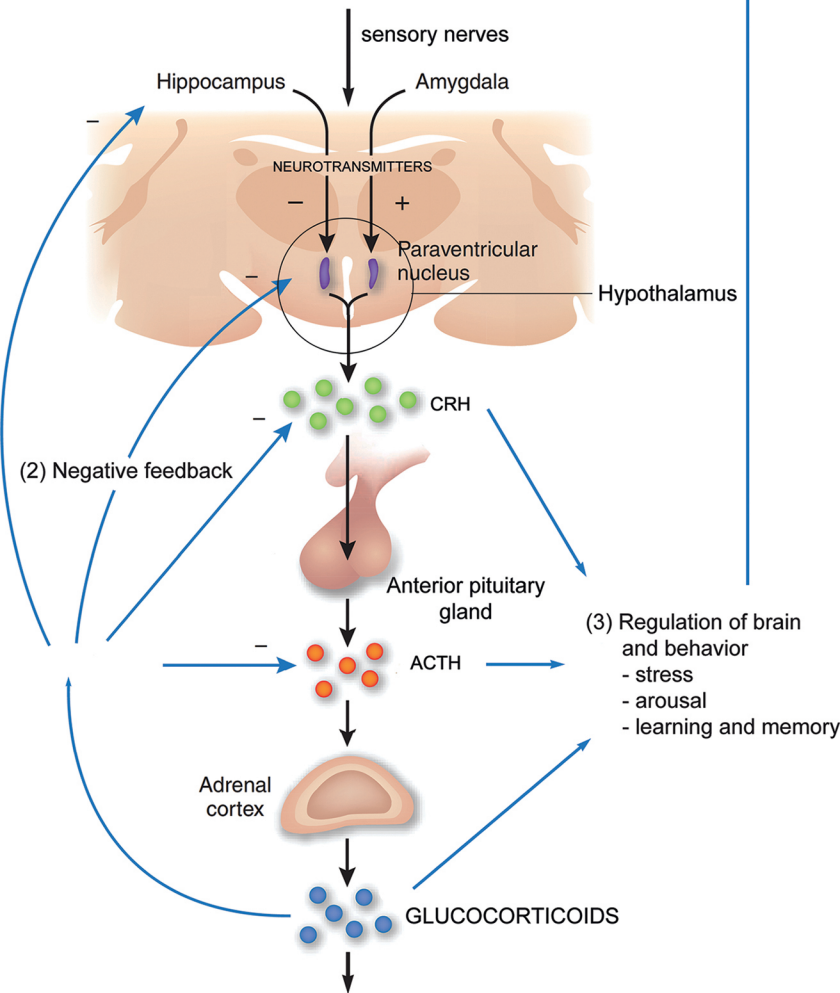
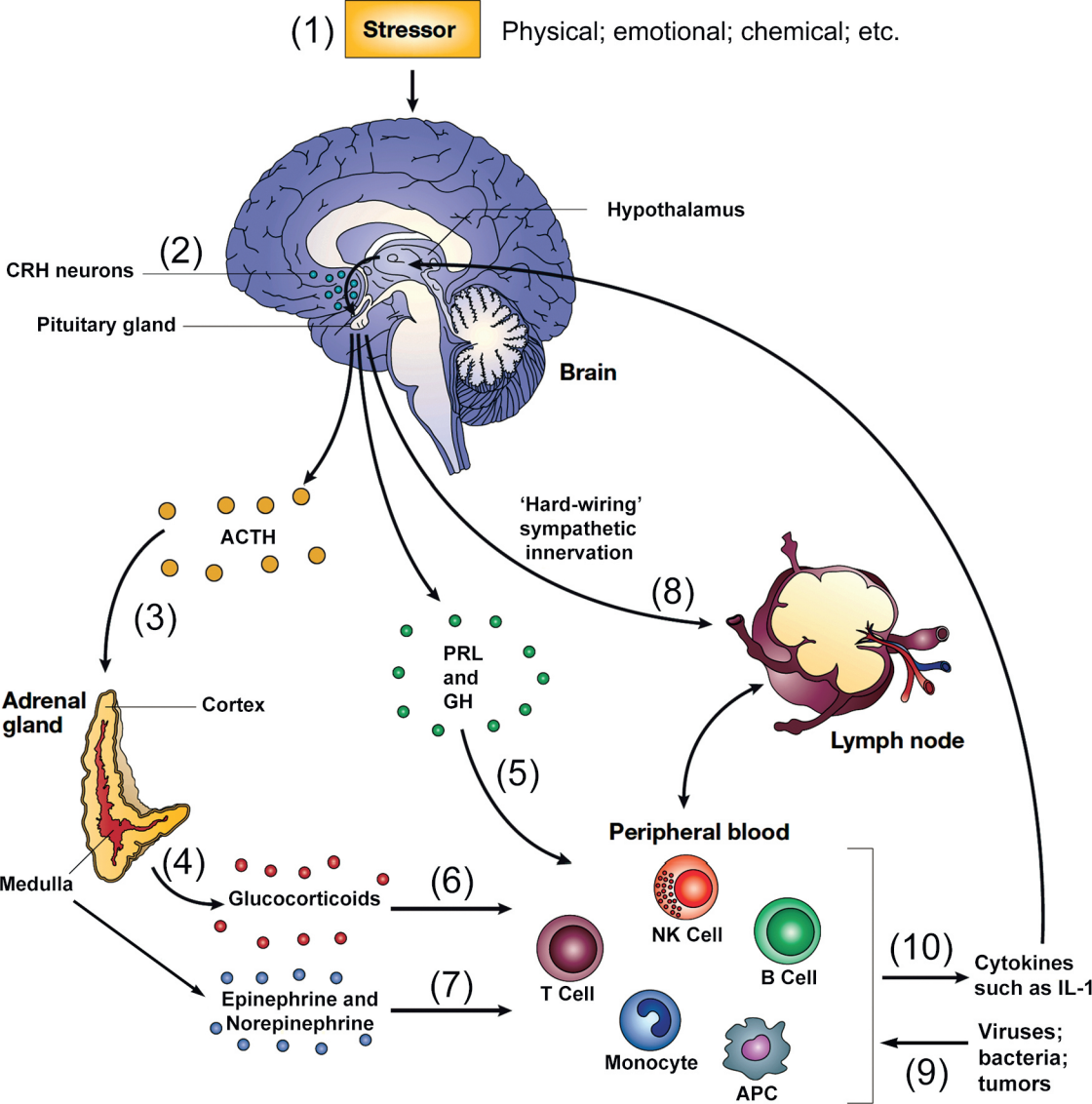


