

# **A SEJTEK FELÉPÍTÉSE ÉS MŰKÖDÉSE**

## **A HÁMSEJTEK SPECIÁLIS FELADATAI**

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*Budapest, 2023. szeptember 11.*

# Hány saját sejt van az emberi testben?

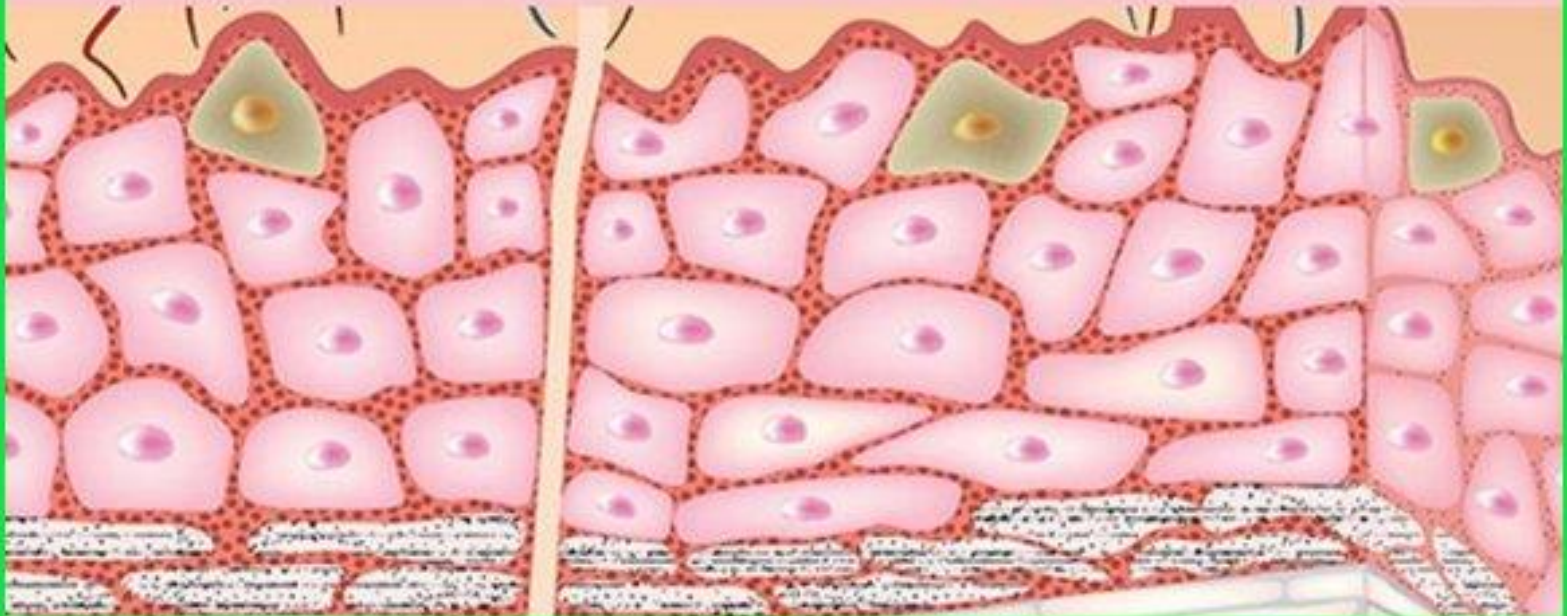
**$3.7 \times 10^{13}$**

OR 37,000,000,000,000

Approximate number of cells in the human body

FROM: BIONUMBERS

<http://bionumbers.hms.harvard.edu>



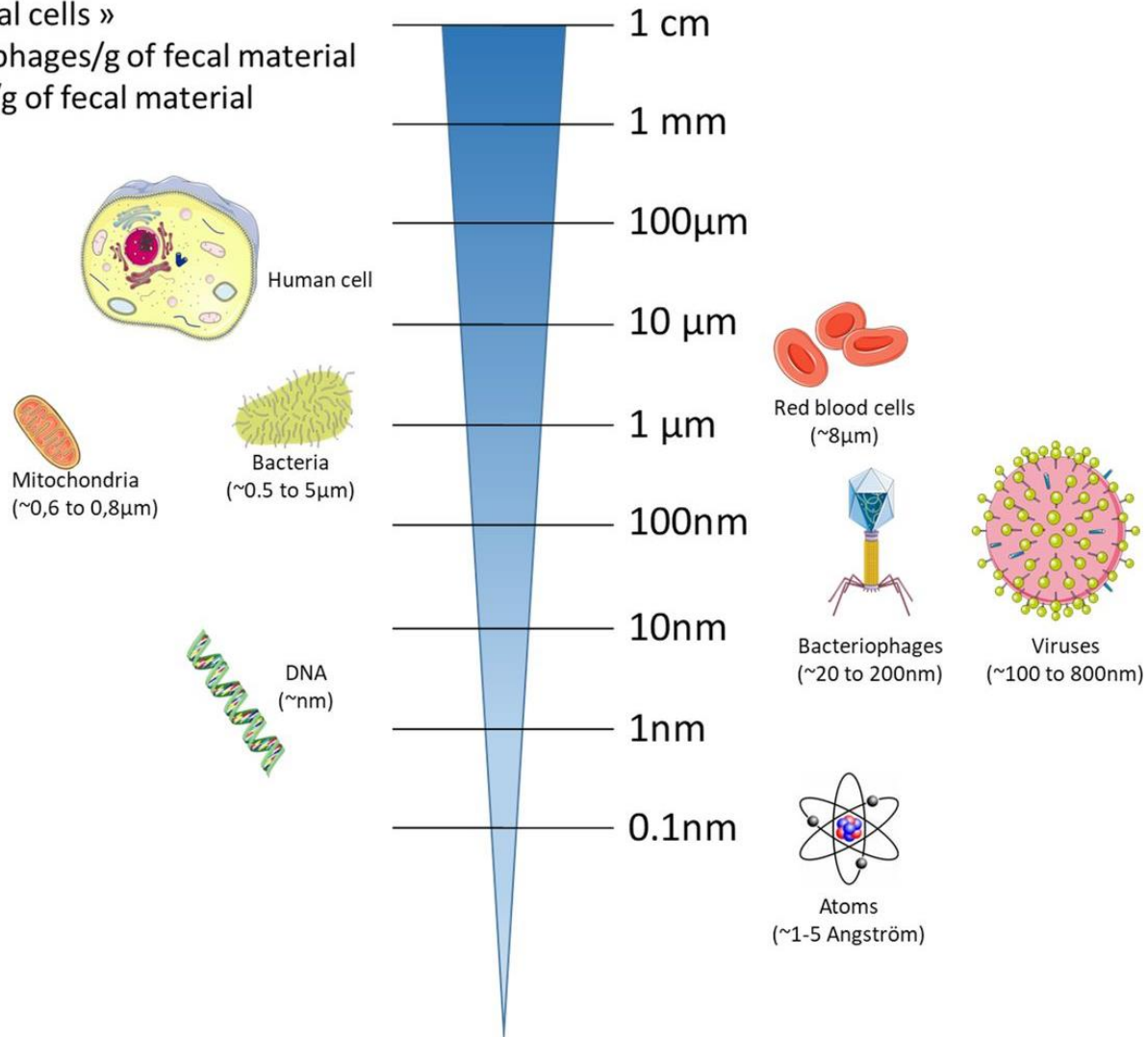
# A különböző sejtek méretei

$10^{13}$  « human cells »

