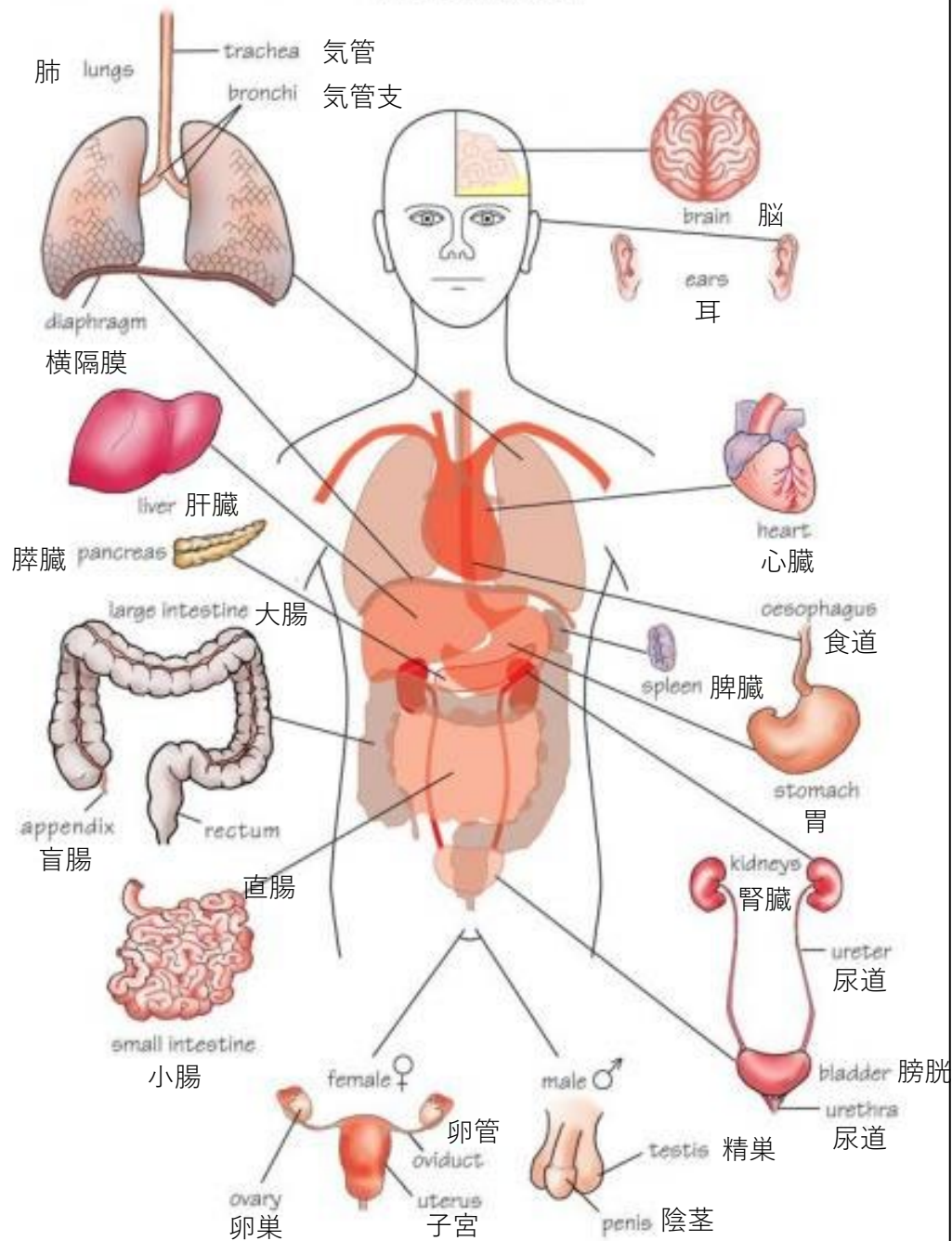


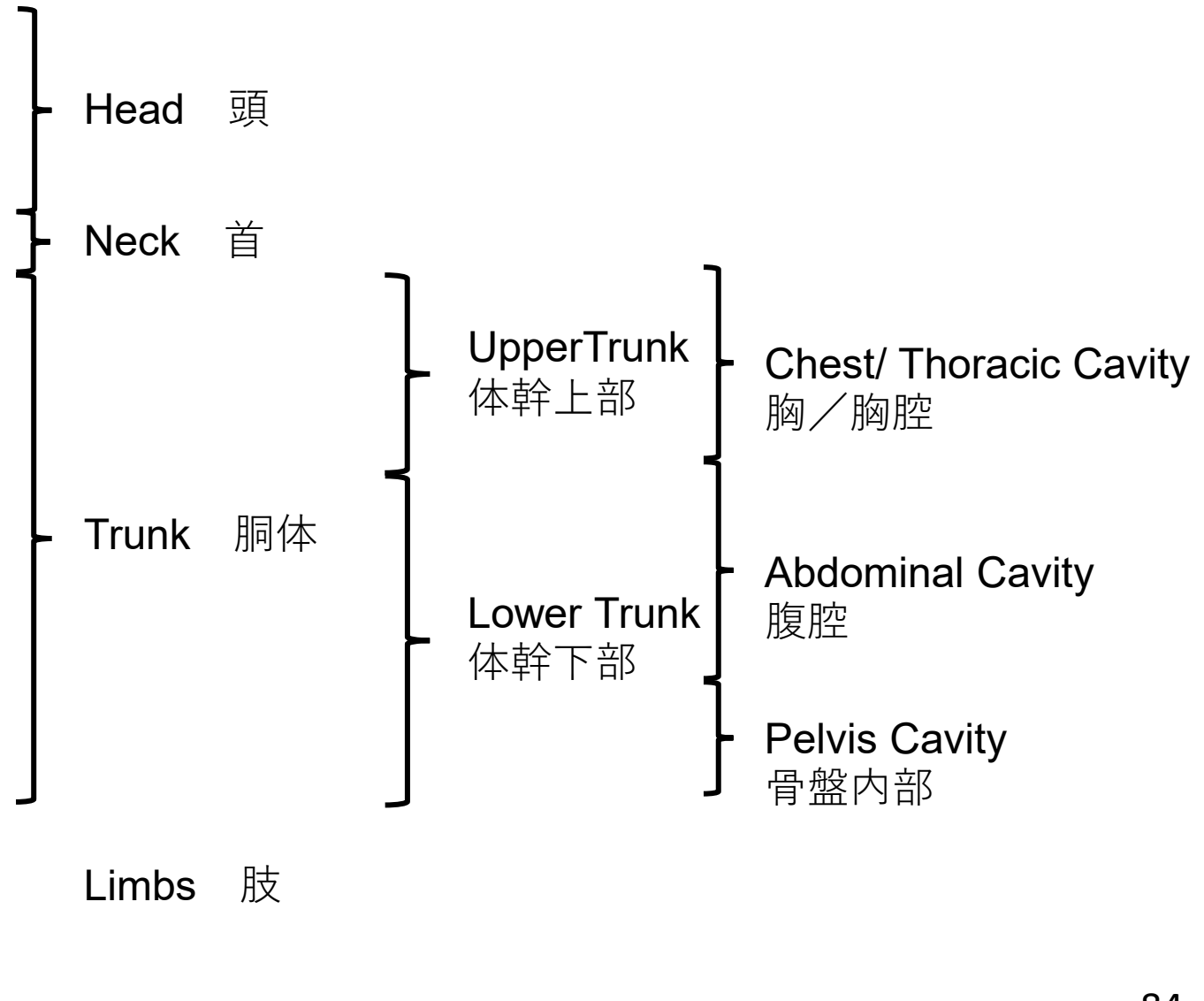
Yoga Anatomy

解剖学





Introduction 導入



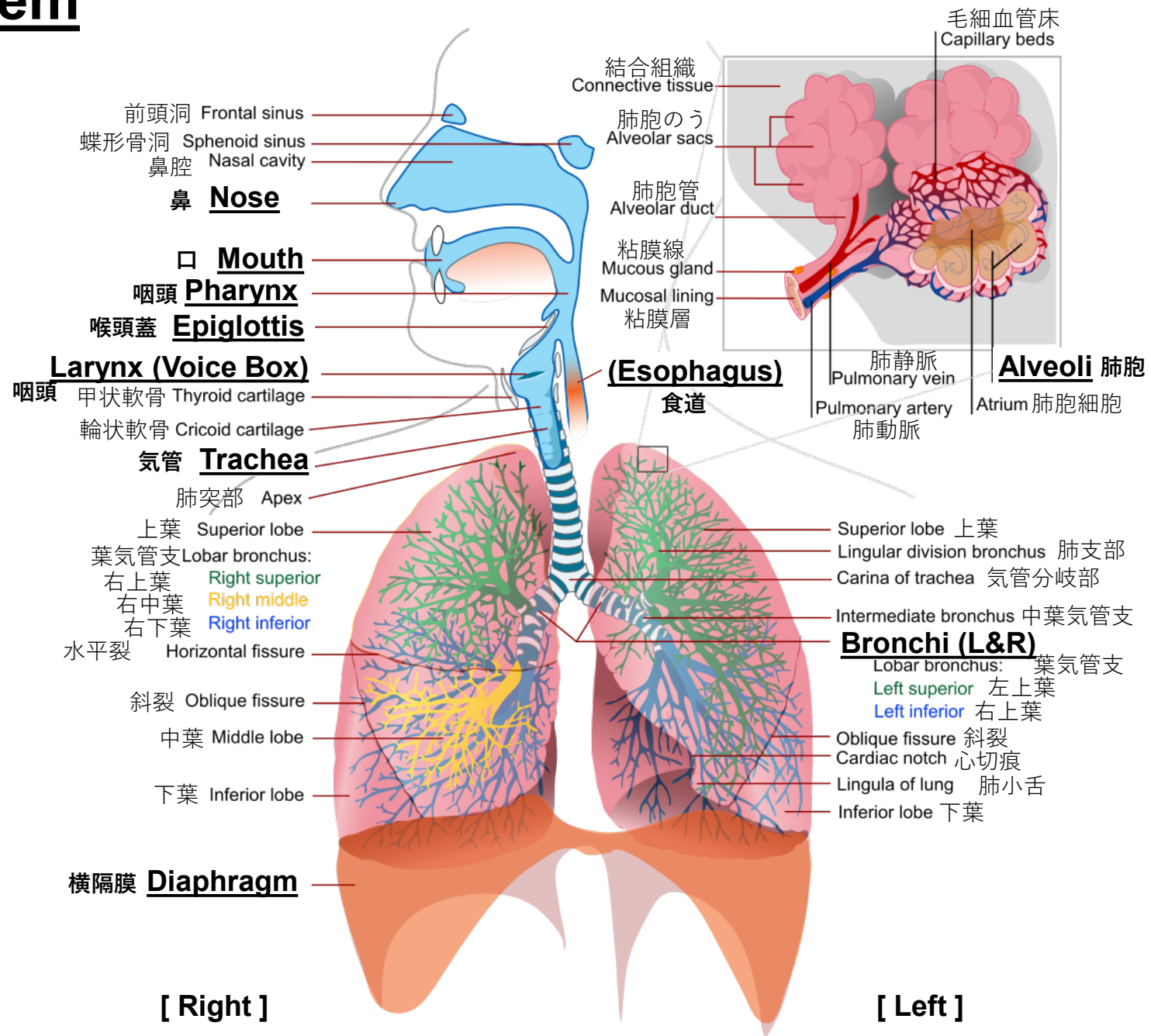
Content 内容

- Respiratory System 呼吸器系
- Cardiovascular System 循環器系
- Skeletal & Muscular System 骨格 & 筋肉系
- Discussion ディスカッション



