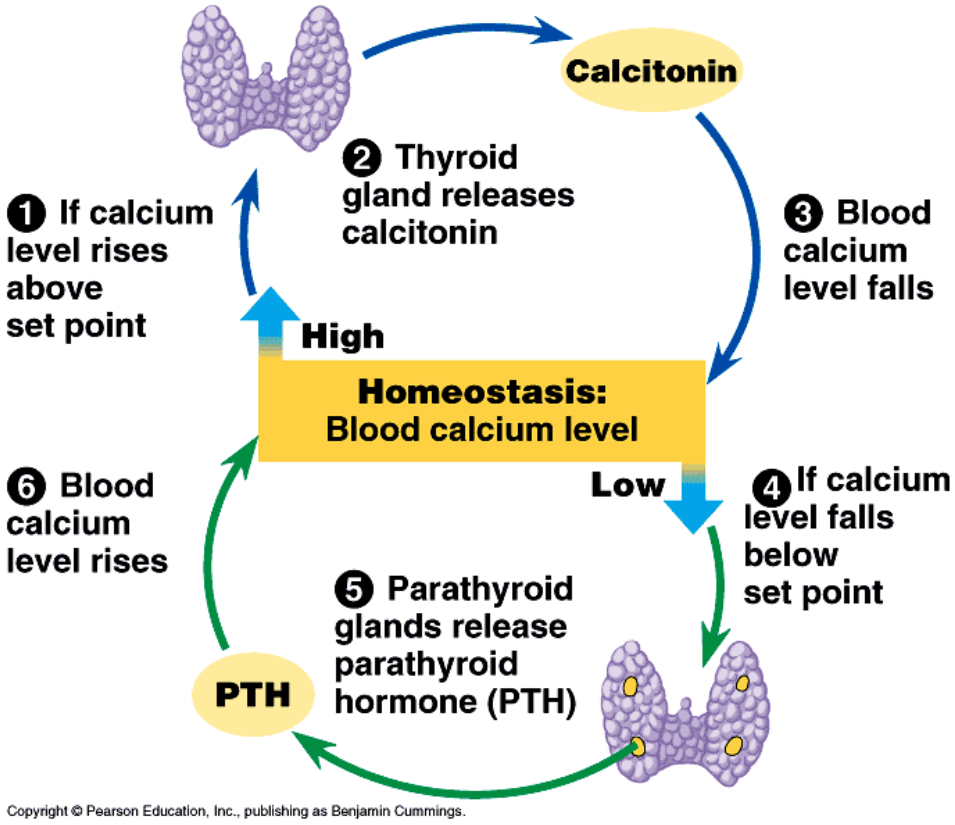
- Endocrine System

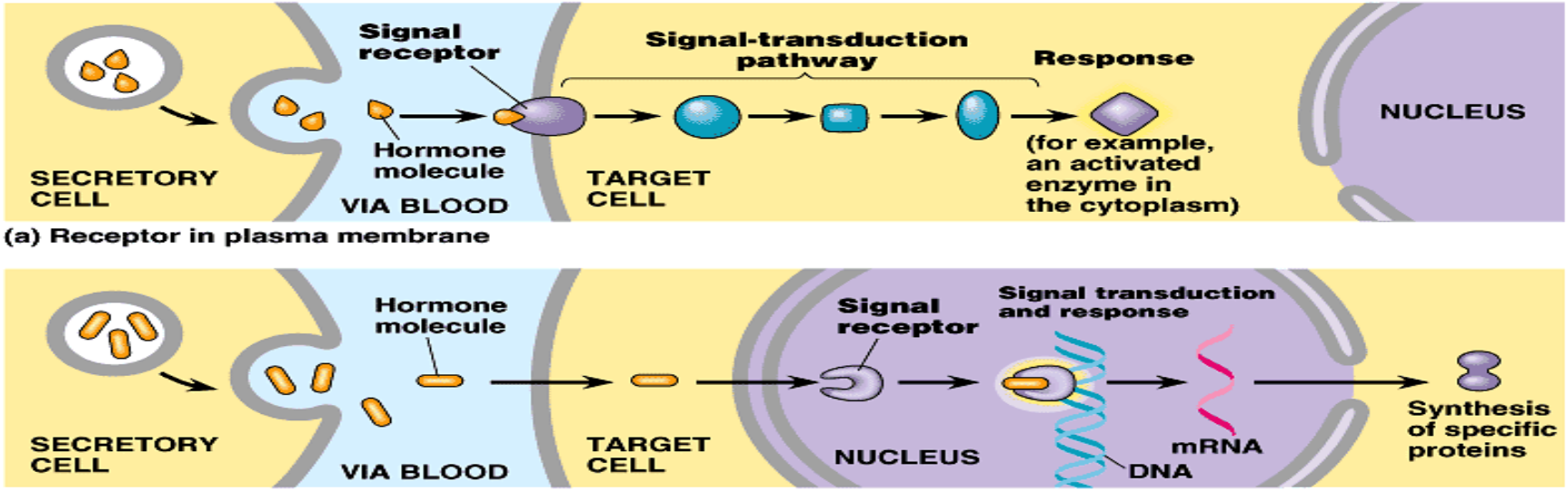
Regulatory systems

- **Hormone~ chemical signal secreted into body fluids (blood) communicating regulatory messages**
- **Target cells~ body cells that respond to hormones**
- **Endocrine system/glands~ hormone secreting system/glands (ductless); exocrine glands secrete chemicals (sweat, mucus, enzymes) through ducts**