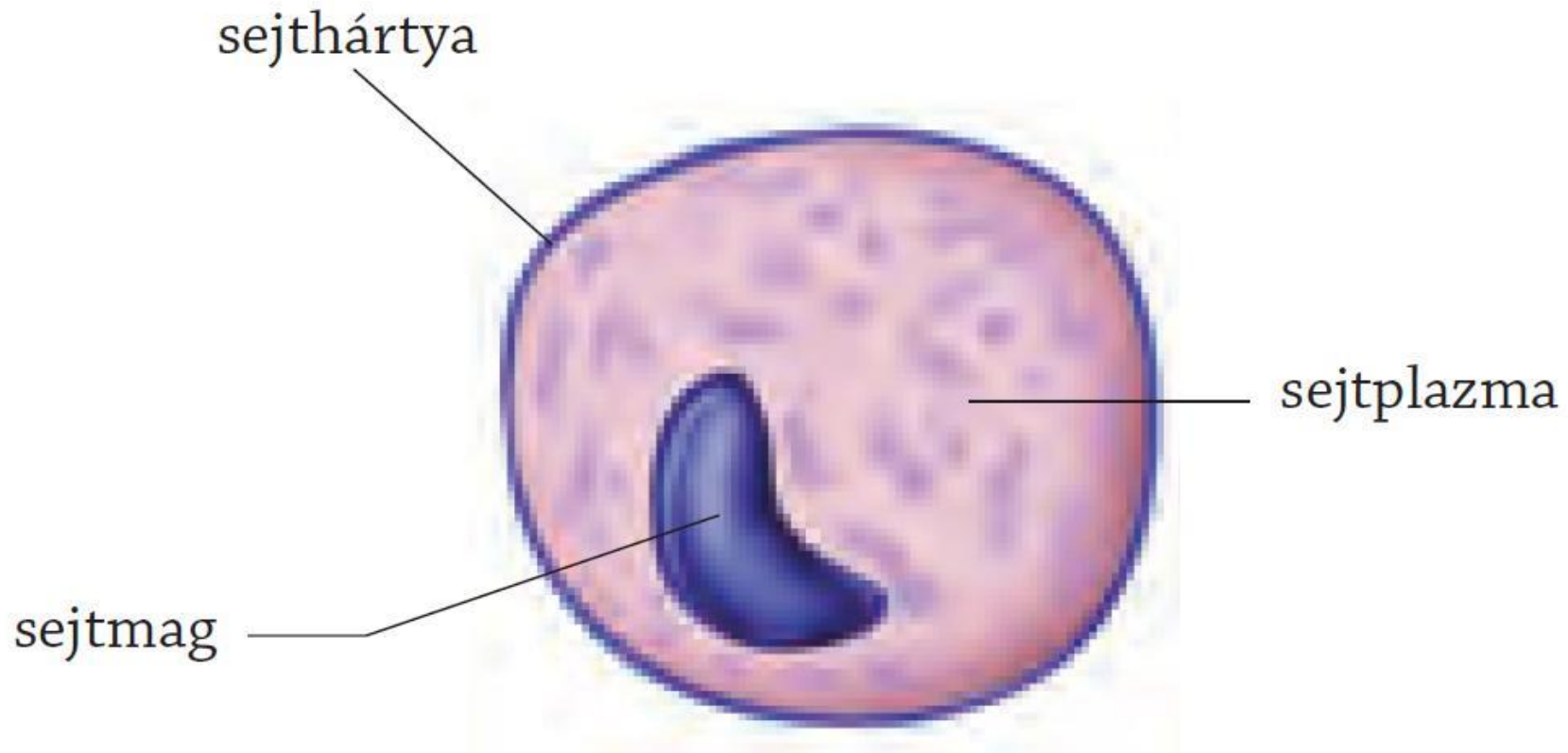
$10^{14}$  « microbial cells »

$10^{12}$  bacteriophages/g of fecal material

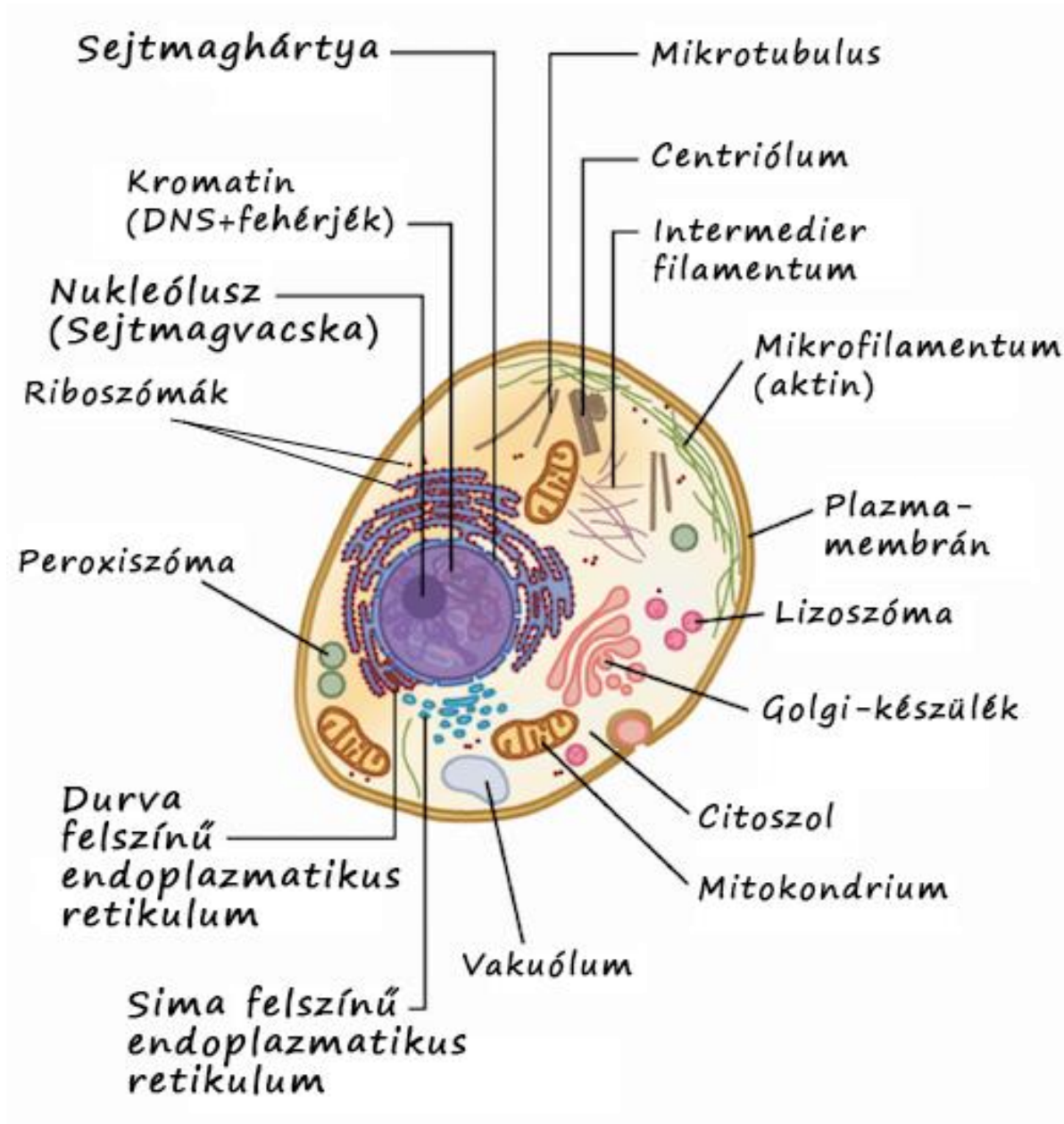
$10^{11}$  bacteria/g of fecal material



# A sejt felépítése I.

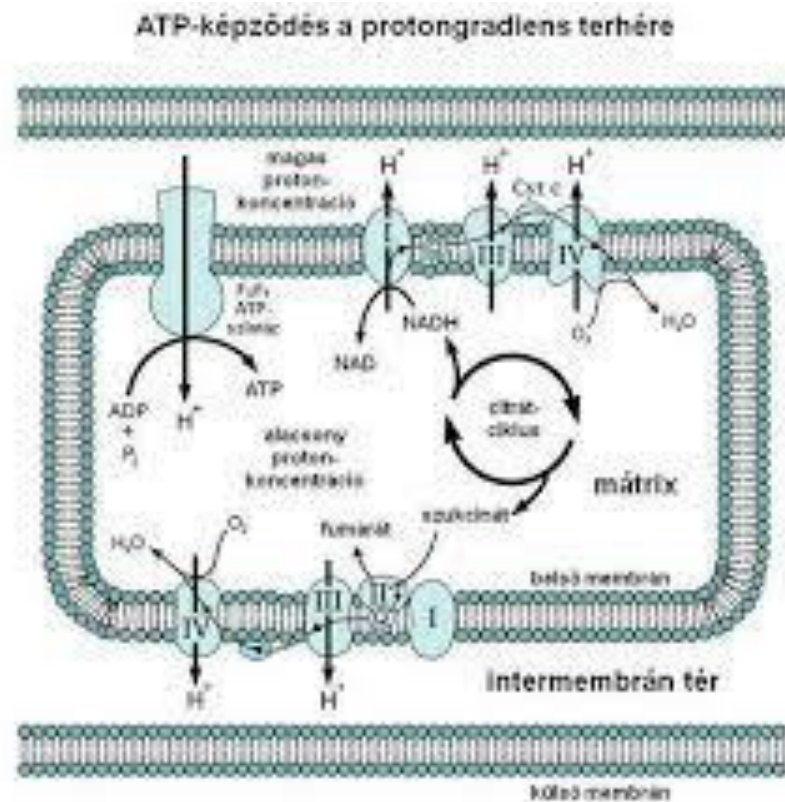
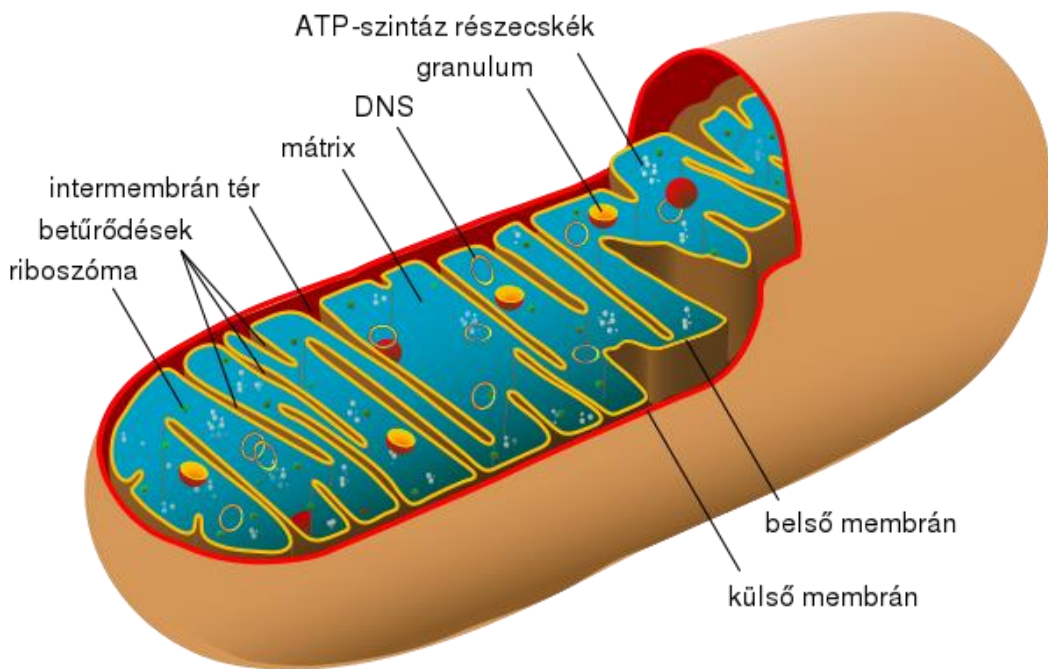


