NGN NCLEX 2026 STUDY SERIES

Kawasaki Disease

Acute Systemic Vasculitis · Pediatric Cardiac Emergency

PEDIATRICS | CARDIAC | IMMUNOLOGY | HIGH-YIELD NCLEX

1 Definition & Overview

Kawasaki disease (KD) is an **acute, self-limiting systemic vasculitis** of medium-sized arteries — most dangerously the **coronary arteries**. Cause is unknown (likely infectious trigger + genetic predisposition). **NOT contagious.**

👶 Who

- Children **under 5 years** (peak: 18–24 months)
- More common in boys
- Higher in Asian ancestry

❤️ Why It Matters

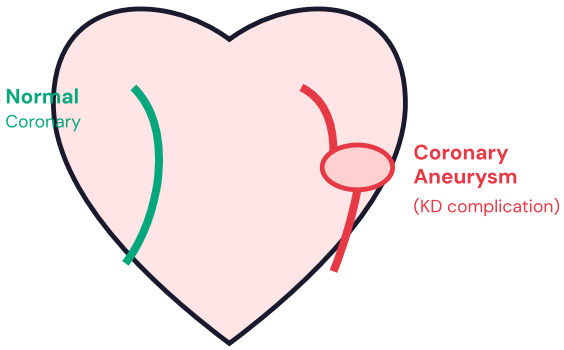
- #1 cause of **acquired heart disease** in U.S. children
- Can cause **coronary artery aneurysms**
- Risk of MI, sudden death

⏱️ Treatment Window

- Treat within **10 days** of fever onset
- Best outcomes if started Day 5–7
- Untreated: 25% develop aneurysm

2 Pathophysiology (Simplified)

1. **Trigger** — Unknown infectious or environmental agent activates the immune system in a genetically susceptible child.
2. **Immune Activation** — Massive inflammatory cytokine surge (IL-1, IL-6, TNF-α). T-cells and macrophages activate.
3. **Vasculitis** — Inflammation attacks medium-sized artery walls throughout the body — especially **coronary arteries**.
4. **Vessel Wall Damage** — Damaged elastic layer → arterial wall weakens → **aneurysm formation** (highest risk weeks 2–4).
5. **Complications** — Thrombosis in aneurysm → coronary occlusion → **MI, ischemia, sudden cardiac death**.



Coronary Artery Damage in KD

3 The Three Phases

PHASE 1

Acute

DAYS 1–14

- Sudden **high fever ≥5 days**
- All classic CRASH signs appear
- Extreme irritability
- Child looks very sick
- Myocarditis possible

PHASE 2 ⚠️

Subacute

WEEKS 2–4

- Fever resolves
- **Desquamation** (skin peeling) of hands/feet
- Thrombocytosis peaks (↑↑ platelets)
- **HIGHEST risk of aneurysm** 🚨
- Arthritis, irritability persist

PHASE 3

Convalescent

WEEKS 4–8

- Symptoms resolve
- Labs normalize
- Energy returns
- Beau's lines on nails appear
- Follow-up echo essential

4 Signs & Symptoms — CRASH & BURN

📋 **Diagnostic Criteria:** Fever ≥5 days *(BURN)* + at least **4 of 5** classic features *(CRASH)*.

★ CRASH ★

C	R	A	S	H
Conjunctivitis (bilateral, non-purulent)	Rash (polymorphous, trunk)	Adenopathy (cervical, unilateral)	Strawberry Tongue + cracked red lips	Hands & Feet red, swollen, peeling

+ B·U·R·N

🔥 Fever ≥ 102°F (38.9°C) lasting ≥ 5 DAYS — unresponsive to antipyretics

Letter	What to Look For	Clinical Pearl
C	Red, dry eyes **without discharge**; bilateral	If purulent → think bacterial conjunctivitis instead
R	Diffuse, polymorphous rash on trunk; often in diaper area	Not vesicular, not bullous — that suggests other diagnoses
A	Single enlarged cervical node, **≥1.5 cm**, unilateral	Least common feature — only ~50% of cases
S	Strawberry tongue, dry/cracked/red lips, oropharyngeal redness	No oral ulcers or exudate (rules out other infections)
H	Erythema/edema of palms & soles → **desquamation** in week 2	Peeling starts at fingertips — classic subacute sign

🚨 RED FLAGS — Notify Provider Immediately

- 🚨 Persistent fever despite IVIG (treatment-resistant KD)
- 🚨 Chest pain, irritability with diaphoresis, poor perfusion → possible MI in a child
- 🚨 New murmur, gallop rhythm → carditis
- 🚨 Abdominal pain with hydrops of gallbladder

- Signs of shock (Kawasaki Disease Shock Syndrome — rare but lethal)

