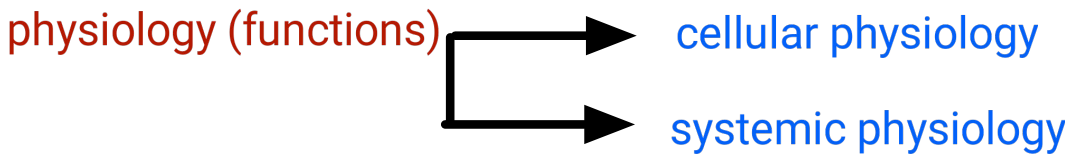
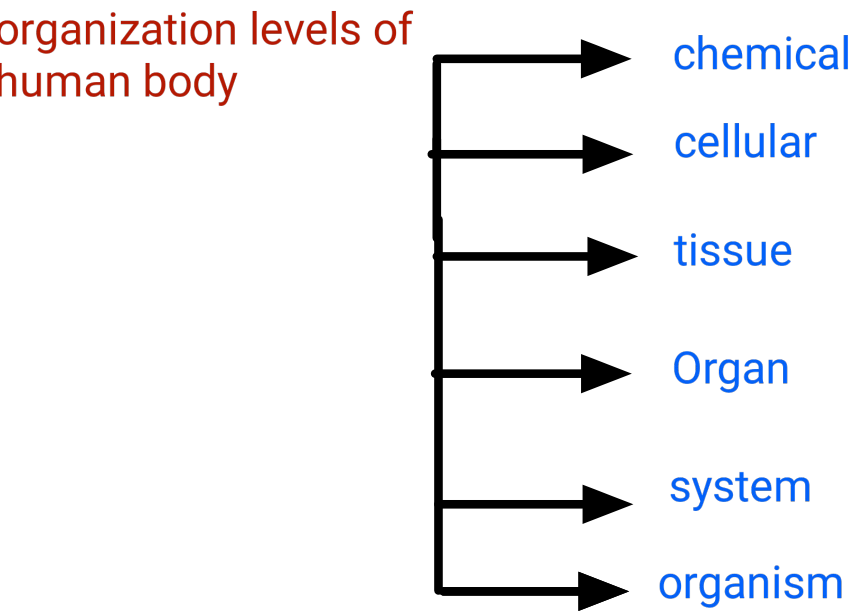


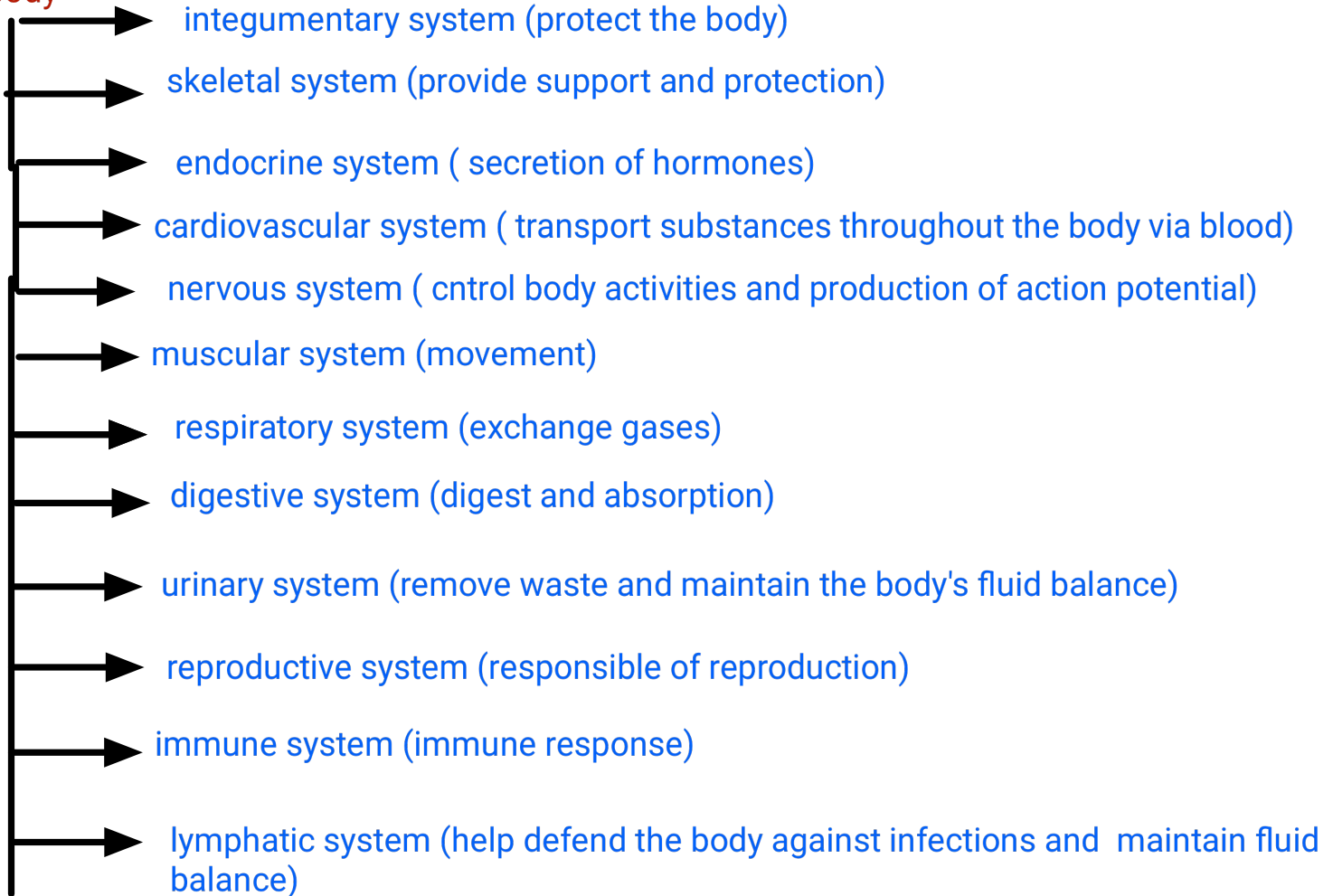
introduction of physiology(part 1)