# A sejt felépítése II.

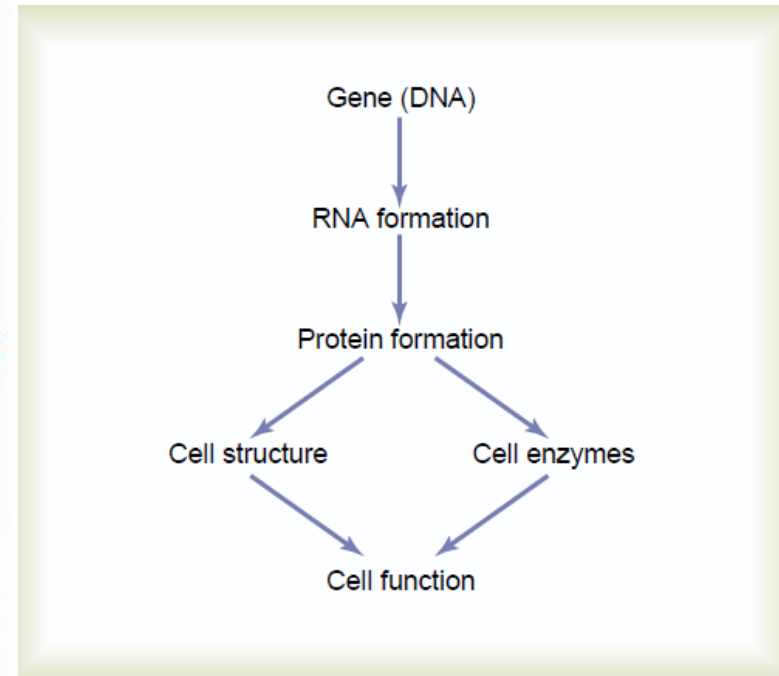
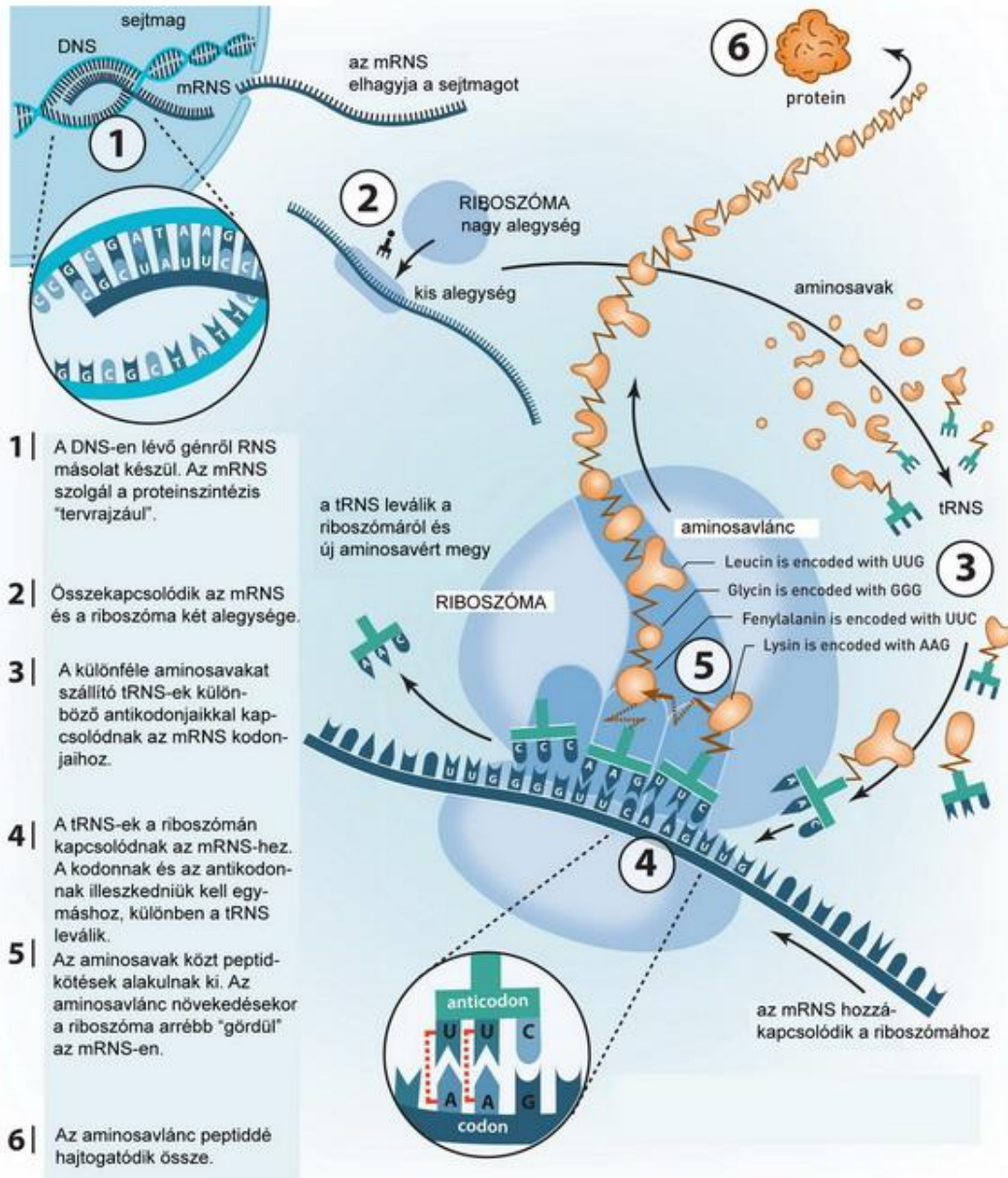




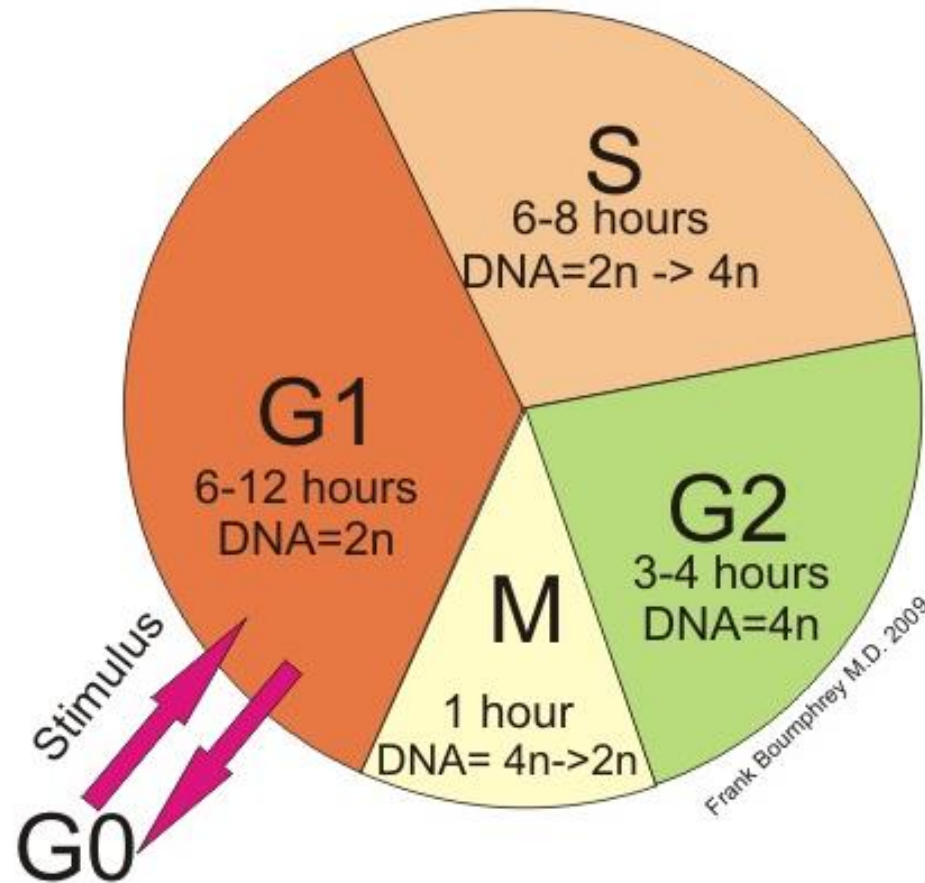
# A mitokondriumok felépítése és feladata