Respiratory System

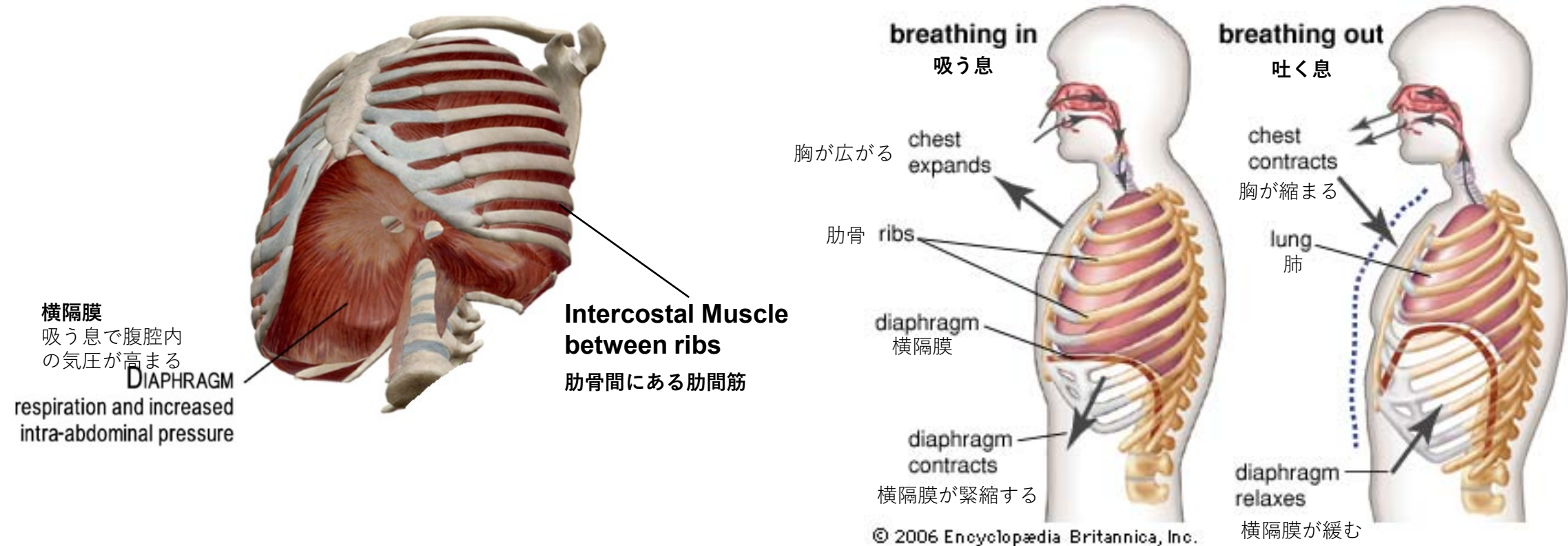
呼吸器系





Respiratory System 呼吸器系

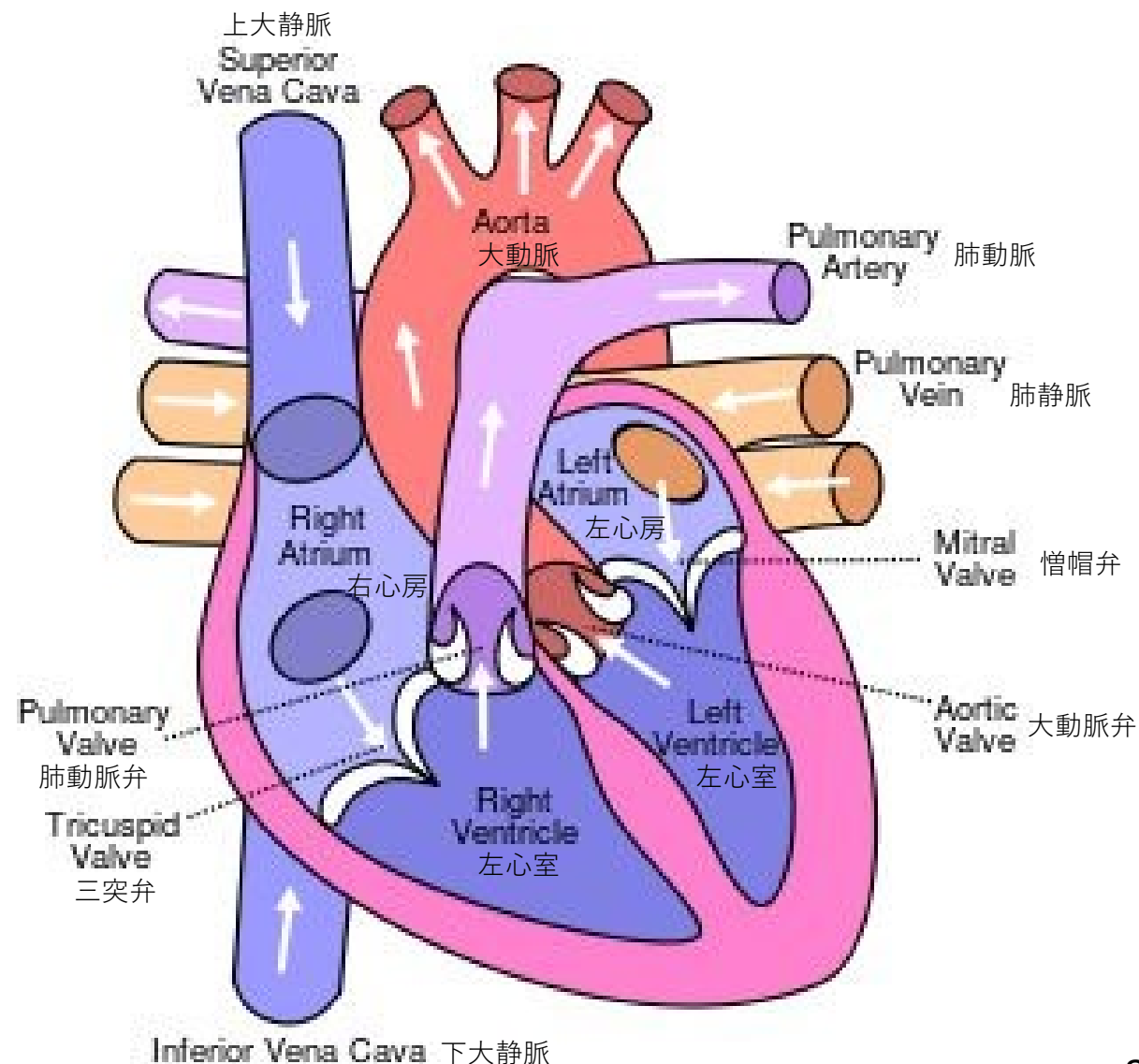
Breath呼吸/ min: 12-20/min	Inhale Air 吸う息	Exhale Air 吐く息
Oxygen 酸素	20% (19 – 21%)	16%
Carbon Dioxide 二酸化炭素	0.04%	4%
Nitrogen & rare gases 窒素、希ガス	79%	79%
Water Vapour 水蒸気	Variable 変動的	Saturated 飽和状態



