NGN NCLEX 2026 · ENDOCRINE SYSTEM · HIGH-YIELD

Cushing's *Syndrome* & *Disease*

Too much cortisol — the body becomes cushioned in fat, fragile in skin, and flooded with sugar, sodium, and stress.

ENDOCRINE · ADRENAL CORTEX | CLINICAL JUDGMENT MODEL | PRIORITY CARE | RED-FLAG ALERTS

1 Definition & Overview

Syndrome vs. Disease — learn the difference in one glance

CUSHING'S SYNDROME

The Umbrella Term

Any cause of excess cortisol

- **#1 cause:** Long-term exogenous **glucocorticoid therapy** (prednisone)
- Adrenal tumor (primary)
- Ectopic ACTH (small-cell lung cancer)
- Cortisol is elevated regardless of source

CUSHING'S DISEASE

Pituitary-Driven

Specific cause: pituitary adenoma

- **Pituitary adenoma** → excess **ACTH**
- ACTH stimulates adrenal cortex → cortisol ↑↑
- Most common in women 20–40 y/o
- Treated with transsphenoidal hypophysectomy

> *All Cushing's Disease = Syndrome. Not all Syndrome = Disease.*

> 🧯 *Most common cause of Cushing's in the U.S. is **iatrogenic** — from steroid medications.*

2 Pathophysiology (Simplified)

Follow the cortisol cascade — what excess glucocorticoid actually does

Whatever the trigger, the endpoint is the same: too much cortisol flooding the body 24/7.

1 Trigger
Tumor · Steroid · Ectopic ACTH

→

2 ↑ Cortisol
Chronic excess

→

3 Systemic catabolism & Na⁺ retention
Break down, hold on

- **↑ Glucose** — Gluconeogenesis → hyperglycemia
- **↑ Sodium / ↓ Potassium** — Mineralocorticoid effect
- **↓ Protein / Bone / Skin** — Catabolic breakdown
- **↓ Immunity** — Infection & poor healing

3 Signs & Symptoms

The classic "cushioned" appearance — head to toe

Head-to-Toe Assessment

The classic Cushingoid silhouette

By Severity & Red Flags

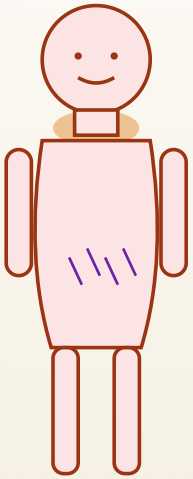
EARLY	Weight gain, fatigue, mood changes, menstrual irregularities, ↑ appetite, ↑ BP

Moon Face
Round, red, full cheeks

Buffalo Hump
Fat pad on upper back

Truncal Obesity
Central fat deposition

Purple Striae
On abdomen, thighs, breasts



Hirsutism / Acne
Facial hair in women

Thin, Bruised Skin
Easy bruising; slow healing

Thin Extremities
Muscle wasting in arms & legs

Pedal Edema
From Na^+ & H_2O retention

LATE
Moon face · Buffalo hump · Purple striae · Hirsutism · Muscle wasting · Osteoporosis · Hyperglycemia · Hypokalemia · Hypernatremia

RED FLAGS
Pathologic fractures (osteoporosis) · **Infection without fever** (masked by cortisol) · **Psychosis** · **GI bleed** (peptic ulcers) · **Adrenal crisis** if steroids stopped abruptly

4 Priority Nursing Interventions

ABCs, safety, and the NCJMM clinical judgment framework

A Assess & Monitor

- ✓ Daily weights & strict I&O
- ✓ Blood glucose Q6H (accucheck)
- ✓ BP and edema every shift
- ✓ K^+ (expect ↓) and Na^+ (expect ↑)
- ✓ Skin integrity, wound healing
- ✓ Mental status changes

S Safety First

- ✓ Fall precautions — osteoporosis risk
- ✓ Protect skin: pad bony prominences
- ✓ Turn Q2H; avoid tape directly on skin
- ✓ Private room if immunocompromised
- ✓ Limit visitors with infections
- ✓ Emotional support — mood lability & depression

N Nutrition & Diet

- ✓ ↓ **Sodium** (fluid retention)
- ✓ ↑ **Potassium** (bananas, oranges)
- ✓ ↑ **Protein** (muscle wasting)
- ✓ ↑ **Calcium & Vitamin D** (osteoporosis)
- ✓ Restrict calories — weight control
- ✓ Limit simple carbs (hyperglycemia)

✓ Signs of infection (fever may be absent!)

5 Pharmacology

Medications that suppress cortisol synthesis — plus surgical management

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Ketoconazole Antifungal, off-label	Inhibits cortisol synthesis enzymes	Hepatotoxicity, GI upset, gynecomastia	Monitor LFTs; avoid with antacids
Metyrapone	Blocks 11-β-hydroxylase in cortisol pathway	HTN, hirsutism, GI upset, dizziness	Monitor BP; watch adrenal insufficiency
Mitotane Adrenocortical inhibitor	Destroys adrenal cortex cells	GI distress, lethargy, rash, adrenal insufficiency	Give with meals; teach lifelong steroid replacement may be needed
Osilodrostat	Inhibits 11-β-hydroxylase (newer agent)	QT prolongation, adrenal insufficiency, fatigue	Baseline ECG; monitor cortisol & electrolytes
Pasireotide For Cushing's Disease	Somatostatin analog — ↓ ACTH from pituitary	Hyperglycemia, diarrhea, gallstones	Monitor BG closely — may need insulin

Transsphenoidal Hypophysectomy

Treatment for Cushing's DISEASE (pituitary adenoma)