# A gének szabályozzák a sejtek működését



# Sejtciklus



G0: Resting Phase

G1: Growth & Metabolism

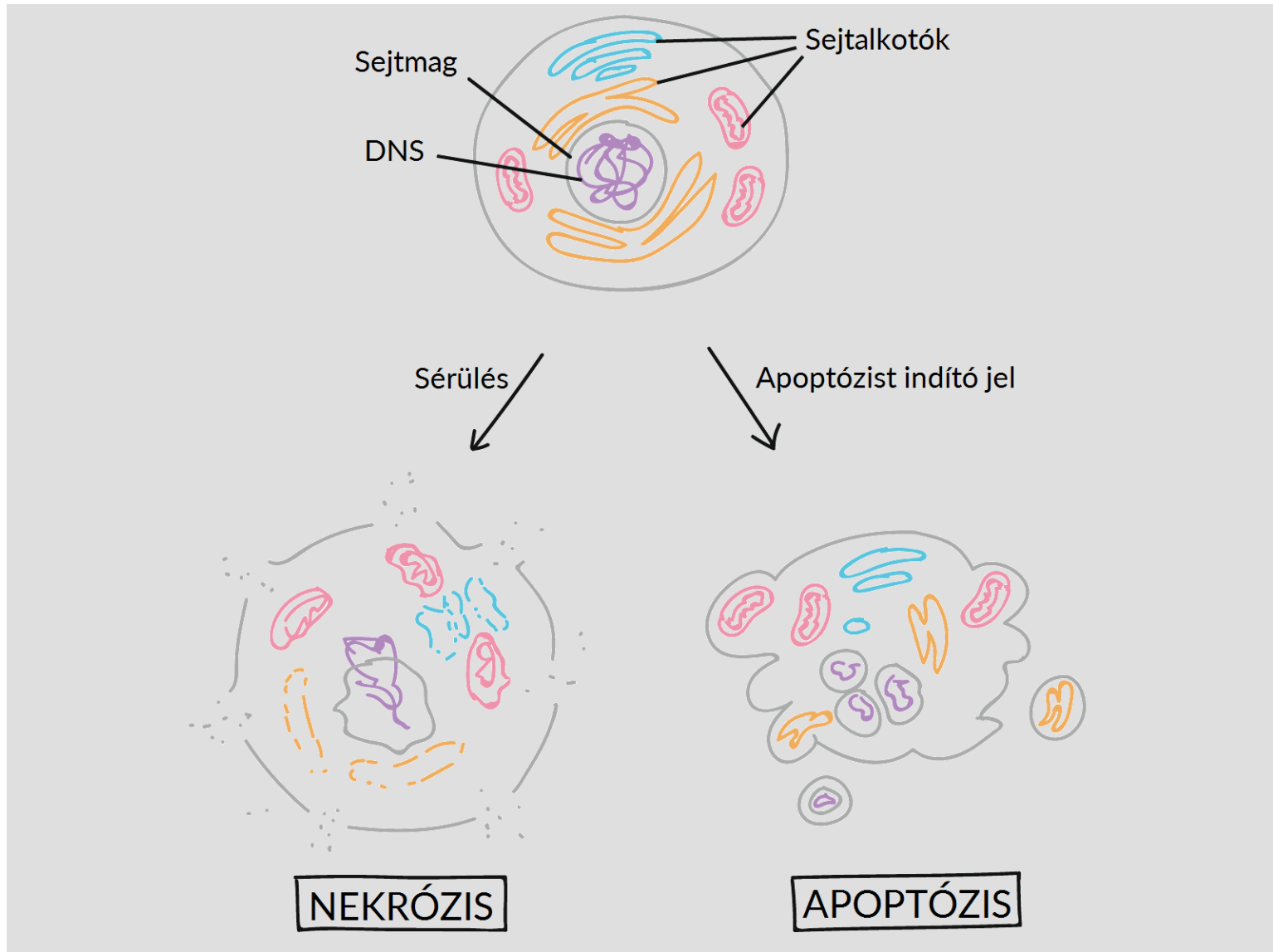
S: DNA Replication

G2: Growth of Structural Elements

M: Mitosis



# A sejthalál formái

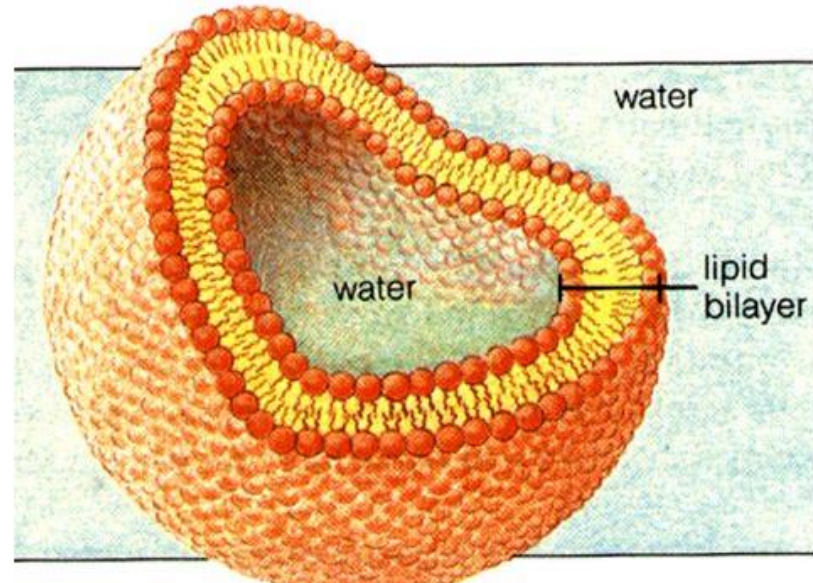
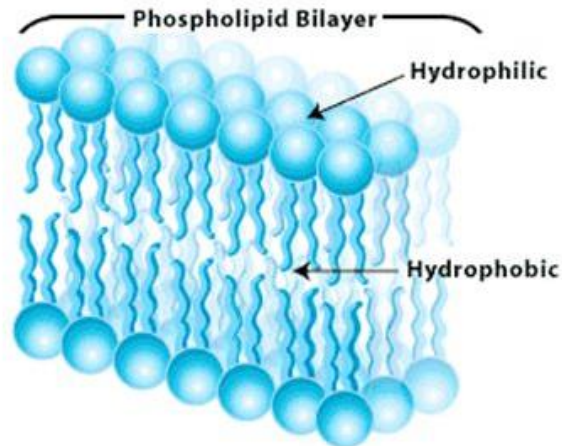
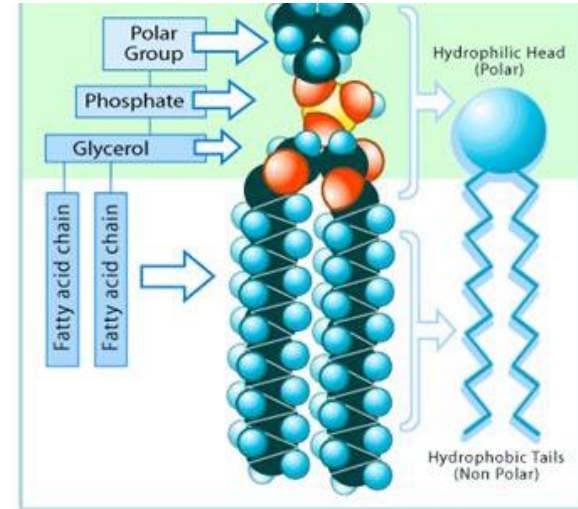