Cardiovascular System 循環器系

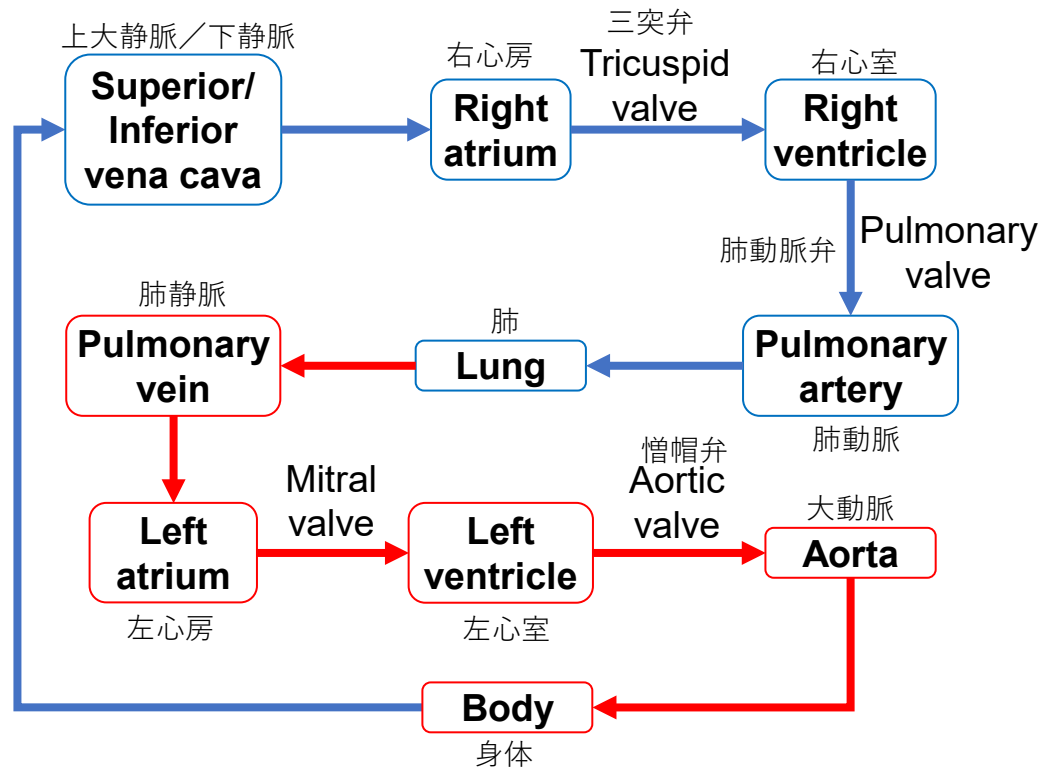
The main purpose of the cardiovascular system 循環器系の主な目的：

- to deliver oxygenated blood in the lungs; 酸素を含んだ血液を肺へ運ぶ
- to deliver nutrients from the intestines; 腸からの栄養を運ぶ
- to deliver hormones and other chemicals to all the cells in the body; ホルモンや他の化学物質を身体的全細胞へ運ぶ
- to pick up waste product eliminated by the lungs, liver, kidneys, and intestines. 肺や肝臓、腎臓、腸などで排出された老廃物を回収する





Cardiovascular System



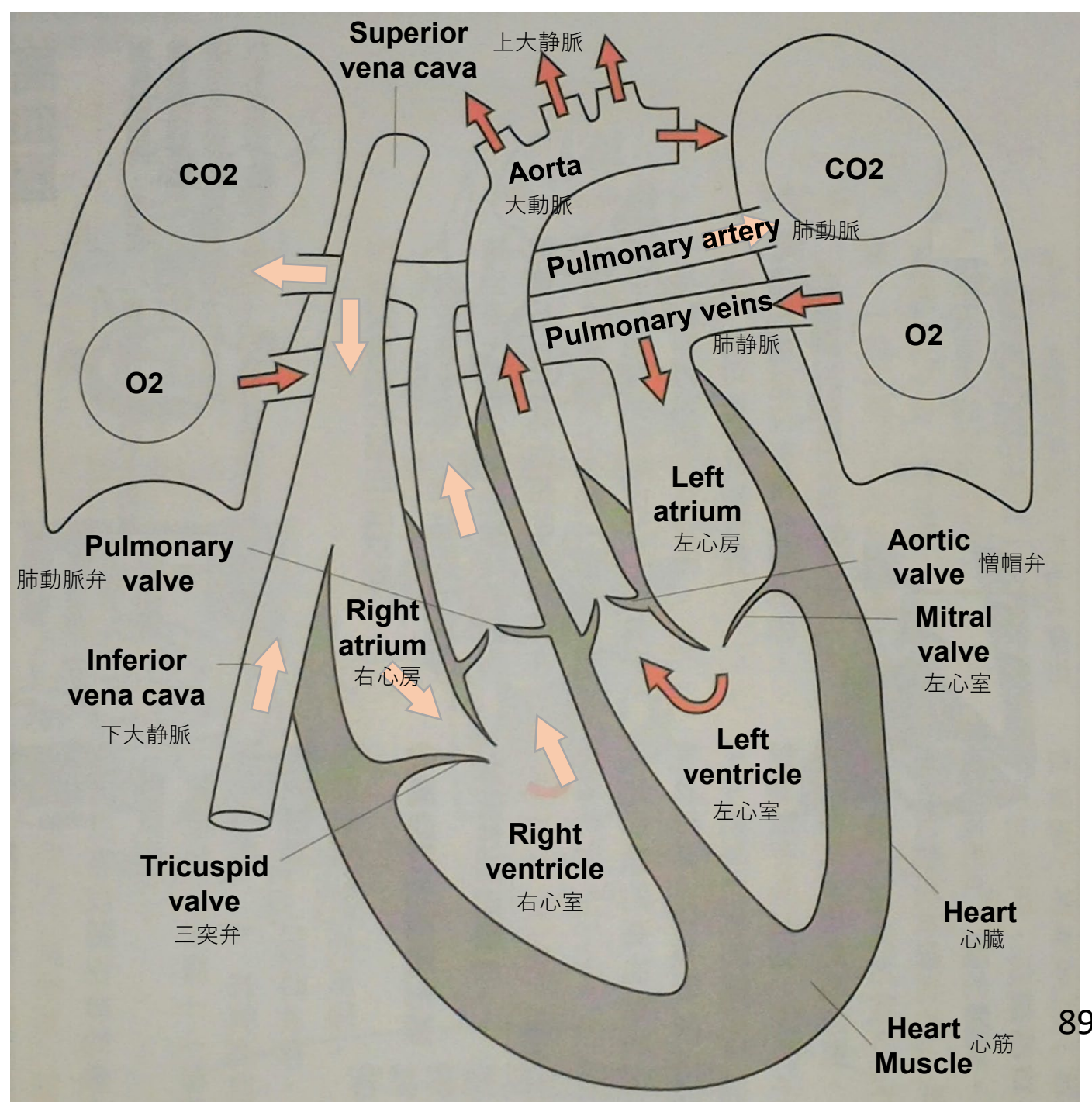
Pulse 脈拍 : 70-80 /min (for athlete アスリート)

