

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

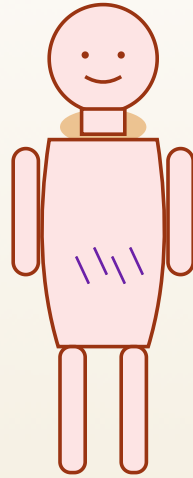
Fat pad on upper back

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 · Hyponatremia

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 — $\downarrow$ 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**: $\downarrow$ 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)

Too much — the body is "cushioned"

- ▲ ↑ Blood Glucose
- ▲ ↑ Sodium (hypernatremia)
- ▲ ↓ Potassium (hypokalemia)
- ▲ ↑ Blood Pressure
- ▲ ↑ Weight (central obesity)
- ▲ ↑ Infection risk (masked fever)
- ▲ Moon face, buffalo hump, striae
- ▲ Hirsutism, thin skin, bruising

VS

ADDISON'S (↓ Cortisol)

Too little — the body is "addicted" to missing hormone

- ▼ ↓ Blood Glucose
- ▼ ↓ Sodium (hyponatremia)
- ▼ ↑ Potassium (hyperkalemia)
- ▼ ↓ Blood Pressure
- ▼ ↓ Weight (wasting)
- ▼ Dehydration, salt craving
- ▼ Bronze skin hyperpigmentation
- ▼ 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."