- **Neurosecretory cells~ actual cells that secrete hormones**
- **Feedback mechanisms ~ negative and positive**



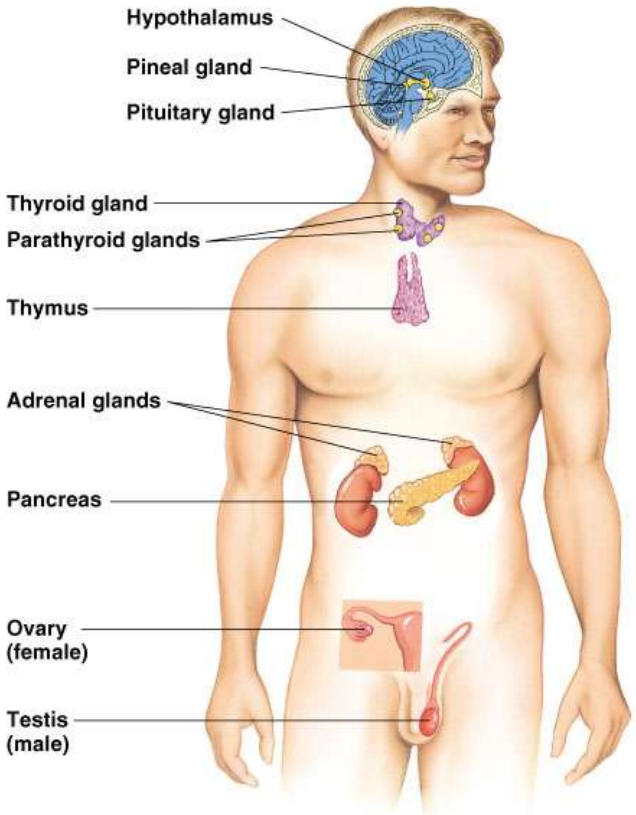
Mode of Action: Chemical Signaling

- **1- Plasma membrane reception**
  •signal-transduction pathways (neurotransmitters, growth factors, most hormones)
- **2- Cell nucleus reception**
  •steroid hormones, thyroid hormones, some local regulators