# Homeosztázis

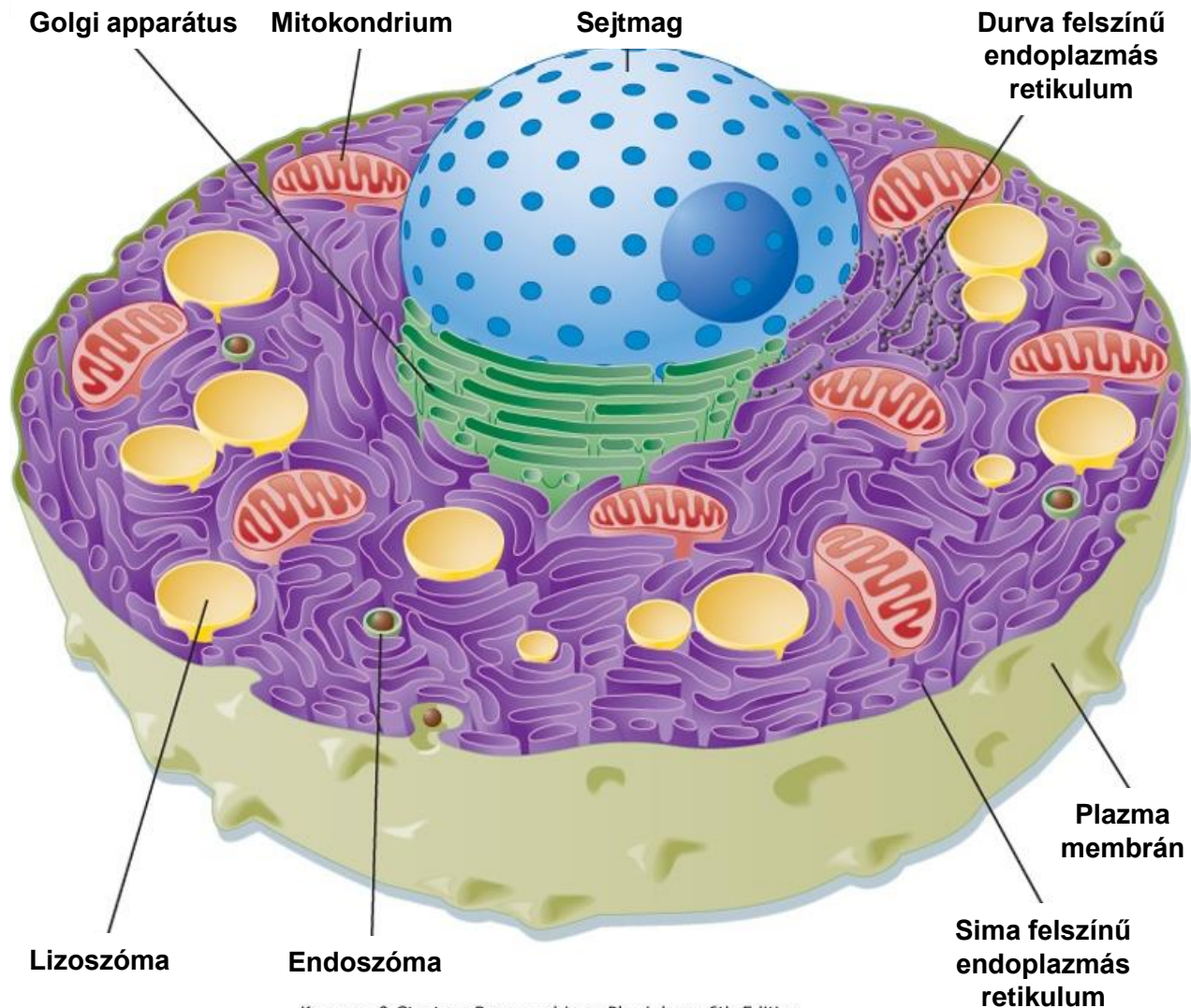
- **A belső környezet állandósága**
- **A sejtek csak az „ősi” környezetben képesek élni**
- **Dinamikus egyensúly, melyet a szervezet bonyolult szabályozórendszereken keresztül tart fenn**

# A sejtmembrán biztosítja

- I. HOMEOSTASIS: internal “steady state” maintained by the body
1. What is the cell membrane made of?
- Phospholipid bilayer
    - **Hydrophobic** tails
    - **Hydrophilic** head

