CENTRAL ADRENAL INSUFFICIENCY (CAI) MASTER GUIDE

Understanding CAI, Empty Sella, and the Big Picture of Your Health

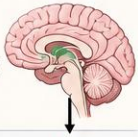
1. THE HORMONE CONTROL CENTER

The Hypothalamic–Pituitary–Adrenal (HPA) Axis

1 HYPOTHALAMUS

The CEO

Monitors stress, sleep, blood pressure, blood sugar, inflammation, temperature, and more.
When stress is detected, it sends a message.



2 PITUITARY GLAND

The Manager

Receives the message and releases ACTH (adrenocorticotropic hormone) into the bloodstream.
ACTH is the "text message" to the adrenal glands.



3 ADRENAL GLANDS

The Workers

Located on top of the kidneys.
When they receive ACTH, they produce cortisol (and other hormones).



CORTISOL'S KEY JOBS

Maintain blood pressure | Regulate blood sugar | Reduce inflammation | Support energy, mood & focus | Help the body handle stress

2. WHAT IS CENTRAL ADRENAL INSUFFICIENCY (CAI)?

In CAI, the adrenal glands are usually normal.
The problem is the pituitary isn't sending enough ACTH.

Hypothalamus (works) → Pituitary (underactive) → Adrenal Glands (under-stimulated)

Pituitary → Not enough ACTH

Adrenal Glands → Low Cortisol

LAB PATTERN IN CAI (Typical)

Test	Central AI (CAI)	Primary AI (Addison's)
AM Cortisol	Low	Low
ACTH	Low or Inappropriately Normal	High
Aldosterone	Usually Normal	Low
Potassium	Usually Normal	High
Sodium	Usually Normal or Low	Low

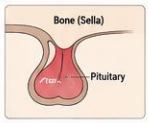
Your results: AM cortisol <1 and ACTH <5 ⟶ Classic for CAI

3. WHAT IS EMPTY SELLA?

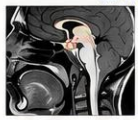
The pituitary sits in a bony cavity called the sella turcica.

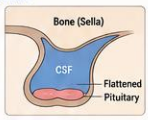
NORMAL





EMPTY SELLA





Cerebrospinal fluid (CSF) herniates downward, compressing the pituitary so it becomes thin or flattened. The gland is still there, but it may not function normally.

Important:
Many people have empty sella and never know it.
In some, it is associated with partial pituitary hormone deficiencies.

4. WHY CAN EMPTY SELLA CAUSE PROBLEMS?

The compressed pituitary may not make enough of one or more hormones.

Hormones that can be affected:

- **ACTH** → Low cortisol (CAI)
- **GH** → Growth hormone deficiency
- **TSH** → Thyroid hormone deficiency
- **LH/FSH** → Menopause/infertility, low sex hormones
- **Prolactin** → Breast milk production, etc.

Patterns

Any combination can be affected.
GH deficiency is often the first sign.
ACTH deficiency may develop years later.
This fits your history.

5. WHY DID I FEEL SO BAD BEFORE CORTISOL?

Without enough cortisol, your body cannot respond adequately to everyday life.

- Severe fatigue even after rest
- Lightheaded / low blood pressure
- Nausea, poor appetite
- Low blood sugar symptoms
- Muscle weakness and heaviness
- Brain fog, poor concentration
- Can't handle stress, illness, or activity
- Need long recovery times



Everything feels like climbing a mountain.

6. WHY DOES HYDROCORTISONE NOT MAKE ME FEEL "NORMAL"?

Hydrocortisone replaces **ONLY** one missing hormone.
It does not fix other contributing factors.



Cortisol is the gas. Many other systems need care for the car to run well.

7. WHY DO I CRASH AFTER ACTIVITY?

Healthy Person	With CAI
Activity / Stress	Activity / Stress
Cortisol rises	Needs more cortisol
BP & blood sugar stable	Not enough available
Muscles get energy	Fatigue, weakness, dizziness, brain fog
Recovery	Recovery takes much longer

VS.

