

Date:

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لجان الدفقات



تفريغ فسيولوجي

Functional organization of the human body : موضوع المحاضرة

رقم المحاضرة : محاضرة 2

إعداد الصيدلانية : سارة



Anatomy: Structures of body parts.

Physiology: function of these parts. (normal function)

* **Types of Physiology**:

cellular

Processes

occurs within
cells

systemic

processes

within
body

* **Pathophysiology**: disease

* **Pharmacology**: study of the effect of drugs on body processes.

* **Cell**: the basic structural and functional unit

Organization leveles of human body:

Atom $\rightarrow$ Compound $\rightarrow$ organelle $\rightarrow$
or molecule

cell $\rightarrow$ Tissue $\rightarrow$ organ $\rightarrow$ system $\rightarrow$ organism

The control systems are ::
Nervous and endocrine

الفرق بين الجهاز العصبي والغدد :

(1) استجابة الجهاز العصبي لأي محفز
أسرع من استجابة جهاز الغدد

(2) تكون استجابة الجهاز العصبي على
شكل سيالات عصبية (تيارات عصبية)
بينما جهاز الغدد عن طريق الهرمونات

*Circulatory System :

للشرايين ينقل (غذاء + O_2) من القلب إلى الخلايا
وريد ينقل (مخلفات + CO_2) من الخلايا إلى القلب

*Digestive system :

يحول المركبات الكبيرة (المعدة) إلى
مركبات صغيرة (الأمعاء)

*Respiratory system :

تبادل ($CO_2 + O_2$) بين الدم والرئتين

The organs and tissues perform
function that help to maintain
homeostasis (balance)

* المؤثر الخارجي أو الداخل (المحفز)
هو الذي يقوم بإخراج الجسم من حالة
التوازن.

Characteristics of the living human organism or life Processes:

- 1) metabolism
- 2) Responsiveness
- 3) movement
- 4) Growth
- 5) Differentiation
- 6) Reproduction

هذه الخصائص تساهم في استمرارية الحياة في الحفاظ على حالة التوازن.

Body fluids :

- 1) inter cellular fluid (ICF)
- 2) extra Cellular fluid (ECF)

* Interstitial fluid : The (ECF) that fills the narrow spaces between cells of tissues.

The homeostasis of the body
affected by external or internal
environment and Psychological stresses