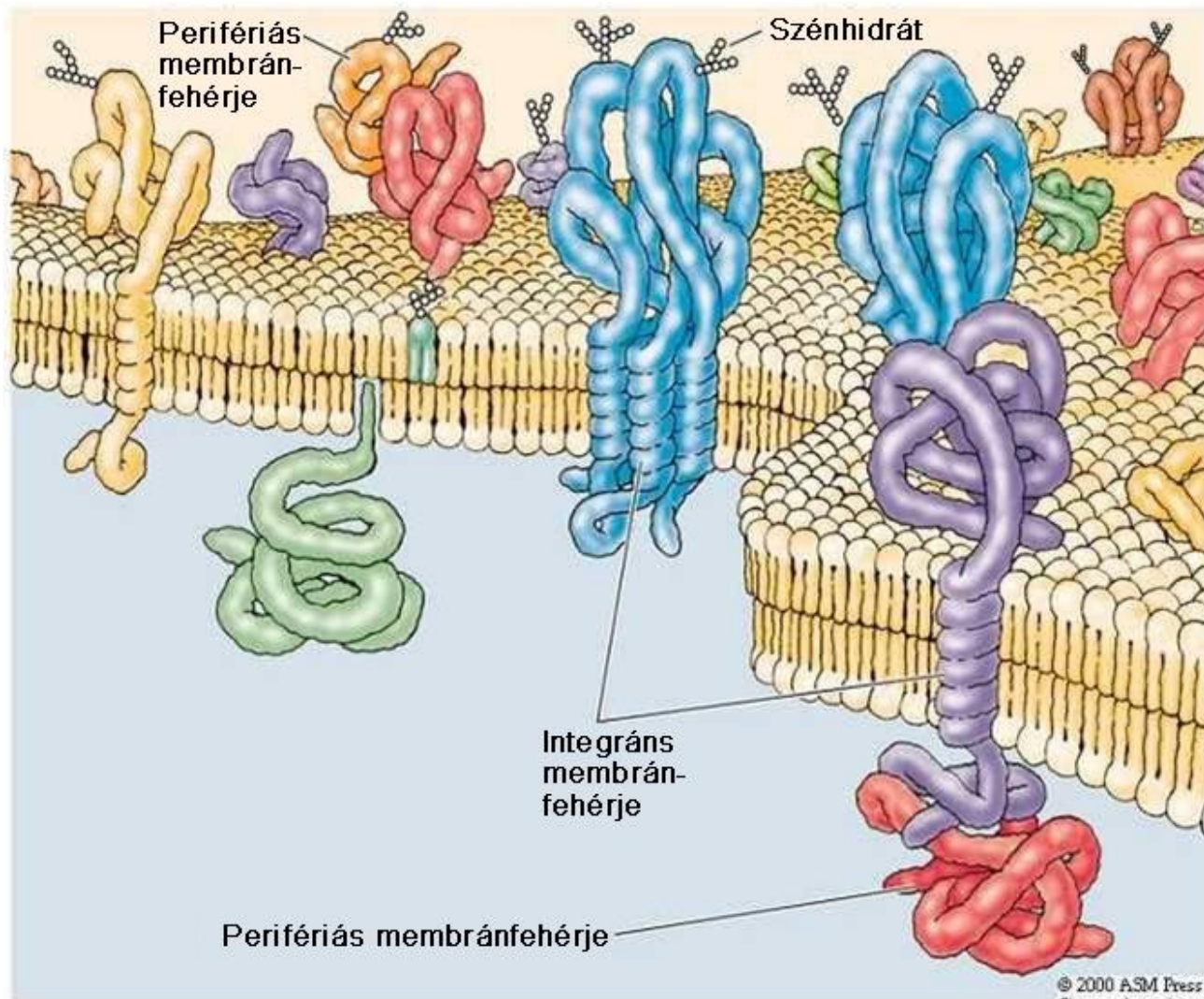


# Hol vannak membránok az eukarióta sejtekben?





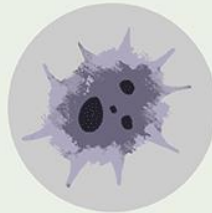
# Folyékony mozaikmembrán modell



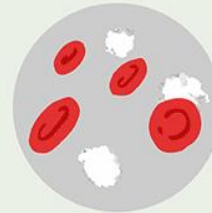
# Az emberi test különböző sejtjei



Stem Cells



Bone Cells



Blood Cells



Muscle Cells



Fat Cells



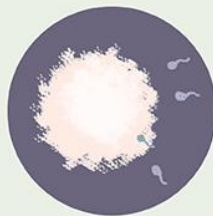
Skin Cells



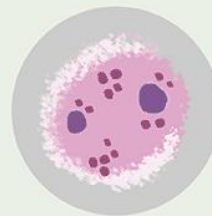
Nerve Cells