ENVIRONMENTAL STIMULI

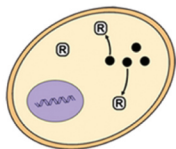


(1) PHYSIOLOGICAL RESPONSES

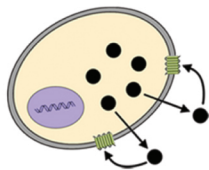
- Brain:** *neurochemical changes*
- Skeletal muscle:** *decreases protein synthesis*
decreases glucose uptake
- Adipose tissue:** *increases lipid mobilization*
decreases glucose uptake
- Liver:** *increases gluconeogenesis*
- Immune system:** *immunosuppression*



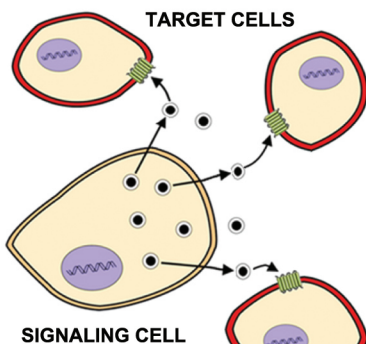
1. INTRACRINE



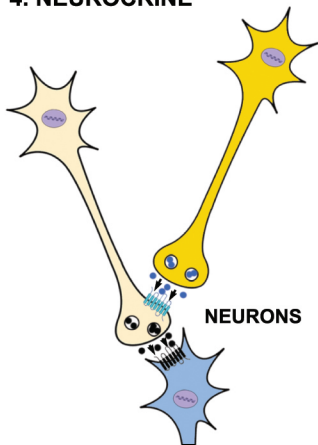
2. AUTOCRINE



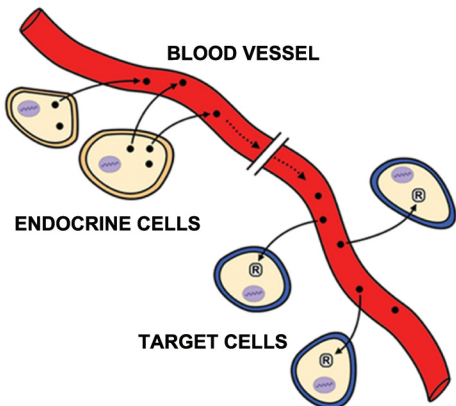
3. PARACRINE



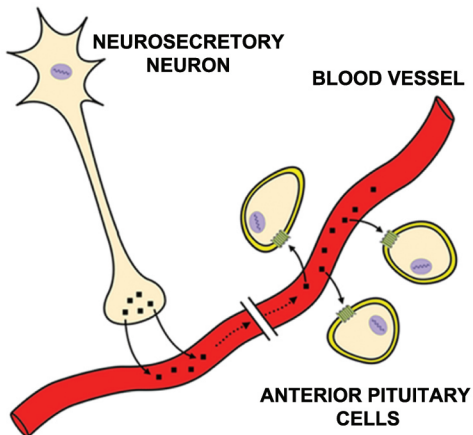
4. NEUROCRINE



5. ENDOCRINE



6. NEUROENDOCRINE



AGE: 3 yr
Wt: 42 kg



LEPTIN

AGE: 7 yr
Wt: 32 kg



BRAIN; CENTRAL NERVOUS SYSTEM; AUTONOMIC SYSTEM



NEUROTRANSMITTER

NEUROHORMONES

NEUROPEPTIDES

HORMONES

GROWTH FACTORS

CYTOKINES

Acetylcholine

Dopamine

Norepinephrine

Serotonin

GABA

Glutamate

Oxytocin

Vasopressin

GnRH

CRH

Somatostatin

TRH

Substance P

VIP

Opioids

CCK

Bombesin

Neurotensin

FSH, LH

Gonadal steroids

TSH

Thyroid hormones

ACTH

Corticosteroids

β -endorphin (?)

NGF

EGF

FGF

BDNF

TGF α

Interferons

Interleukins