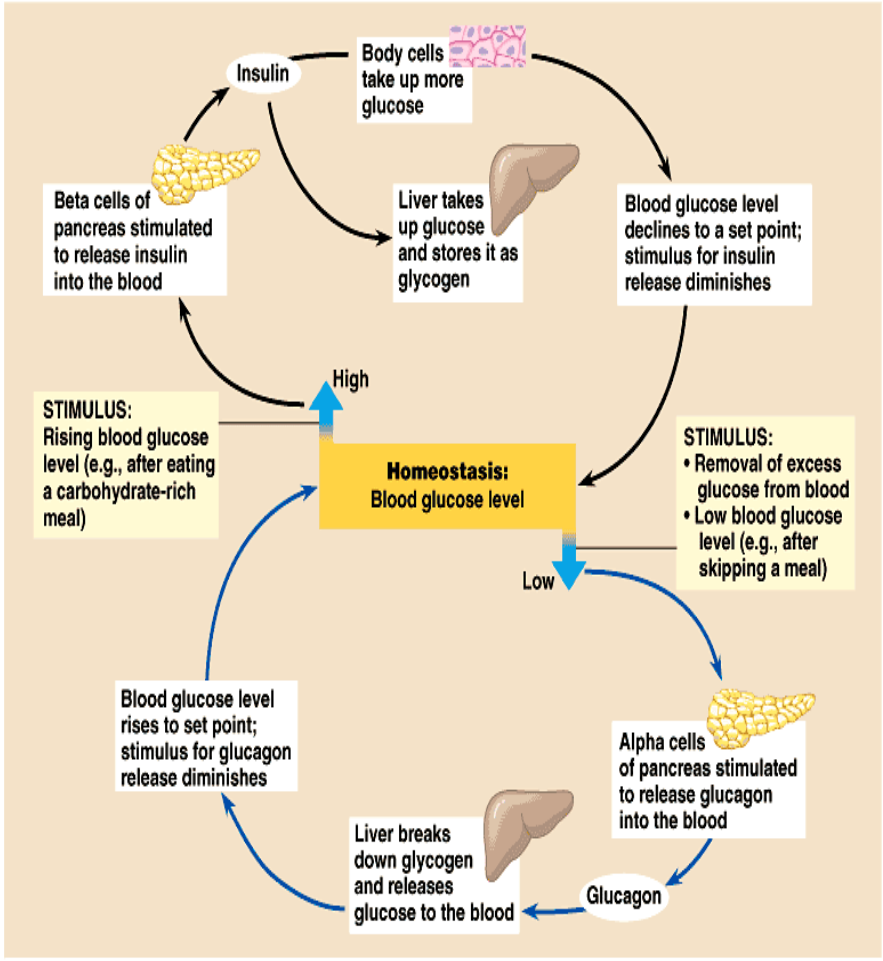
Vertebrate Endocrine System

- **There are many glands in the body, they each secrete specific hormones that cause reactions throughout the body.**
- **Some even excrete hormones that stimulate other glands to secrete more hormones**
- **Biological signaling is complex**
- **Hormones act within an organism while pheromones act between organisms**



The pancreas

- Islets of Langerhans
- Alpha cells:
  - •glucagon~ raises blood glucose levels
- Beta cells:
  - •insulin~ lowers blood glucose levels
- Type I diabetes mellitus (insulin-dependent; autoimmune disorder)
- Type II diabetes mellitus (non-insulin-dependent; reduced responsiveness in insulin targets)




diabetes
risk
glucose
insulin
type
blood
body
factors
pancreas
cells
people
diagnosed
causes
system
immune
disease
produces
Gestational
prevention
autoimmune
history
age
produced
family
percent
person
present
know
information
million
main
beta
passes
food
types
little
fuel
growth
Preventing
Get
Find
help
diabetic
form
sugar
source
body's
Symptoms
energy
eat
large
older
must
infection
extreme
appropriately
Understanding
adults
either
different
Almost
insulin-producing
environmental
ethnicity
condition
destruction
digestion
automatically
hormone
right
Overview
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steps
Thus
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occurs
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involved
thirst
aged
surprised
United
inactivity
part
builds
believe
year
Read
blurred
period
young
constant
fighting
common
urine
managing
behind
three
though

Diagnosis: Diabetes

"It wasn't really insulin. You don't have diabetes yet. It was just a warning shot."

- You will take the roll of a team of doctors with a newly diagnosed patient who has diabetes

- You will need to
  - Review the diagnosis procedure
    - How the disease works
    - Symptoms
    - Tests
    - Risk factors
  - Describe your treatment plan
    - Monitoring
    - Diet
    - exercise
  - Set up a follow up visit

Your Patient #1

- Ethan is a 4 year old child with juvenile diabetes Type I
- He is an active, happy child and wants to continue to play soccer

Your Patient #2

- Allen 33, he is overweight and suffers from Type II diabetes .
- He has been heavy since childhood and had a sedentary job.

Your Patient #3

- Maria in in her 28th week of pregnancy and has gestational diabetes.
- She was healthy before her pregnancy and is 27 years old