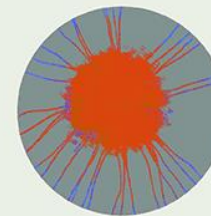
Endothelial Cells



Sex Cells



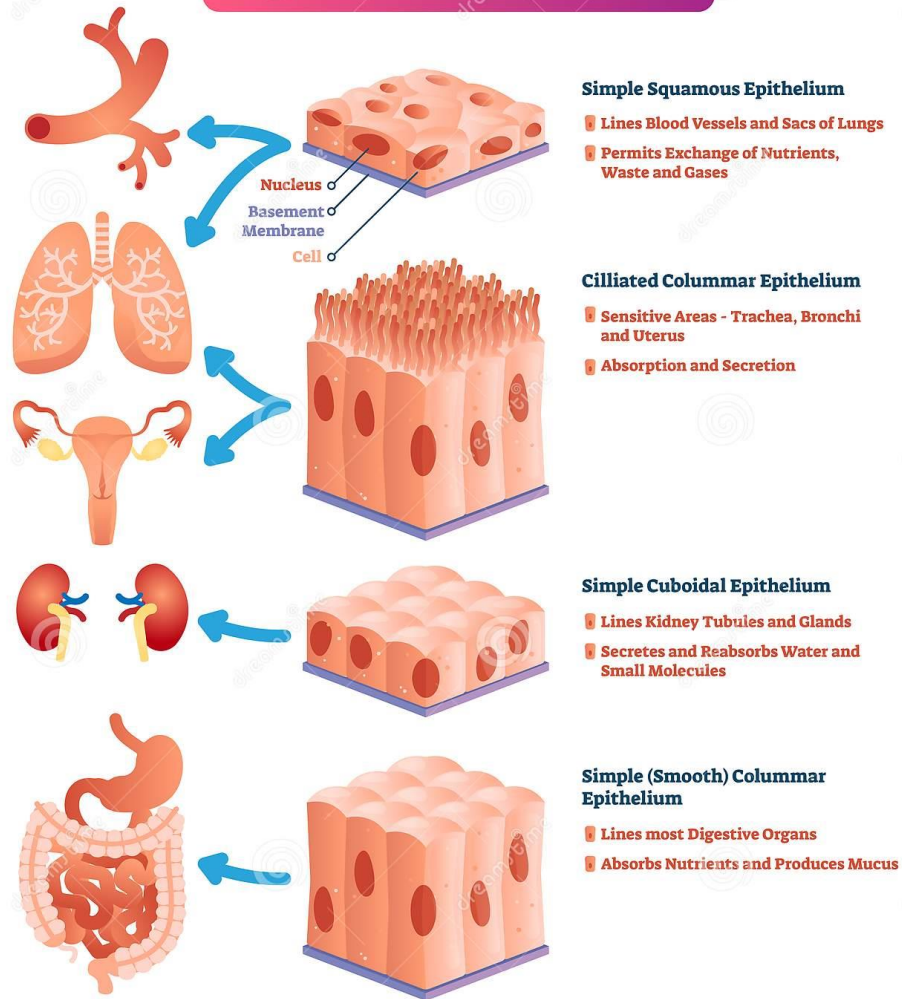
Pancreatic Cells



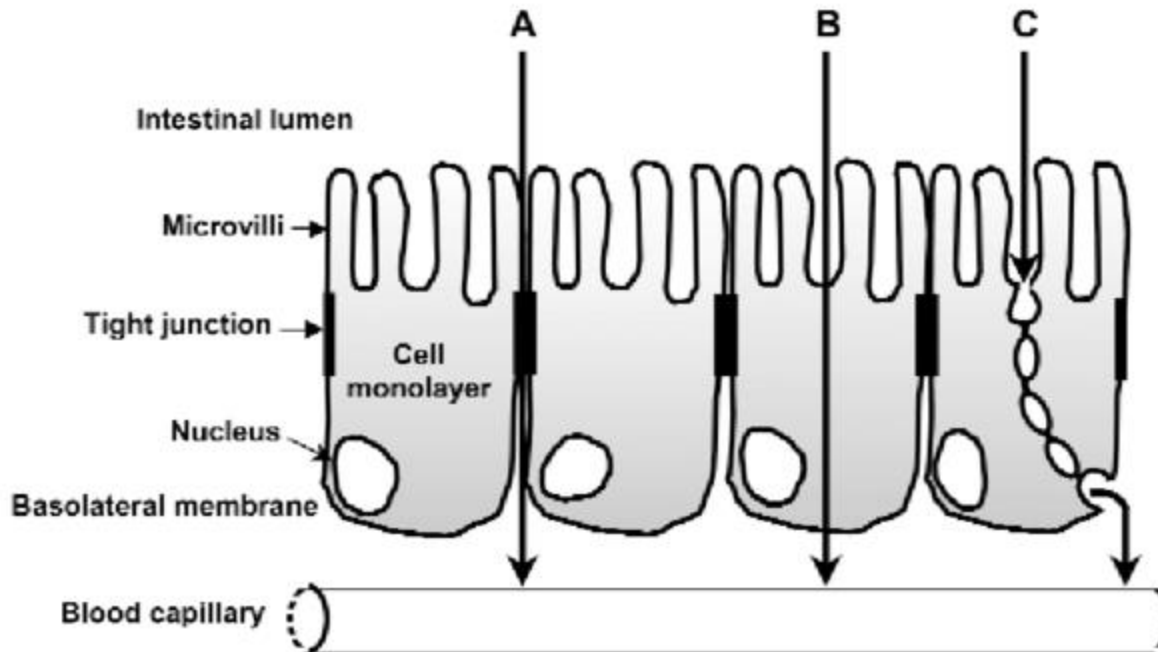
Cancer Cells

# Hámsejtek

## EPITHELIAL CELL

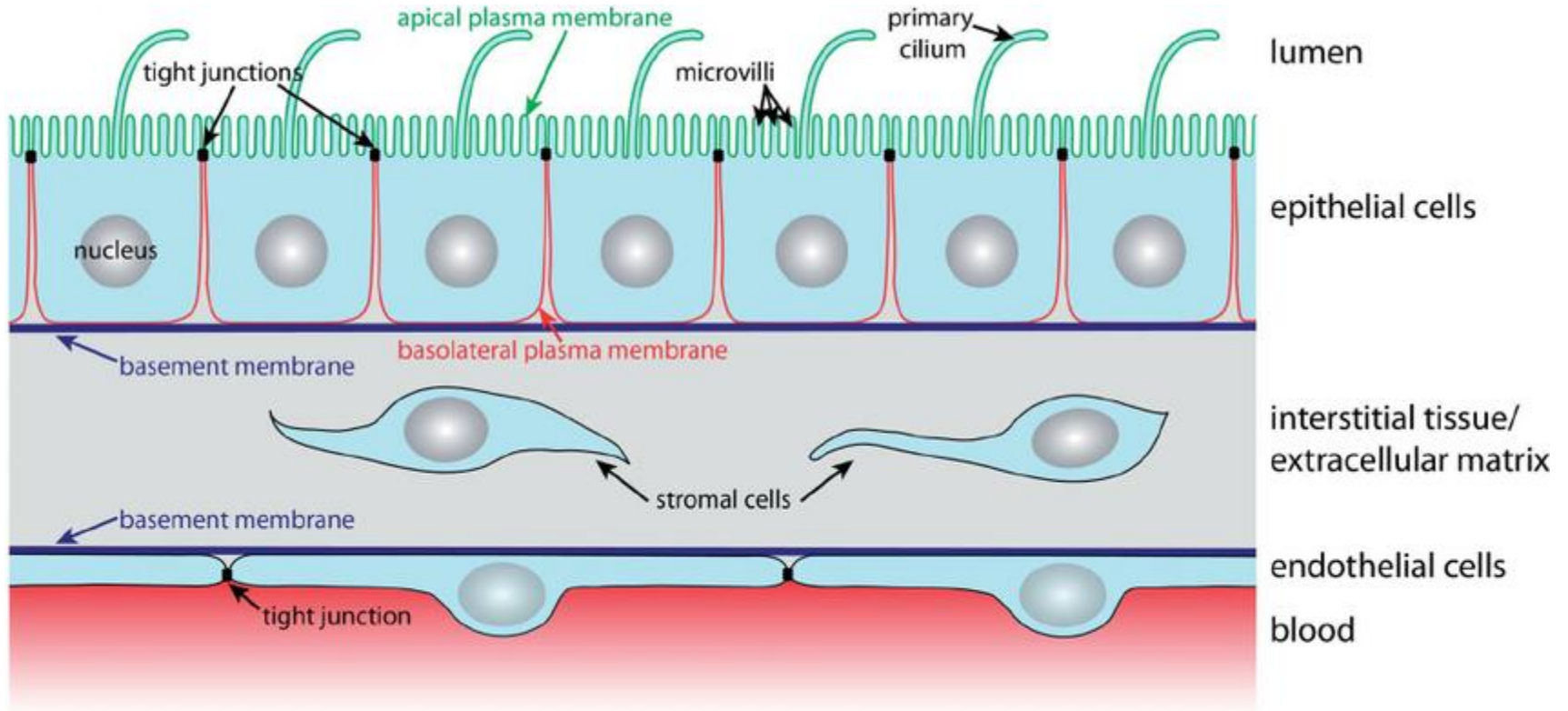


# A hámsejteken keresztüli transzport

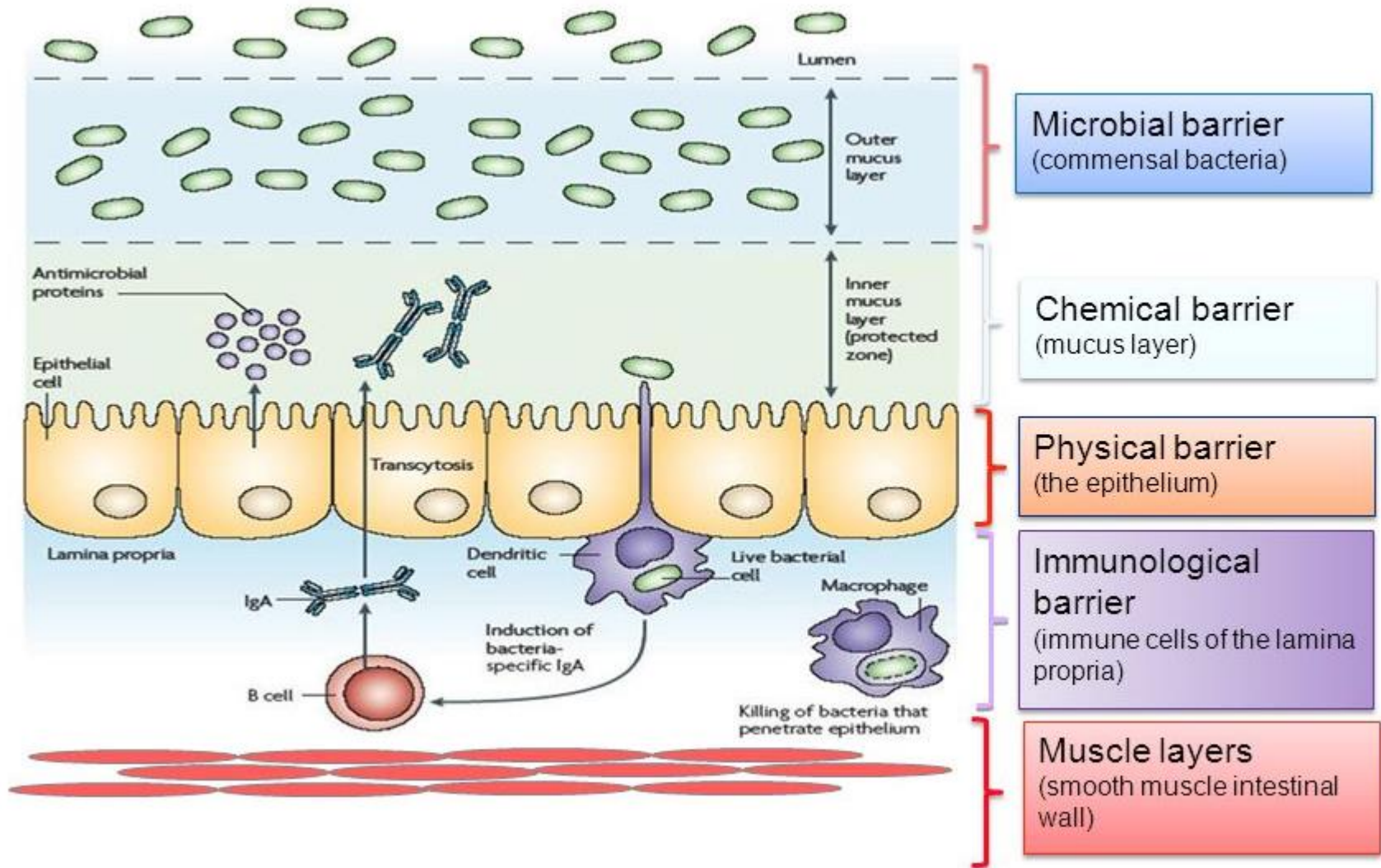




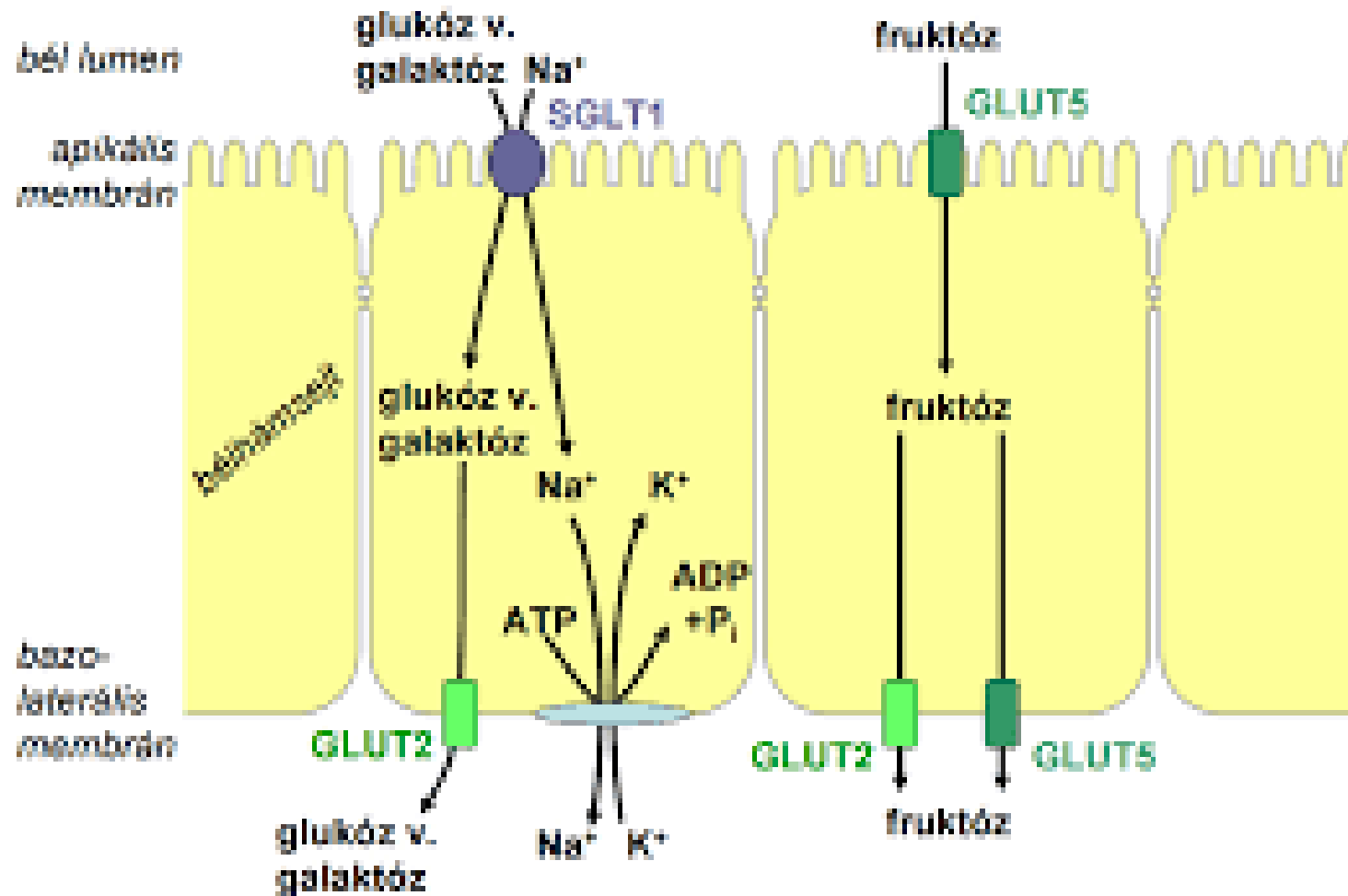
# Az egyrétegű hám és a vérerek kapcsolata