5 Pharmacology

DRUG	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
IVIG (Intravenous Immunoglobulin)	Modulates immune response; reduces inflammation in coronary arteries	Fluid overload, fever, chills, headache, anaphylaxis (rare)	Single dose 2 g/kg over 10–12 hrs. **Delay live vaccines (MMR, varicella) × 11 months.** Monitor for fluid overload — risk of CHF in children with myocarditis.
High-dose Aspirin (Acetylsalicylic acid)	Anti-inflammatory (acute) → antiplatelet (after fever resolves)	GI upset, bleeding, **Reye syndrome risk**	**Only pediatric indication for ASA!** 80–100 mg/kg/day until afebrile 48–72 hrs, then 3–5 mg/kg/day × 6–8 weeks (or longer if aneurysm). Hold if exposed to varicella/flu.
Infliximab / Steroids (Second-line)	TNF-α inhibitor / corticosteroids — used in IVIG-resistant cases	Immunosuppression, infection risk	Given if fever persists 36 hrs after IVIG. Monitor temperature trends closely.

6 Priority Nursing Interventions (ABC + S)

A
AIRWAY

- ✓ Monitor for swallowing difficulty from oral lesions
- ✓ Offer cool fluids, soft foods
- ✓ Position upright if dyspneic

B
BREATHING

- ✓ Assess RR, SpO_2 q4h
- ✓ Watch for crackles → IVIG fluid overload
- ✓ Monitor for myocarditis signs

C
CIRCULATION

- ✓ Continuous cardiac monitoring
- ✓ VS q1–2h during IVIG
- ✓ Baseline & serial echocardiogram
- ✓ Assess perfusion, capillary refill

S
SAFETY / COMFORT

- ✓ Cool cloths, tepid baths
- ✓ Soft toothbrush, lip balm
- ✓ Quiet environment for irritability
- ✓ Strict I&O monitoring

⚡ Top Priority Actions

- **Administer IVIG within 10 days** of fever onset — best outcomes at days 5–7
- **Continuous cardiac monitoring** during and after IVIG infusion
- **Strict I&O + daily weights** — IVIG is a volume load, child may have myocarditis
- **Watch for anaphylaxis** first 15 minutes of IVIG (slow rate, monitor closely)
- **Cluster care** — irritability is severe; minimize stimulation
- **Hold aspirin** if exposed to varicella or influenza (Reye syndrome risk)

7 NCLEX Test Traps ⚠️

? Should a child with Kawasaki disease receive aspirin?

✗ COMMON WRONG ANSWER

"No — aspirin is never given to children because of Reye syndrome risk."

✓ CORRECT

YES. KD is the **exception** — high-dose ASA reduces inflammation in acute phase, then low-dose prevents clots. Hold only if child is exposed to varicella/flu.

? When is the highest risk for coronary aneurysm?

✗ COMMON WRONG ANSWER

"During the acute phase when fever is highest."

✓ CORRECT

Subacute phase (weeks 2–4) — when fever has resolved but platelets are rising and vessel wall is most damaged.

? Parent asks if siblings can catch Kawasaki disease.

✗ COMMON WRONG ANSWER

"Yes, isolate the child from siblings until fever resolves."

✓ CORRECT

KD is NOT contagious. No isolation needed. Siblings do not need prophylaxis.

? When can the child get the MMR vaccine after IVIG?

✗ COMMON WRONG ANSWER

"Resume the vaccine schedule as soon as the child is discharged."

✓ CORRECT

Delay live vaccines (MMR, varicella) for 11 months after IVIG — passive antibodies blunt vaccine response. Inactivated vaccines are fine.

? Which finding is the priority to report?

✗ COMMON WRONG ANSWER

"Peeling skin on the hands and feet."

✓ CORRECT

New murmur, chest pain, or arrhythmia — signals cardiac involvement. Desquamation is expected in subacute phase.

8 Patient & Family Education

💊 Medication Teaching

- Give aspirin **exactly as ordered** — do not stop early even when fever resolves
- Watch for bruising, nosebleeds, dark stools → report bleeding
- Avoid ibuprofen (interferes with aspirin's antiplatelet effect)
- Call provider if child is exposed to chickenpox or flu — risk of Reye syndrome

💉 Vaccine Schedule

- Delay **MMR and varicella for 11 months** after IVIG
- Inactivated vaccines (flu shot, DTaP) can continue on schedule
- Annual influenza vaccine is recommended (helps reduce Reye risk)

🏥 Follow-Up Care

- Echocardiogram at **diagnosis, 2 weeks, 6–8 weeks**
- Long-term cardiology follow-up if aneurysm present
- Report any chest pain, fainting, shortness of breath
- Keep all cardiology appointments — even when child seems well

🏠 Home Care

- Skin peeling is normal — moisturize, do not pull skin
- Irritability may last weeks — be patient, quiet environment
- Soft foods, cool fluids while mouth is sore
- Limit strenuous activity if aneurysm present
- KD is **not contagious** — siblings can be near the child

9 Memory Boosters & Mnemonics

🍓 "CRASH and BURN"

Conjunctivitis · **R**ash · **A**denopathy · **S**trawberry tongue · **H**ands & feet — plus **BURN** (high fever ≥5 days). Need fever + 4 of 5 features to diagnose.

