

# 11. Cortisol & the slow stress response

- A. Adrenal anatomy & cortisol biosynthesis
- B. Signaling mechanism
- C. Role in stress & metabolism
- D. Regulation
- E. Role as a drug & pathophysiology



# Let's talk stress

- Adrenal hormones respond to stress
- What is stress?
- A state of real or perceived threat to homeostasis
- Physiologic responses
  - Metabolic
  - Immune
- CNS integration
- Can be harmful

# Humans are exposed to many stresses

- Often >1 stress
  - Neurogenic
  - Systemic
- Integrated response
- Endocrine system maintains homeostasis
- Often down regulates stress response
- Homeostasis

Studying for  
Endocrinology exams

Emotional  
(depression)

Fear

Thirst

Hypothermia

Starvation  
(hypoglycemia)

Physical  
exertion

Infection

Injury