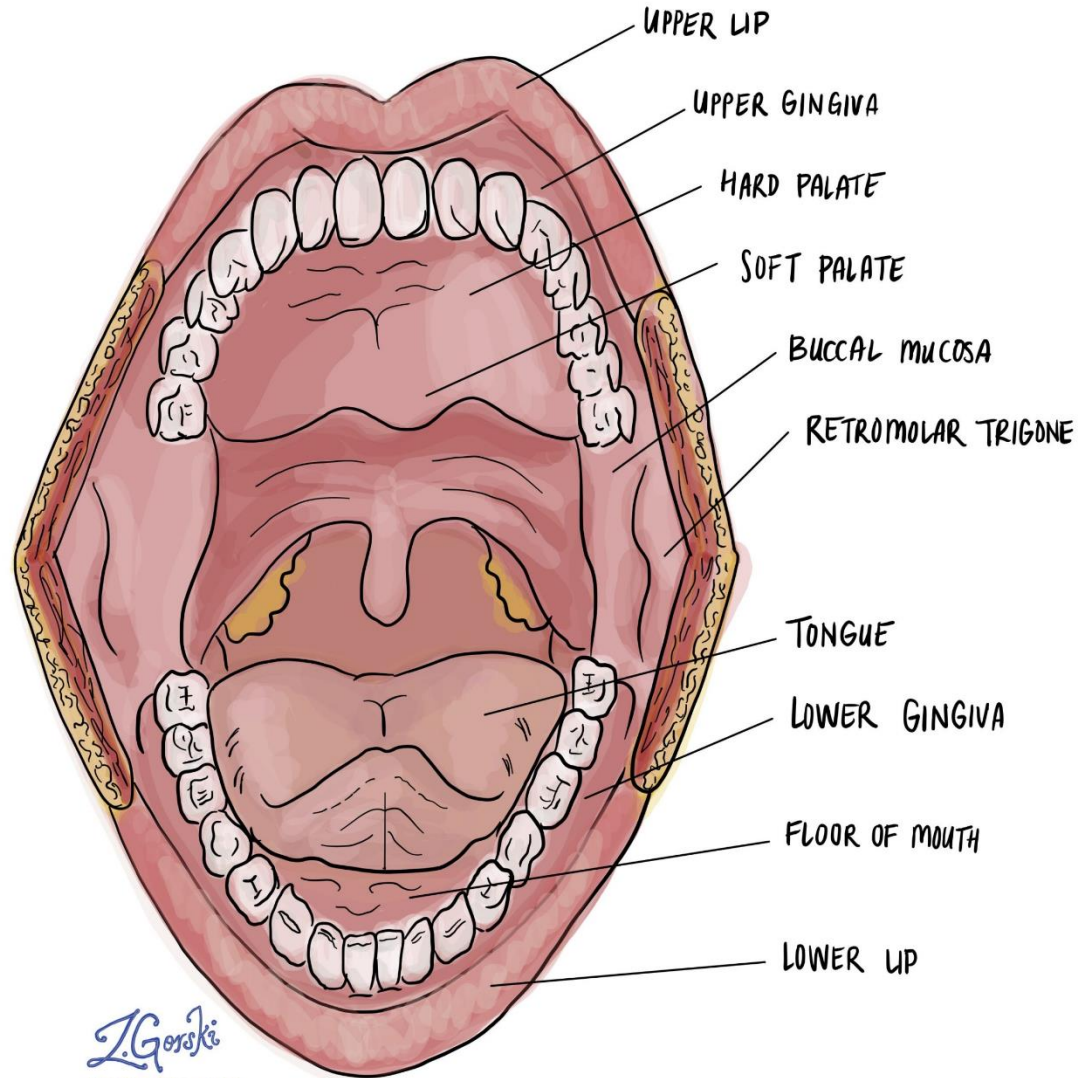
# A hámsejtek barrier funkciói



# Monoszaharidok felszívódása a bélben



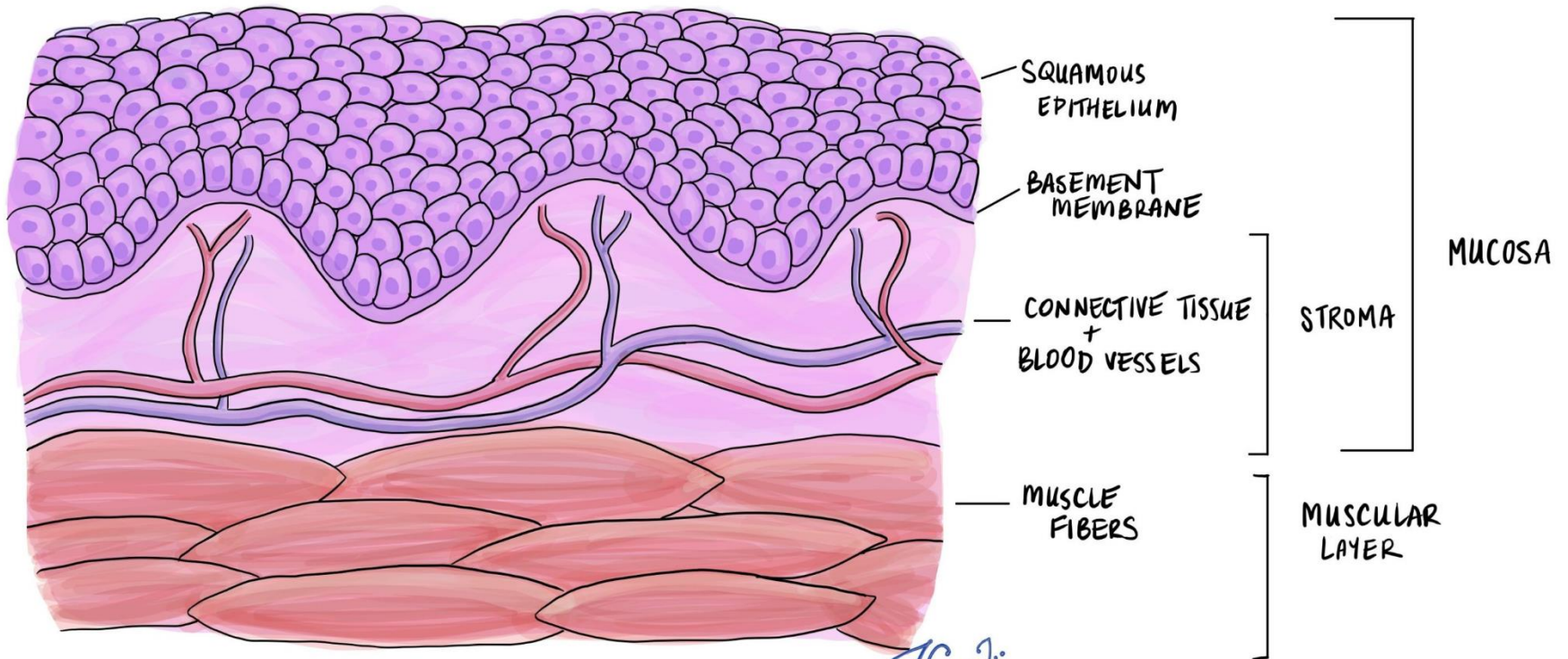
# A szájüreg



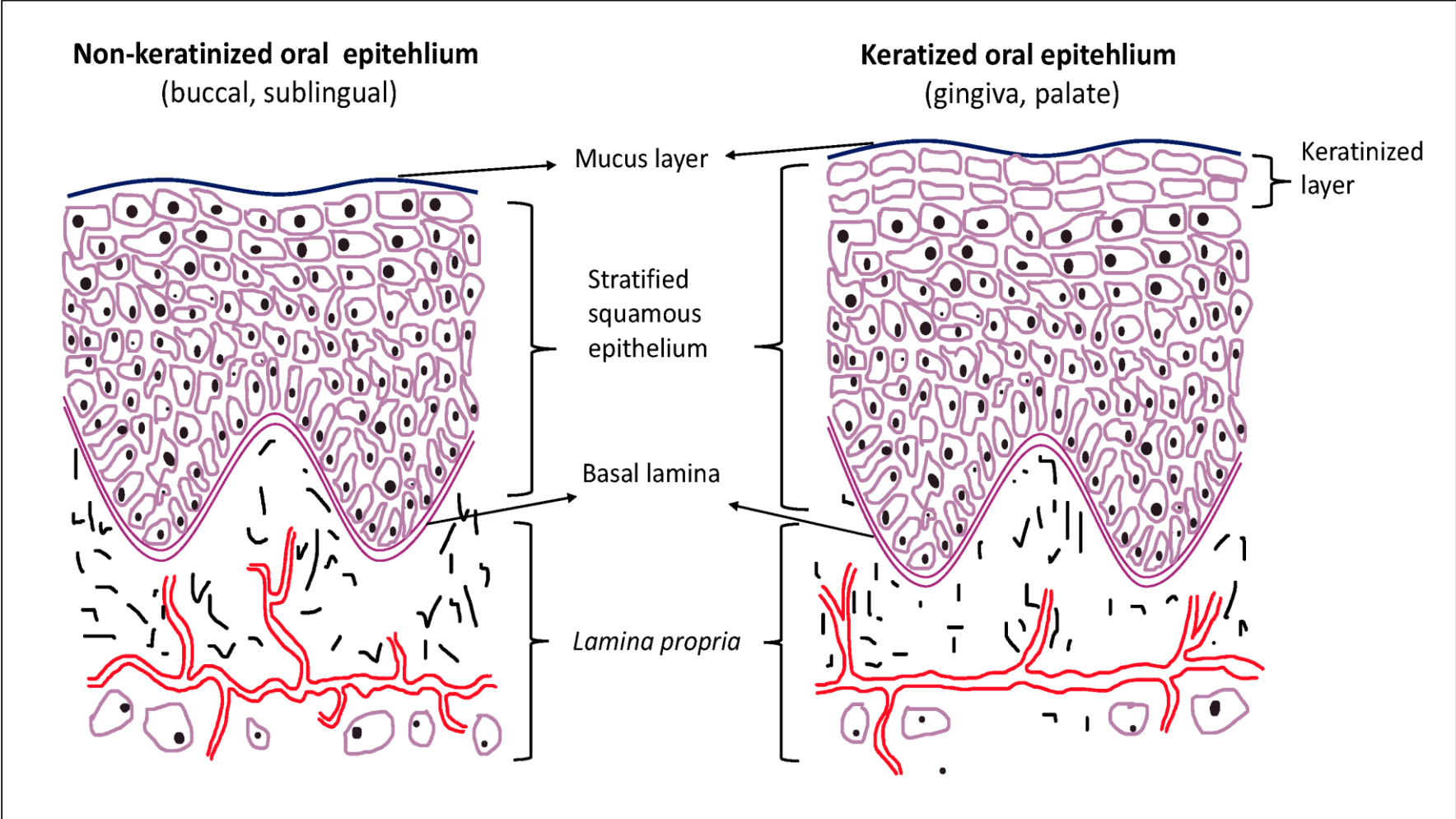


# Milyen sejtek vannak a szájüregben?

## THE ORAL CAVITY



# Elszarusodó és el nem szarusodó hámsejtek a szájüregben



# KÖSZÖNÖM SZÉPEN A FIGYELMET!

ORAL HEALTH:  
A WINDOW TO YOUR  
OVERALL HEALTH