50-60/min (for yogi ヨギ)

Blood / pulse 血圧脈: 70-80ml

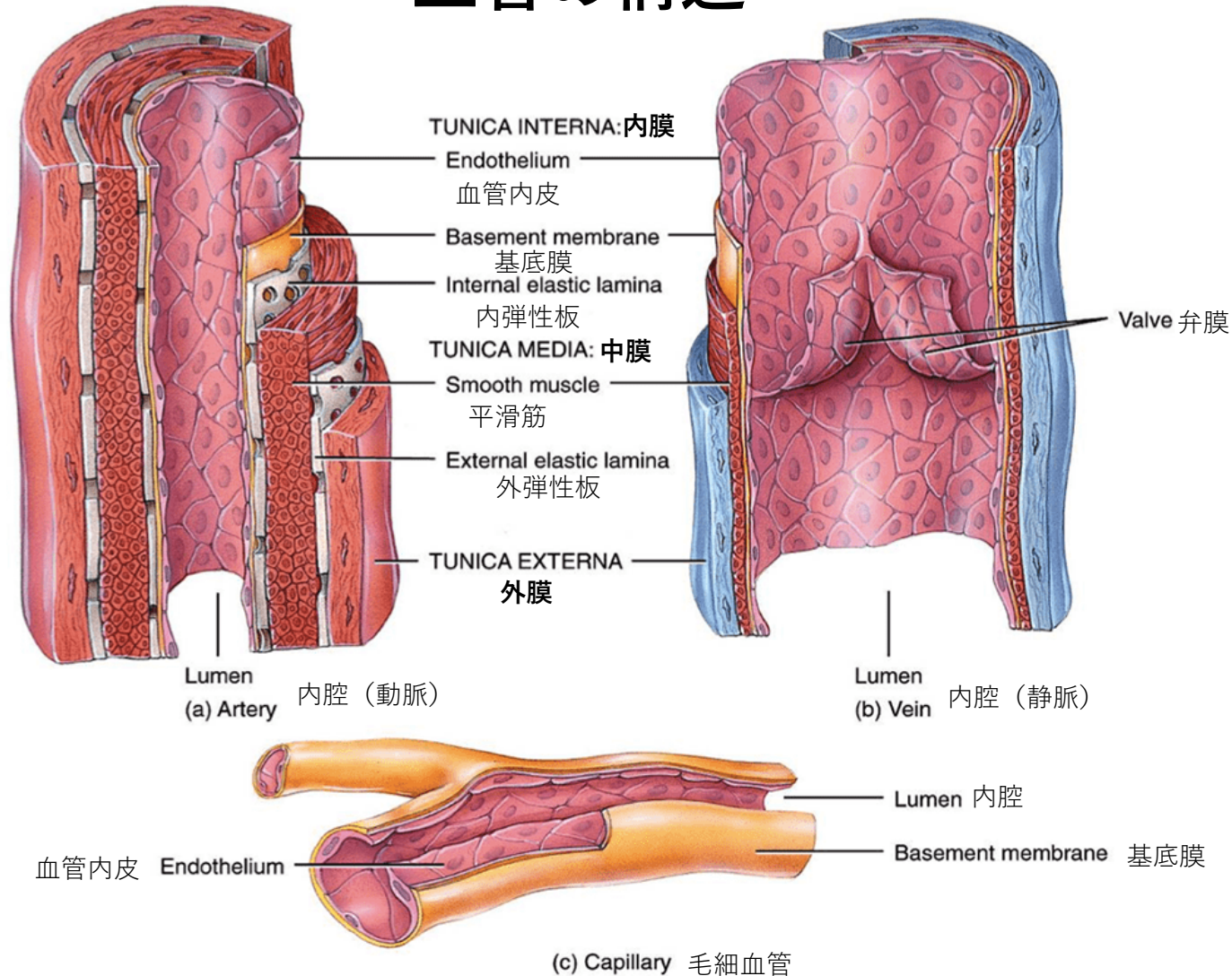
Blood pressure 血圧: 120/80 mm/hg

"High" blood pressure 高血圧: 140/90 mm/hg



Structure of Blood Vessels

血管の構造

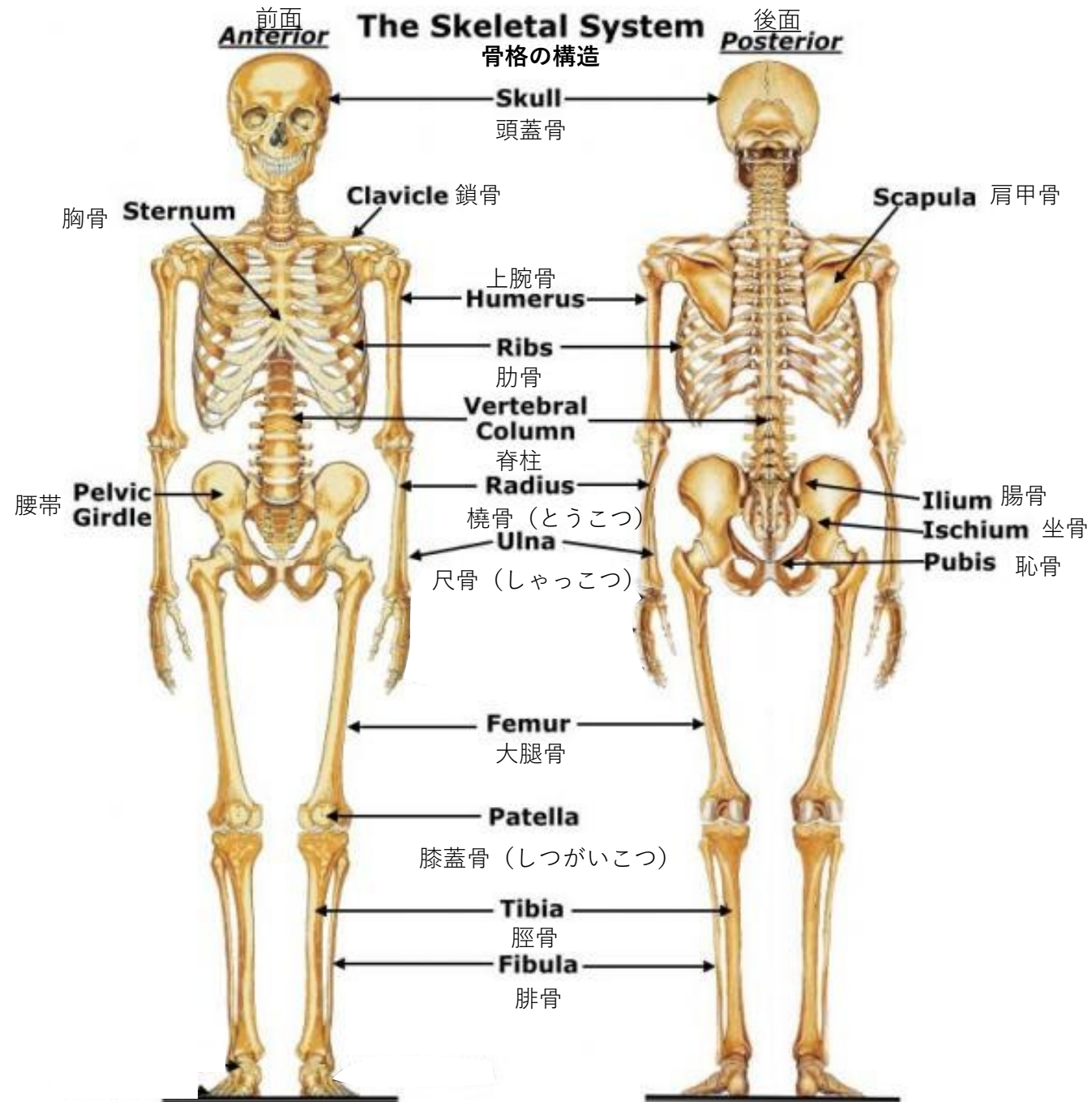


Skeletal System 骨格

- No. of Bone: 206 (include: Vertebrae – **33**)
骨の数：206本（脊椎を含む—33）
- Function 機能:
 - Support body, protect organs and tissue; 身体を支え、臓器や組織を保護する
 - Attachment for muscles; 筋肉と筋肉をくっつける
 - Levers of local motions; 局部運動の操作棒となる
 - Bone marrow produces red blood cells; 柔らかな骨は赤血球を生産する
 - Storehouse of minerals; etc. ミネラルの保存庫、など。
- Bone type: Long, Short, Flat, Irregular and Sesamoid
骨の種類：長い、短い、平たい、不規則、種子骨

