIAGNOSTICS

- **CT / MRI** of primary tumor site
- **Biopsy** = DEFINITIVE diagnosis (histology)
- **Bone marrow aspiration** → rule out metastasis
- **Chest CT** → lung mets (most common site)
- **PET / Bone scan** → distant spread
- **LP** → if parameningeal site
- **CBC, CMP, LDH, uric acid**

💊 TREATMENT — "Triple Threat"

- **1. Surgery** → resection if tumor is accessible
- **2. Chemotherapy** → ALWAYS given (VAC regimen ↓)
- **3. Radiation** → for local control / residual disease

V	A	C
Vincristine	**Actinomycin-D**	**Cyclophosphamide**
⚠ Neurotoxicity	⚠ Mucositis, N/V	⚠ Hemorrhagic cystitis

👩‍⚕️ NURSING PRIORITIES (Take Action!)

- 🛡️ **Infection:** Neutropenic precautions — private room, NO fresh flowers/live plants, no raw fruits, strict hand hygiene
- 🌡️ **Fever:** Temp ≥ 38°C (100.4°F) in neutropenic child = EMERGENCY → blood cultures + IV antibiotics STAT
- 💧 **Hydration:** For cyclophosphamide → aggressive IV hydration + MESNA to prevent hemorrhagic cystitis; monitor for hematuria
- 🍽️ **Nutrition:** Small frequent meals, antiemetics (ondansetron) before chemo, mouth care for mucositis
- 😣 **Pain:** PCA pump as appropriate, non-pharm (distraction, play therapy)
- 🩸 **Labs:** Monitor CBC — hold chemo if ANC < 500 or platelets < 50,000
- 💇 **Body image:** Prepare for alopecia, weight changes; connect to peer support
- ❤️ **Family:** Allow parents to room-in, sibling support, spiritual care, anticipatory guidance

🧠 NGN CLINICAL JUDGMENT — How NCLEX Tests RMS

1. Recognize Cues
Painless mass + progressive enlargement + proptosis in a toddler? Think RMS.

2. Analyze Cues
Age + location + biopsy findings drive the diagnosis and subtype.

3. Prioritize Hypotheses
Rule out infection first, but don't miss malignancy — persistent mass ≠ normal.

4. Generate Solutions
Plan multimodal therapy; coordinate with oncology, surgery, radiation.

5. Take Actions
Neutropenic precautions, hydration for chemo, pain/nausea mgmt, family teaching.

6. Evaluate Outcomes
Tumor size ↓, labs WNL, no infection, adequate nutrition, child/family coping.

🚩 NCLEX RED FLAGS — Call Provider IMMEDIATELY

- Fever ≥ 38°C (100.4°F) in neutropenic child
- New-onset proptosis or vision changes
- Painless, enlarging, firm mass anywhere
- Signs of tumor lysis syndrome (↑K^+, ↑PO_4, ↑uric acid, ↓Ca^{2+})
- Hematuria during cyclophosphamide therapy
- Vaginal bleeding / grape-like mass in young girl
- ANC < 500 or platelets < 20,000
- Persistent otitis media not responding to abx