🚗 "The Kawasaki child crashes & burns"

A motorcycle (Kawasaki brand) crashes and burns 🔥 — gives you the entire diagnostic picture: high **fever** (burn) plus the **CRASH** features.

💉 "IVIG = I Very Important Gift" — Give within 10 Days

IVIG is the **most important intervention** — must be given within **10 days** of fever onset to prevent coronary aneurysm. After 10 days, the window has closed.

🎯 "ASA is the Exception" — Aspirin in Pediatrics

Aspirin is normally **contraindicated** in children (Reye syndrome). KD is the **one exception**. Remember: *"A Strawberry Aspirin — only for Kawasaki kids."*

📅 "11 Months for Live Vaccines"

After IVIG, delay **live vaccines (MMR, varicella) for 11 months**. Think: "*IVIG keeps fighting for 11 months*" — passive antibodies blunt the vaccine response.

⚠️ "Subacute = Most Dangerous"

Fever's gone — looks like the worst is over, but **weeks 2–4 are the HIGHEST risk** for coronary aneurysm. Keep monitoring! Platelets are climbing, vessels are weakest.

10 NCJMM Clinical Judgment Scenario

🧠 **6-Step NCSBN Clinical Judgment Measurement Model applied to Kawasaki Disease.** Practice thinking like the test expects — layered, prioritized, action-oriented.

📋 **SCENARIO:** A 3-year-old boy is admitted with a 6-day history of fever (104°F unresponsive to acetaminophen), bilateral red eyes without drainage, swollen red lips, a polymorphous trunk rash, swollen red palms, and one enlarged cervical lymph node (2 cm). Mother reports the child is extremely irritable and refusing food. VS: HR 162, RR 38, BP 92/54, SpO_2 97%. WBC 18,500, platelets 620,000, CRP elevated, ESR 78.

1 Recognize Cues

Relevant findings: Fever ≥5 days, bilateral non-purulent conjunctivitis, cracked red lips/strawberry tongue, polymorphous rash, swollen red hands, unilateral cervical adenopathy >1.5 cm. Tachycardia, irritability. Labs: leukocytosis, thrombocytosis, elevated CRP/ESR.

2 Analyze Cues

Child meets diagnostic criteria: **fever ≥5 days + 5 of 5 CRASH features**. Lab pattern (elevated inflammatory markers, thrombocytosis) is consistent with KD. Tachycardia may reflect fever, dehydration, OR **early myocarditis** — must be evaluated. The child is in the acute phase, day 6.

3 Prioritize Hypotheses

Most likely: Kawasaki Disease, acute phase. **Highest concern:** coronary artery involvement → risk of aneurysm if untreated. **Rule out:** scarlet fever, measles, Stevens-Johnson syndrome, toxic shock, MIS-C. Highest priority risk = *cardiac complications*.

4 Generate Solutions

Anticipated orders: **baseline echocardiogram**, IVIG 2 g/kg single dose over 10–12 hours, high-dose aspirin (80–100 mg/kg/day), IV fluids, antipyretics, continuous cardiac monitoring, strict I&O, daily weights, infection workup to rule out alternatives.

5 Take Action

Priority actions: Initiate continuous cardiac monitoring → obtain baseline echo before IVIG → premedicate with acetaminophen/diphenhydramine if ordered → start IVIG slowly, monitor VS q15min × first hour → administer aspirin as ordered → cluster care to minimize stimulation → educate parents on diagnosis, treatment, vaccine delays.

6 Evaluate Outcomes

Expected outcomes within 48 hours: Fever resolves, irritability decreases, HR returns toward baseline. **Monitor for:** persistent fever (treatment-resistant KD — needs second IVIG or steroids), fluid overload from IVIG (crackles, gallop, ↑ weight), allergic reaction (rare), new murmur or arrhythmia. **Discharge readiness:** afebrile 48–72 hrs, parents teach-back on aspirin, follow-up echo scheduled, live vaccine delay understood.

★ Diane's NGN NCLEX 2026 Study Series ★

Kawasaki Disease · Pediatric Vasculitis · Cardiac Risk · Pharmacology · NCJMM Integration