Skeletal System

骨格



Joints 関節



- Classification 分類

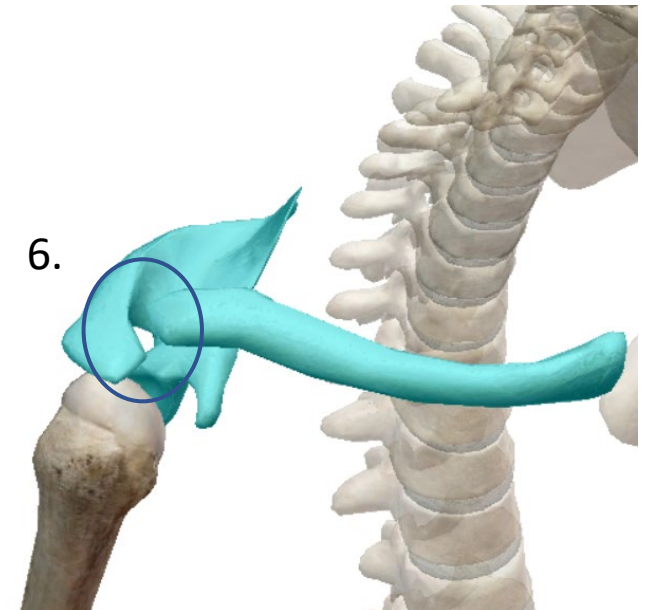
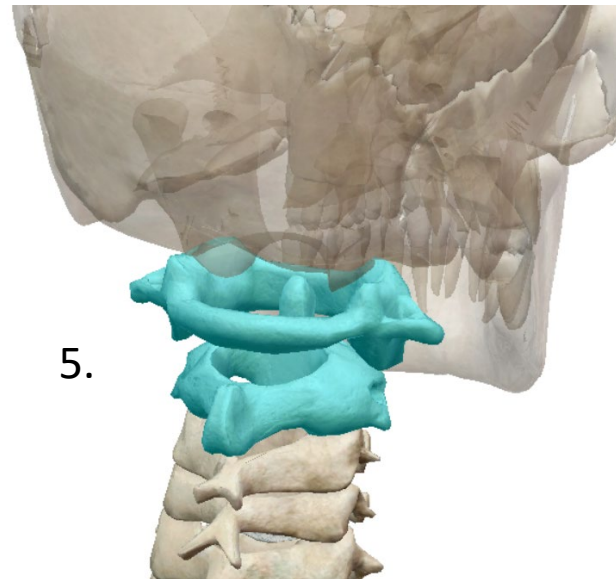
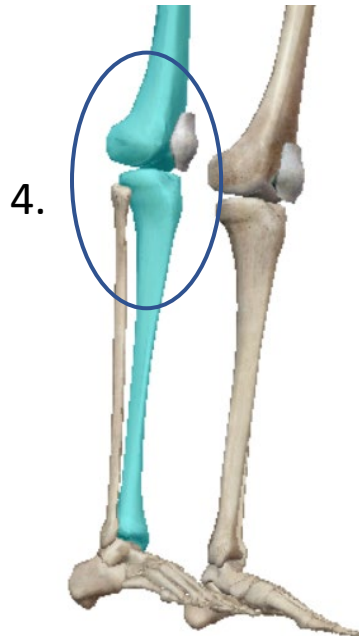
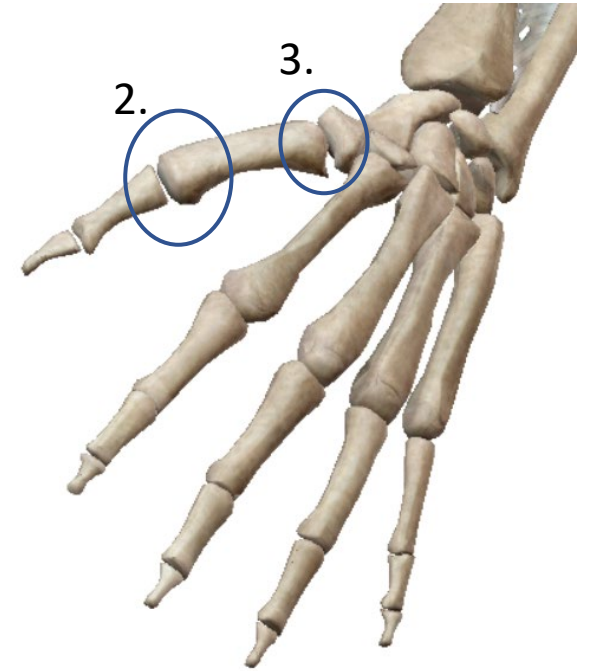
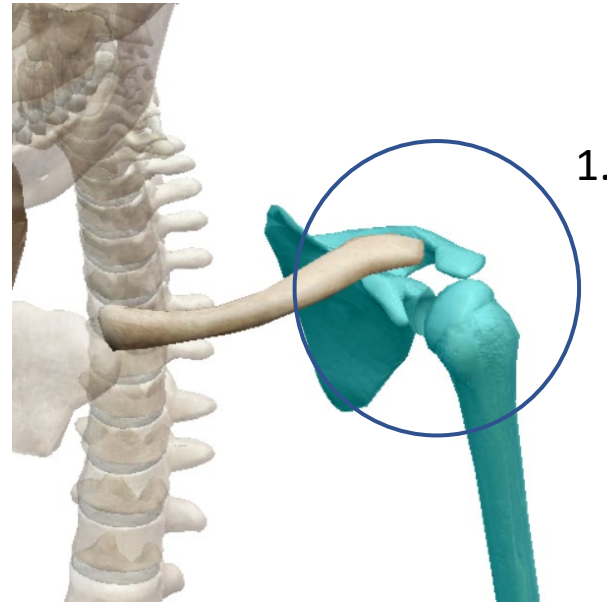
- **Fibrous joint: No movement is allowed**
線維性関節：運動はできない
- **Cartilage joint: Slightly flexible than fibrous joint**
関節軟骨：線維性関節よりは少し柔軟