- HOB elevated 30° post-op
- Avoid coughing, sneezing, straining, bending
- Watch for **CSF leak** (halo sign; glucose-positive drainage)
- Watch for **diabetes insipidus** (polyuria, dilute urine)
- Monitor for meningitis (neck stiffness, HA, fever)

Adrenalectomy

Treatment for adrenal tumor Cushing's SYNDROME

- Pre-op: glucocorticoids to prevent crisis
- Post-op: **lifelong hormone replacement** if bilateral
- Monitor for **adrenal crisis**: ↓ BP, fever, weakness
- Monitor BP — risk of hypotension
- Teach medic-alert bracelet for life

- No toothbrushing × 2 wks — use oral rinses

- Stress-dose steroids for illness/surgery

6 NCLEX Test Traps

Common mistakes — where Cushing's questions catch students off guard

⚠ Top Pitfalls — Learn Them Before the Test Does

1

Never stop steroids abruptly

Students select "D/C prednisone" when side effects appear. WRONG.

✓ Taper slowly to prevent Addisonian crisis

2

Low-grade infection with NO fever

Cortisol masks the fever response. Don't wait for a temperature spike.

✓ Assess wounds, WBC, & subtle changes

3

Syndrome ≠ Disease

If the question names a *pituitary adenoma*, it's Cushing's **DISEASE**. Any other cause = Cushing's **SYNDROME**.

4

Expect ↑ Na, ↓ K — not the reverse

Cortisol mimics aldosterone. Hypokalemia causes muscle weakness; don't confuse it with Addison's (opposite pattern).

5

Post-hypophysectomy priority: monitor for DI

Not the nose pack or headache — it's the sudden polyuria & dilute urine.

✓ Strict I&O + urine specific gravity

6

Nasal drainage after hypophysectomy

Clear drainage with glucose = CSF leak (not a cold). Check for a "halo sign" on gauze.

7

Weight gain isn't "nutritional"

It's fluid retention + abnormal fat distribution. Dietary counseling alone won't fix it.

8

Mood changes are PHYSIOLOGIC

Depression, psychosis, insomnia are cortisol-driven. Don't dismiss them as "stress from illness."

↔ Cushing's vs. Addison's — The Mirror

Opposite endocrine disorders — every sign is flipped

Same Gland · Opposite Problem

CUSHING'S (↑ Cortisol)		ADDISON'S (↓ Cortisol)
Too much — the body is "cushioned"		*Too little — the body is "addicted" to missing hormone*
▲ ↑ Blood Glucose	*vs*	▼ ↓ Blood Glucose
▲ ↑ Sodium (hypernatremia)		▼ ↓ Sodium (hyponatremia)
▲ ↓ Potassium (hypokalemia)		▼ ↑ Potassium (hyperkalemia)
▲ ↑ Blood Pressure		▼ ↓ Blood Pressure
▲ ↑ Weight (central obesity)		▼ ↓ Weight (wasting)
▲ ↑ Infection risk (masked fever)		▼ Dehydration, salt craving
▲ Moon face, buffalo hump, striae		▼ Bronze skin hyperpigmentation
▲ Hirsutism, thin skin, bruising		▼ Weakness, fatigue, N/V

7 Patient Education

What to teach before discharge — lifelong safety knowledge

💊 Medication Safety

- **Never** stop steroids abruptly — taper per MD
- Take prednisone **with food** to reduce GI upset
- Take morning dose to mimic natural cortisol rhythm
- Stress-dose rules: ↑ dose during illness, injury, surgery

🥗 Diet & Fluid

- Low-sodium, high-potassium, high-protein diet
- ↑ Calcium & Vitamin D for bones
- Limit sugary foods — prevents blood sugar spikes
- Weigh daily (same time, same scale, same clothing)

- Carry a **medic-alert bracelet** (lifelong)

- Report weight gain > 2 lbs/day

Infection Prevention

- Avoid crowds & sick contacts
- Frequent handwashing; good oral hygiene
- Report ANY signs of infection immediately
- Remember: fever may be absent — rely on other cues
- Keep vaccinations up to date (**no live** vaccines on high-dose steroids)

Injury & Bone Safety

- Fall-proof the home (grab bars, no loose rugs)
- Use non-slip shoes; change positions slowly
- Weight-bearing exercise as tolerated
- Gentle skin care — thin, fragile skin
- Emotional support — mood swings are physiologic

8 Memory Boosters

Mnemonics that stick — use them on test day

"Cushing's = Cushioned in cortisol"

Classic Triad

3 M's

- **M** oon face
- **M** ountain (buffalo) hump
- **M** arks (purple striae)

Cortisol Effects

3 S's

- **S** ugar ↑ (hyperglycemia)
- **S** alt ↑ (hypernatremia / HTN)
- **S** ex changes (amenorrhea, ↓ libido)

Lab Pattern

↑Na ↑Glu ↓K

- High sodium & glucose
- Low potassium
- Opposite of Addison's

Syndrome vs Disease

ACTH?

Who Gets It

CUSHING

Steroid Rule

SICK DAYS

Disease: ↑ ACTH from pituitary

Syndrome: ↑ cortisol from any cause

Disease is a *type of* Syndrome

C entral obesity

U lcers (peptic)

S tria & Skin thinning

H ypertension / Hirsutism

I nfections (masked)

N a & glucose ↑ / K ↓

G lucocorticoid excess

Illness/surgery → ↑ steroid dose

Never stop abruptly — taper

Medic-alert bracelet always

Carry emergency injection if Addison's develops

💡 Quick Recall

"If a patient looks round, red, and ripped open with stretch marks — think Cushing's. If they look thin, tan, and tired — think Addison's."