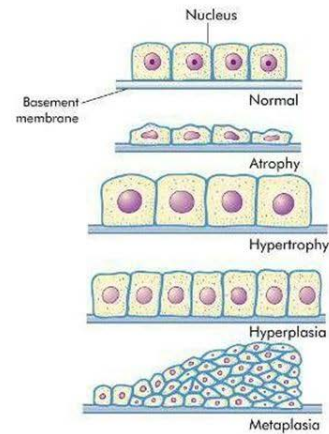


Adaptation

Cellular Adaptations

Adaptations – reversible changes in the size, number, phenotype, metabolic activity, or functions of cells in response to changes in the environment

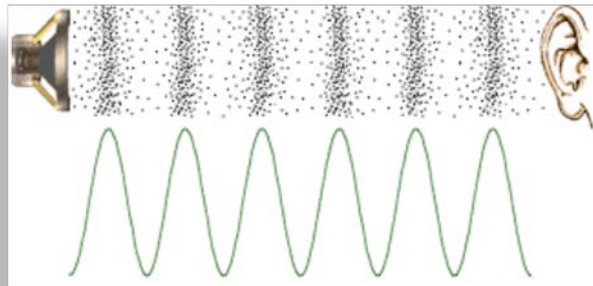
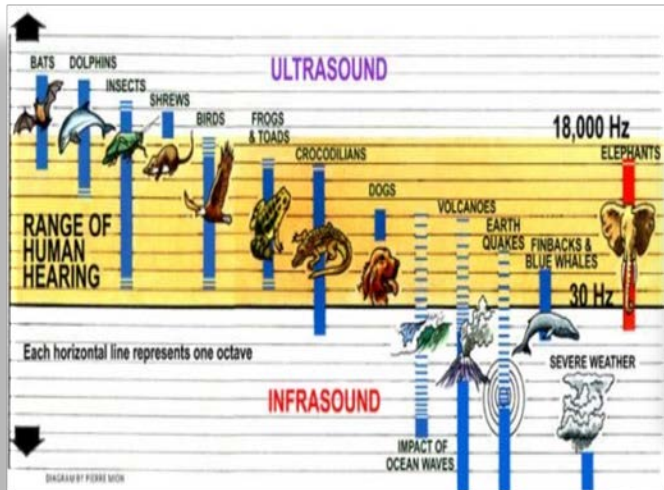


- Atrophy
- Hypertrophy – increase cell size
- Hyperplasia – increase cell number
- Differentiation – change in cell type

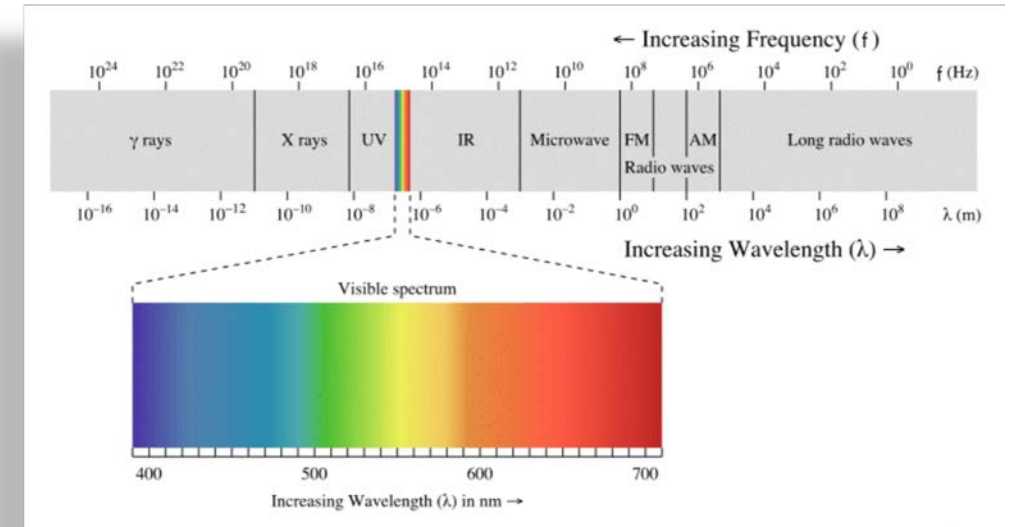
- Safety/Injury
 - Balance/Imbalance-Falls
 - Resistance/Susceptibility
 - Forces: Accelerations/Decelerations
 - Joints:
 - Stability/Instability
 - Traction/Impingement
 - Muscles: Strength/Weakness
- Energy Efficiency
 - Stride length/Step cadence
 - Braking
 - Gliding
 - Bounce/Elasticity
 - Resonance
 - Muscle work
- Performance
- Dynamic/Static Foot
- Posture
- Adaptation