- **Synovial joint: Movable joint**
滑膜性の関節：可動関節
 1. **Ball and socket joints** 球関節およびソケット（受け口）関節
 2. **Ellipsoid joints** 橢円体関節
 3. **Saddle joints** 鞍関節
 4. **Hinge joints** 蝶番関節
 5. **Pivot joints** 車軸関節
 6. **Gliding / Plane joints** 滑走関節

Joints 関節

- Synovial joint: Movable joint

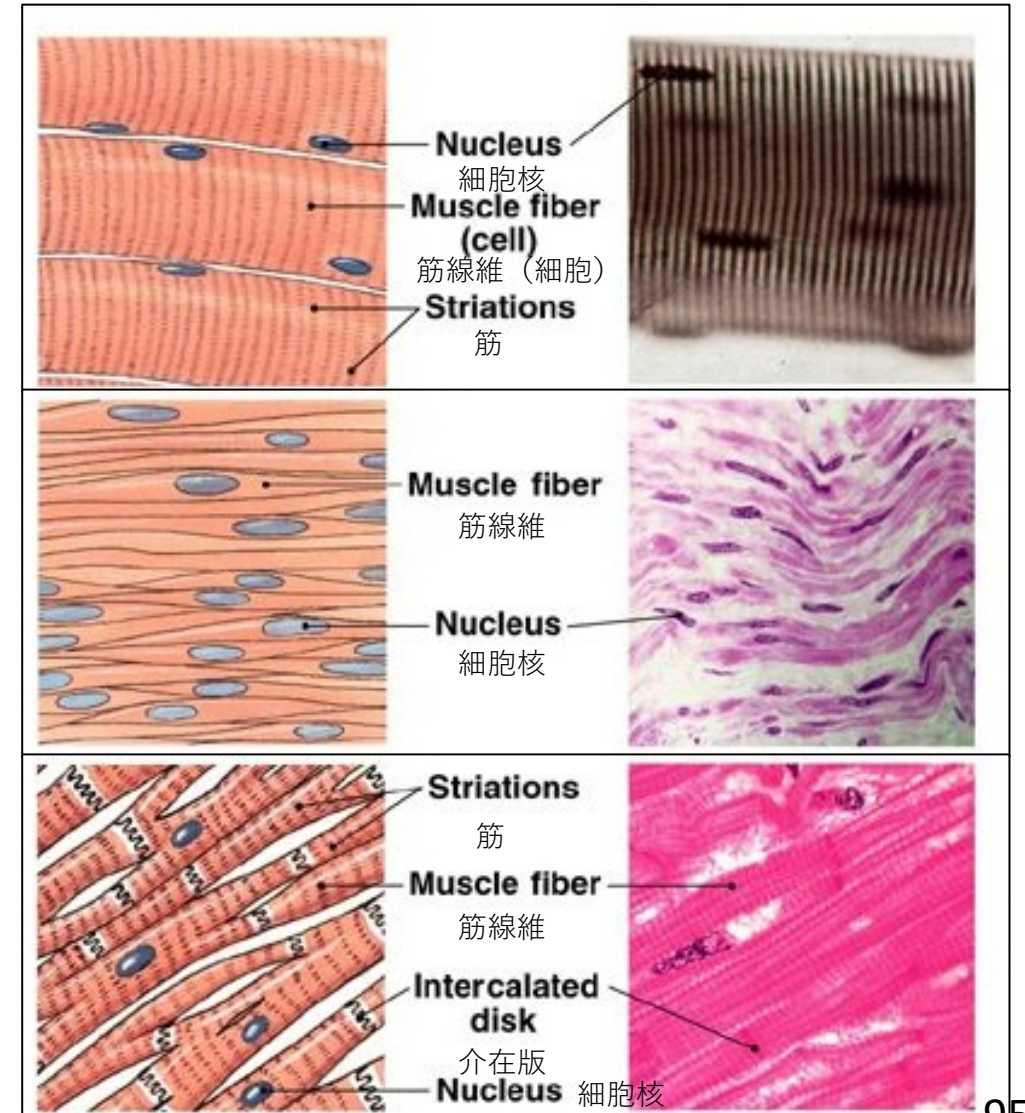
滑膜性の関節：可動関節

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6. Gliding / Plane joints 滑走関節