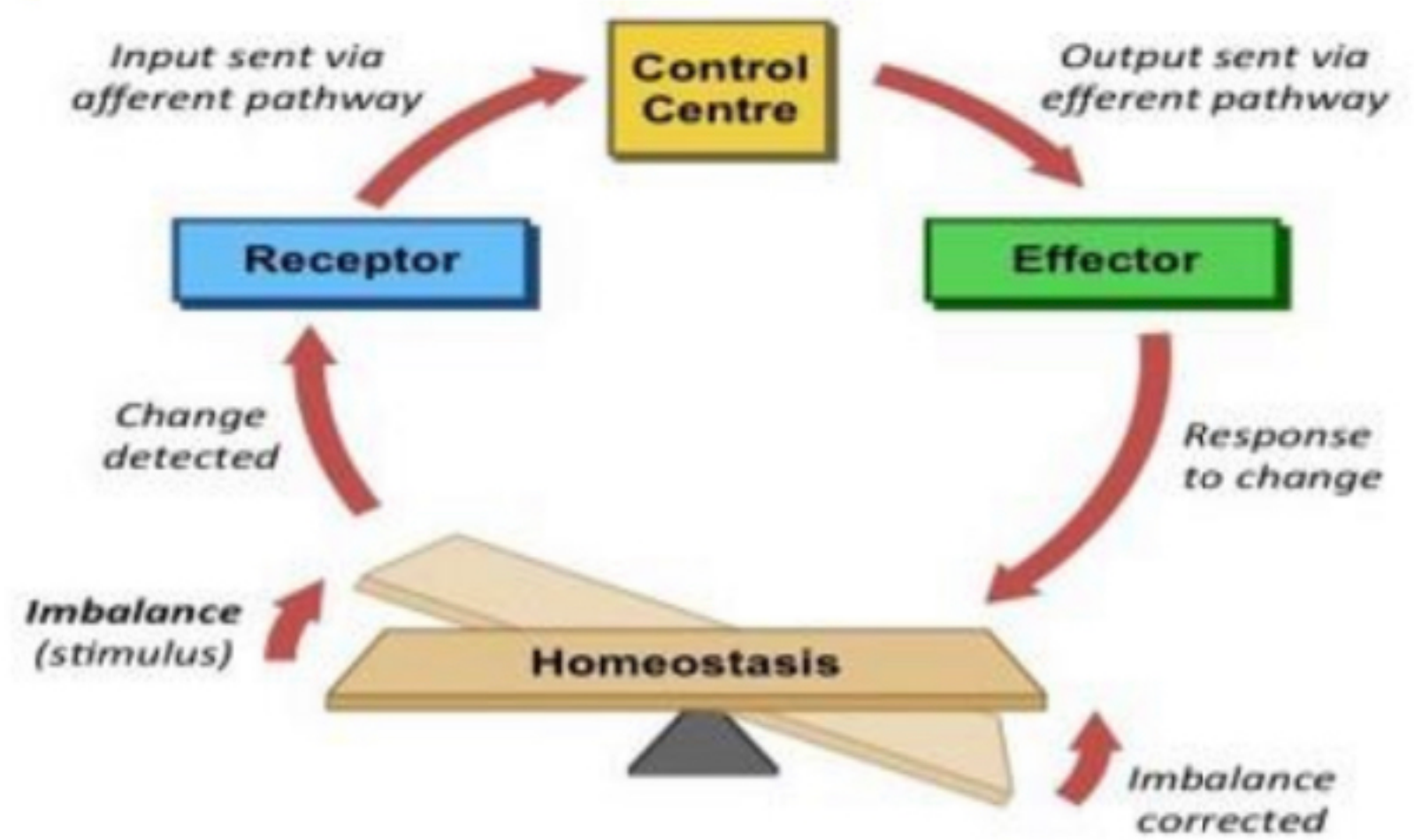
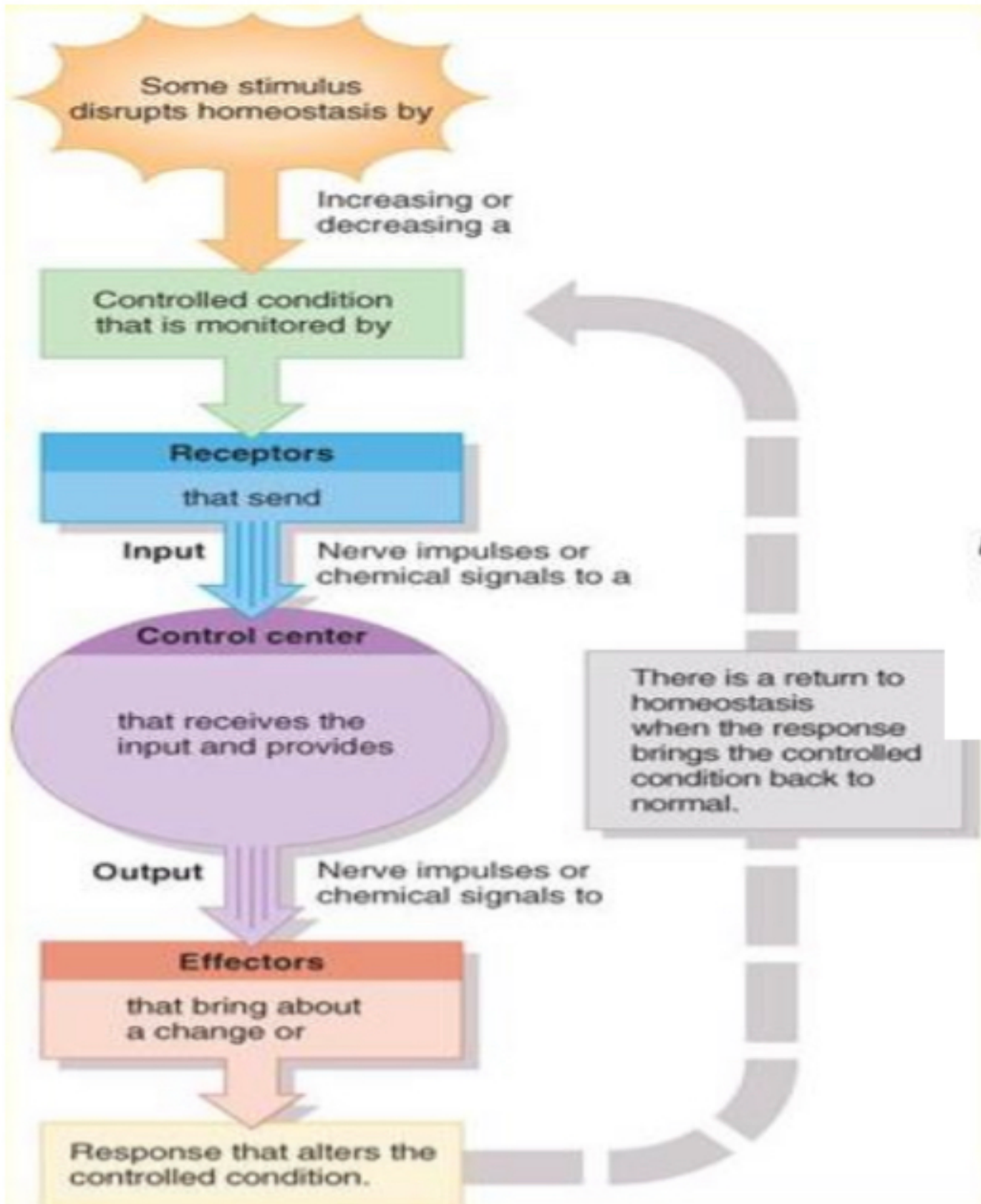
The effect can be temporarily
or Prolonged.

The internal environment can be regulated through feedback system that monitored controlled variables.

*homeostatic reflex can be innate (builtin) and learned homeostatic reflex.

*Stimulus: Changing of a condition.

*Basic Components of feedback system: Stimulus, receptor, a control center and an effector.



Group of receptors and effectors communicating with their control center forms a feedback system

- The feedback systems can be positive or negative feedback systems.
- A negative feedback system reverses the change in a controlled condition.
- Unlike a negative feedback system, a positive feedback system tends to strengthen or reinforce a change in one of the body's controlled conditions.
- If the action of a positive feedback system is continued, it may produce life-threatening conditions in the body.
- Unlike a positive feedback system, the action of a negative feedback system slows and then stops because the controlled condition returns to its normal state.

The Rapid or slow change
work toward the negative
feedback systems.

* Nervous system $\rightarrow$ Rapid change

* Endocrine system $\rightarrow$ slow change

HOMEOSTATIC IMBALANCES

- Disease is a more specific term for an illness that is characterized by a recognizable set of signs and symptoms.
- Local disease affects a specific region of the body.
- Systemic disease affects either the entire body or several parts of it.
- Subjective changes in body functions (**symptoms**) that are not apparent to an observer (i.e. headache, nausea, and anxiety).
- Objective changes that a clinician can observe and measure are called **signs**.