Pacing + adequate cortisol dosing are essential.

8. STRESS DOSING: WHY & WHEN

Healthy bodies automatically make more cortisol during stress.
You cannot. You must replace it.

Level of Stress	Examples	What to Do
Mild (small increase)	Slight cold, extra activity, poor sleep	Add 5–10 mg hydrocortisone total per day
Moderate (moderate increase)	Fever <102°F, infection, injury, emotional stress	Add 10–20 mg hydrocortisone total per day
Severe (high increase)	Fever ≥102°F, vomiting, severe illness, surgery	Double or triple daily dose as directed
Emergency (very high)	Can't keep pills down, severe illness, trauma, surgery	Injectable hydrocortisone and seek ER care

Always follow the plan given by your endocrinologist.
When in doubt, treat as if it is significant.

9. OTHER PITUITARY HORMONES TO MONITOR

Because you have empty sella and multiple deficiencies, **periodic monitoring is important.**

Hormone	Why it matters
ACTH (cortisol)	Energy, stress response, BP, blood sugar
TSH (thyroid)	Metabolism, temperature, energy
Growth Hormone (GH)	Muscle, strength, body composition, heart, bones, quality of life
LH / FSH	Sex hormones, menopause, fertility
Prolactin	Breast health, menstrual function
ADH (vasopressin)	Water balance (rarely affected but important)

Most endocrinologists recheck annually or if symptoms change.

10. LIVING WELL WITH CAI

- Take medication exactly as prescribed
- Never skip doses
- Know your stress dose plan
- Wear medical ID (adrenal insufficiency)
- Carry emergency injectable hydrocortisone if prescribed
- Stay hydrated
- Balance rest and activity (pacing is key)
- Eat regular, balanced meals with protein
- Get good sleep
- Treat other conditions: dysautonomia, MCAS, menopause, GH deficiency, etc.

You are not fragile. You are managing a real medical condition. Knowledge, preparation, and self-advocacy are your power.

11. ADRENAL CRISIS: WARNING SIGNS

- Severe vomiting or diarrhea
- Can't keep medication down
- Severe weakness or confusion
- Dizziness / fainting
- Low blood pressure
- Severe abdominal pain
- Shaking, sweating, feeling very ill

What to do:

1. **Inject hydrocortisone (if you have it)**
2. **Call 911 or go to ER**
3. **Tell them: "I have adrenal insufficiency."**

12. CAN PEOPLE LIVE NORMAL LIVES?

Yes. Many people with CAI:

Work | Exercise | Travel | Have Families | Live Full Lives

The keys are:

- ✓ Correct hydrocortisone replacement
- ✓ Knowing when to stress dose
- ✓ Medical ID & emergency plan
- ✓ Treating other hormone deficiencies
- ✓ Regular follow-up with your care team
- ✓ Pacing and self-care
- ✓ Nutrition, movement, and sleep
- ✓ Avoiding adrenal crisis

Recovery is a journey, not a race.
You are doing the right things.
Small steps create real progress over time.



QUESTIONS TO DISCUSS WITH YOUR ENDOCRINOLOGIST

- ☑ Is my empty sella the likely cause of my ACTH deficiency?
- ☑ Should my other pituitary hormones be rechecked periodically?
- ☑ Is my hydrocortisone dose and timing optimized for how I feel?
- ☑ Could growth hormone replacement improve my strength, body composition, and quality of life in my situation?
- ☑ Should I have periodic pituitary follow-up because I have both empty sella and multiple pituitary hormone deficiencies?

REMEMBER

You have a real diagnosis.
You have a plan.
You are not alone.
Your body can heal,
and your future is still wide open.

USEFUL RESOURCES

- The Pituitary Network Association – **pituitary.org**
- The MAGIC Foundation – magicfoundation.org
- **Hormone Health Network – hormone.org**
- **NORD (National Organization for Rare Disorders) – rarediseases.org**
- **Your endocrinology care team**