Muscle 筋肉

- 600+ muscles 600以上の筋肉
- 1/3 of body weight 体重の3分の1
- Types of muscle: 筋肉の種類
 - Voluntary / Skeletal / Striated
随意筋 / 骨格筋 / 横紋筋
 - Involuntary/ Smooth / Unstrained
不随意筋 / 平滑筋 / 緩んだ筋肉
 - Cardiac Muscle 心筋



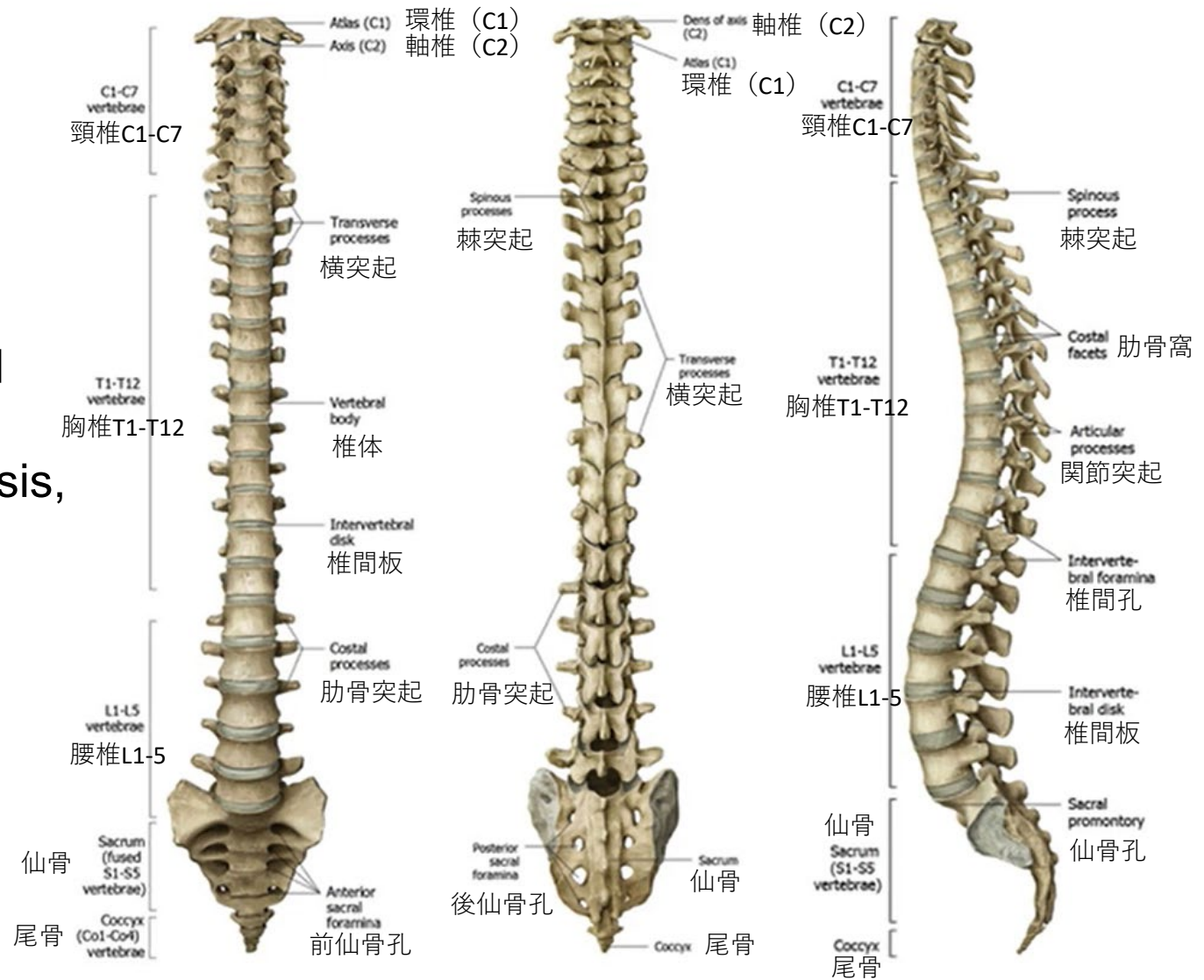


Muscle 筋肉

- Type of Muscle Stretch 筋肉伸長のタイプ
 - Static Active 静的アクティブ
 - Static Passive 静的パッシブ
 - PNF (Proprioceptive neuromuscular facilitation) 固有受容性神経筋促通法
 - Dynamic Stretch 動的伸長
- Type of Muscle Contraction 筋収縮のタイプ
 - Isotonic Contraction 等張性収縮
 - Eccentric Contraction 伸張性収縮
 - Isometric Contraction 等尺性収縮

Spine - Vertebral Column 脊椎-脊柱

- No. of bone 骨の数: 33
 - Cervical 頸椎 (Neck 首) – 7
 - Thoracic 胸椎 (Chest 胸) – 12
 - Lumbar 腰椎 (Lower back 腰) – 5
 - Sacrum 仙骨 – 5 becomes 1
 - Coccyx (tail bone) 尾骨 – 4 becomes 1
 - 4 curves: Cervical lordosis, Thoracic kyphosis, Lumbar lordosis, Sacral kyphosis
- 4つの曲線：
頸椎前弯、胸椎後弯、脊柱前弯、仙骨後弯





Inter - Vertebral Disc 椎間板