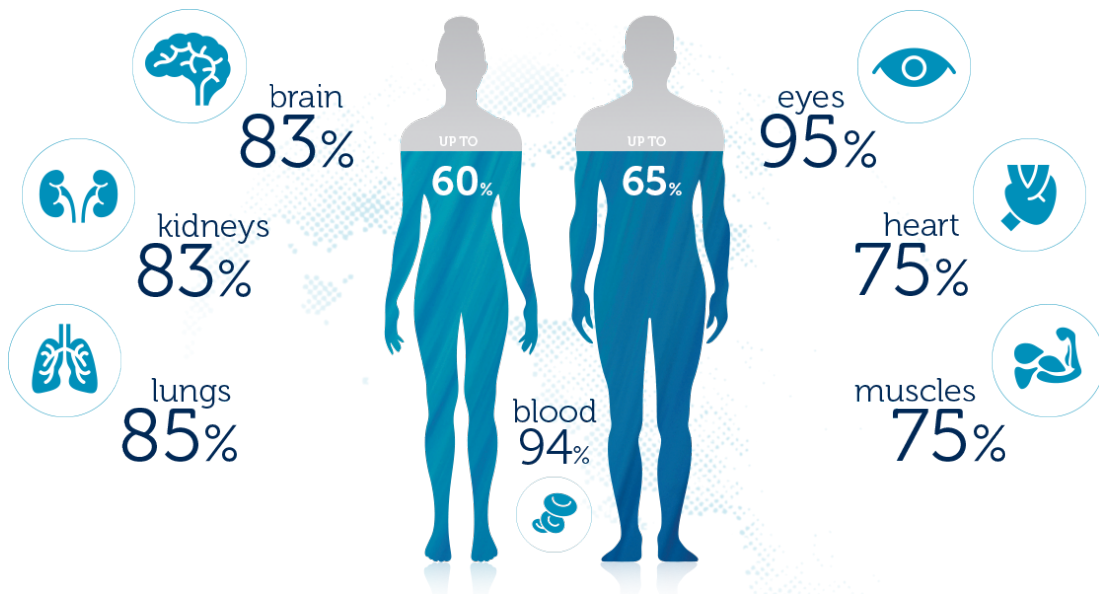
Signal Receptor Systems

Hearing



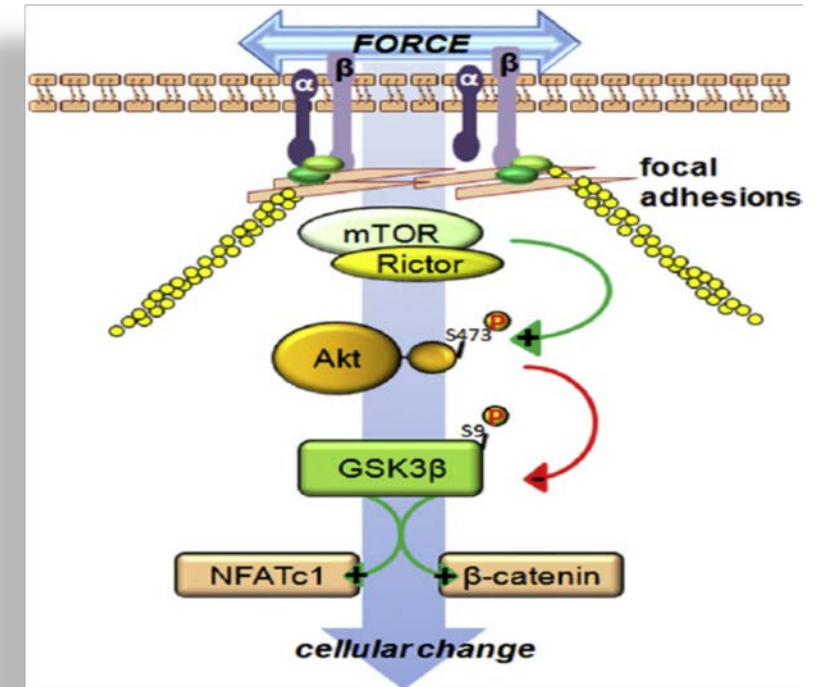
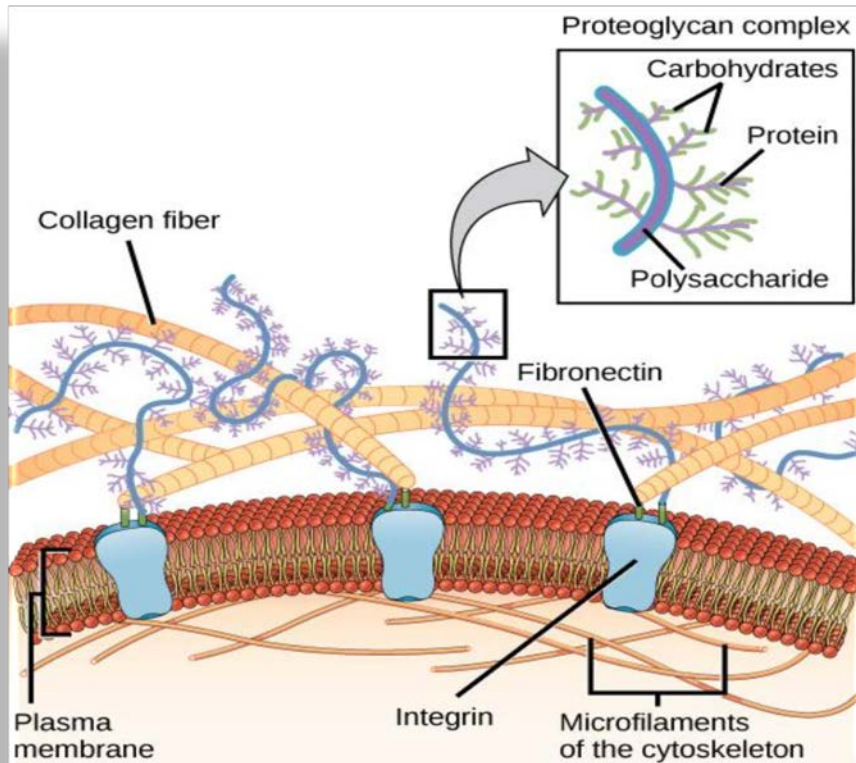
Sight





MECHANICAL VIBRATION

Integrins Receptor/Effector



- Cells
 - Bone cells
 - Cartilage cells
 - Fat stem cells
- Critical Frequency range
 - Around 35 Hz

Mechanical Vibration