pathophysiology (disease) pharmacology (effect of the drugs on the body processes)



systems of human body



characteristics of
the living human
organism



metabolism
(catabolism
and
anabolism)

responsiveness

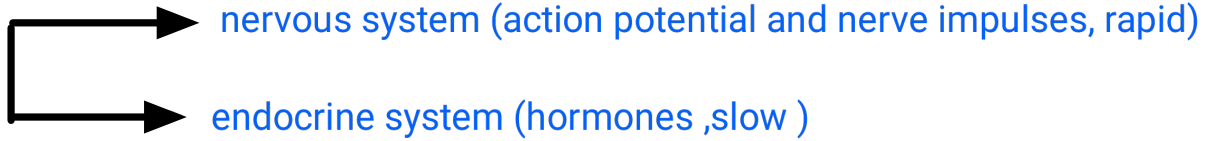
movement

growth

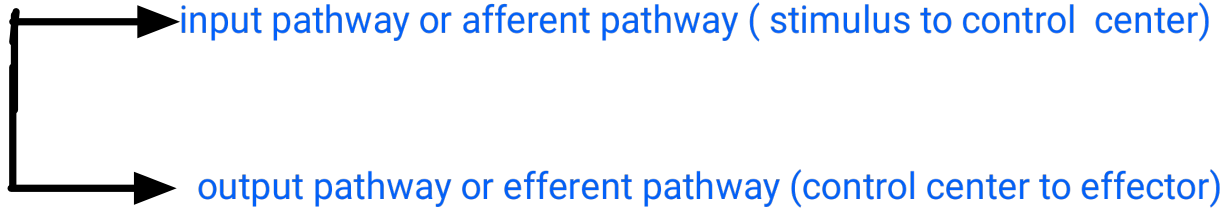
differentiation

reproduction (cell
division and
fertilization)

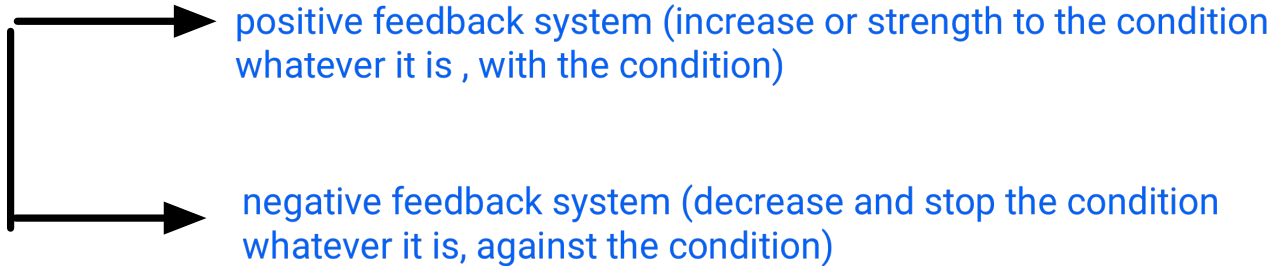
homeostasis
systems :



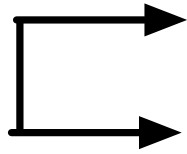
feedback systems
contain of:



kinds of feedback
system



type of disease



local disease (on one region)

systemic disease (entire body or several parts of it)

symptoms



subjective changes that's not appearance to the physician

signs



objective changes that can be measured or observed by physician

introduction of physiology (part2)

the three main parts of the cell

```
graph TD; A[the three main parts of the cell] --> B[plasma membrane]; A --> C[cytoplasm]; A --> D[nucleus];
```

plasma membrane

(semipermeable)
(fluid structures)

_contains 75%
phospholipids , 20%
cholesterol and 5%
glycolipids

_the lipids are
amphipathic molecules

(asymmetric) due to
glycolipids that appear
on the membrane liar
that faces the extra
cellular fluid

cytoplasm

80% cytosol and
20% organelles

the cytosol consists of
75-90% water and it is
the chemical reactions
site

nucleus

control center and
contains DNA or
genetic material

membrane proteins

```
graph TD; A[membrane proteins] --> B[integral proteins]; A --> C[peripheral proteins]; B --> B1[_ion channels]; B --> B2[_carrier or transporters]; B --> B3[_receptors]; B --> B4[_enzymes]; B --> B5[_linkers]; B --> B6[_cell identity marker]; C --> C1[_enzymes and linkers]; C --> C2[_support the plasma membrane]; C --> C3[_anchor the integral proteins]; C --> C4[_mechanical activities such as movement materials or attaching cells];
```

integral proteins

(span the entire lipid bilayer)

- _ion channels
- _carrier or transporters
- _receptors
- _enzymes
- _linkers
- _cell identity marker

peripheral proteins

(attached to the polar head of lipid membrane or to the integral protein)

- _enzymes and linkers
- _support the plasma membrane
- _anchor the integral proteins
- _mechanical activities such as movement materials or attaching cells

cytoskeleton (extends throughout the cytosol)

microfilaments

- _the thinnest
- _composed of myosin and actin proteins
- muscle contraction, cell locomotion , cell division and support

intermediate filaments

- _thicker than microfilaments but thinner than microtubules
- _found in cells of mechanical stress
- _stabilization

microtubules

- _the largest
- _composed of tubulin
- _determine cell shape and movement