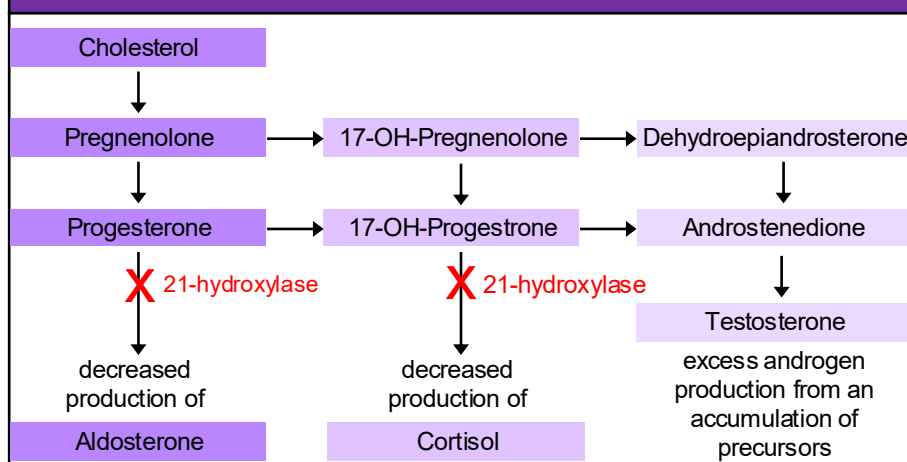




A group of genetic disorders causing cortisol deficiency, most commonly due to CYP21A2 mutations leading to **21-hydroxylase deficiency**.

Spectrum of disease and presentations including classic and non-classic.

SIMPLIFIED PATHOPHYSIOLOGY



PRESENTATIONS

Classic	Non-Classical
Severe, presents in infancy: salt-wasting (~75%) or simple virilizing Females: Ambiguous genitalia (clitoral enlargement, labial fusion, +/- a single vaginal-urethral opening) Males: Normal-appearing male genitalia +/- scrotal hyperpigmentation or enlarged phallus Both: If unrecognized may present with salt-wasting adrenal crisis (failure to thrive, vomiting, dehydration, hyponatremia, hyperkalemia, and shock).	Milder, late-onset (childhood/puberty) with partial 21-hydroxylase activity. May be asymptomatic, treat if symptomatic Females: hirsutism, oligomenorrhea Males: phallic enlargement Both: - Premature pubarche - Premature epiphyseal closure → short adult stature

DIAGNOSIS

Classic:

- Routine newborn screen: increased 17-hydroxyprogesterone (17OHP)
- Confirm: with serum 17OHP +/- ACTH stimulation test
- Plasma renin activity (differentiate salt-wasting vs. simple virilizing forms)
- Androstenedione and testosterone levels

Non-Classical:

- Suggested by serum 17OHP (>6 nmol/L before 8:00 am)
- ACTH stimulation test

MANAGEMENT OF CLASSIC CAH

Maintenance

- Glucocorticoid (prefer hydrocortisone) and mineralocorticoid (fludrocortisone) replacement
- Infants typically require sodium chloride supplementation
- Adrenal crisis education, stress-dose steroids (fever, vomiting/diarrhea, surgery, trauma)
- Monitor: growth velocity, pubertal progression or virilization, and bone age
- Recommend Medic-Alert Identification

Adrenal Crisis

- Initial isotonic fluid bolus + ongoing maintenance fluids accounting for volume depletion
- Initial hydrocortisone IV bolus 50 to 100 mg/m²/day
- Ongoing hydrocortisone 50 to 100 mg/m²/day ÷ q6h
- Closely monitor and treat electrolyte and glucose abnormalities as needed.