슬기로운 1년차 생활

소아심장편

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슬기로운 1년차 생활

- 슬기?
- Wisdom, wits
- 사리를 바르게 판단하고 일을 잘 처리해 내는 재능

나의 전공의 생활

- 슬기롭지 않음…
- 후회되는 점
- Professional
  - 세 살 버릇 여든까지 간다
- Personal
  - 시간 금방 간다

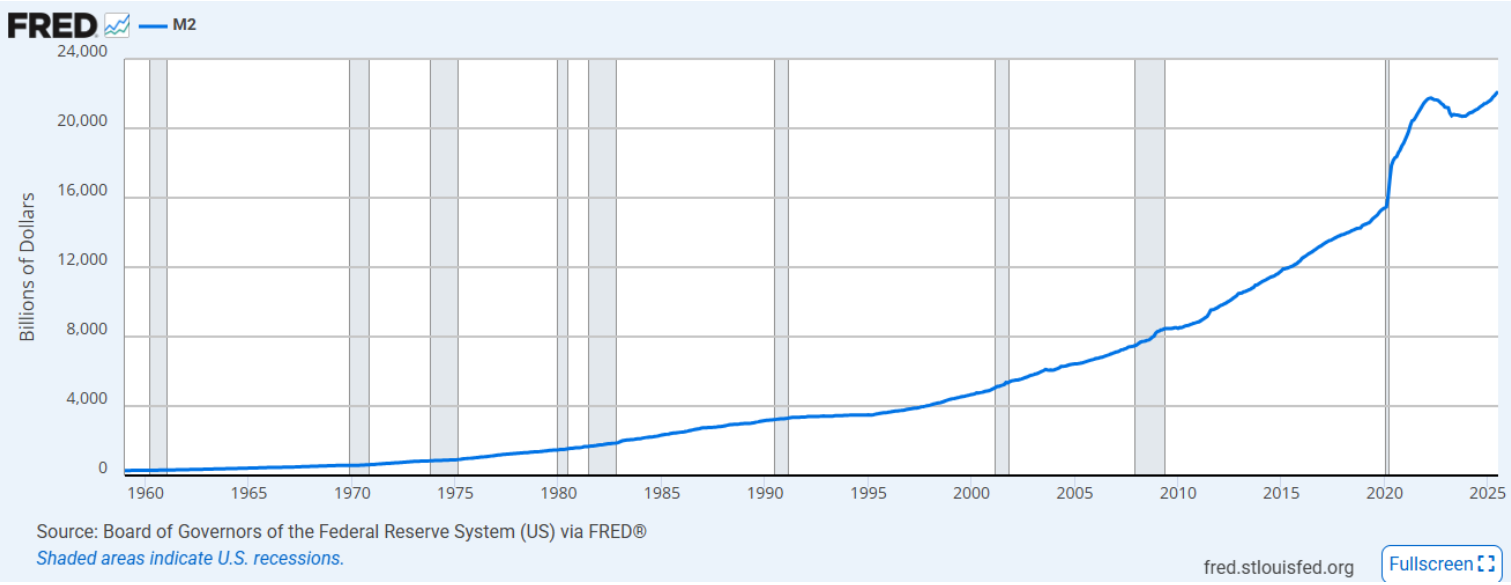
Professional

- 진료
  - Surgical skill, patient care
- 연구
  - 논문
- 인성
  - 사회성
- 1년차 때부터… (버릇, 평가)

Personal

- 자기관리
- 신체
- 연애, 결혼
- 투자

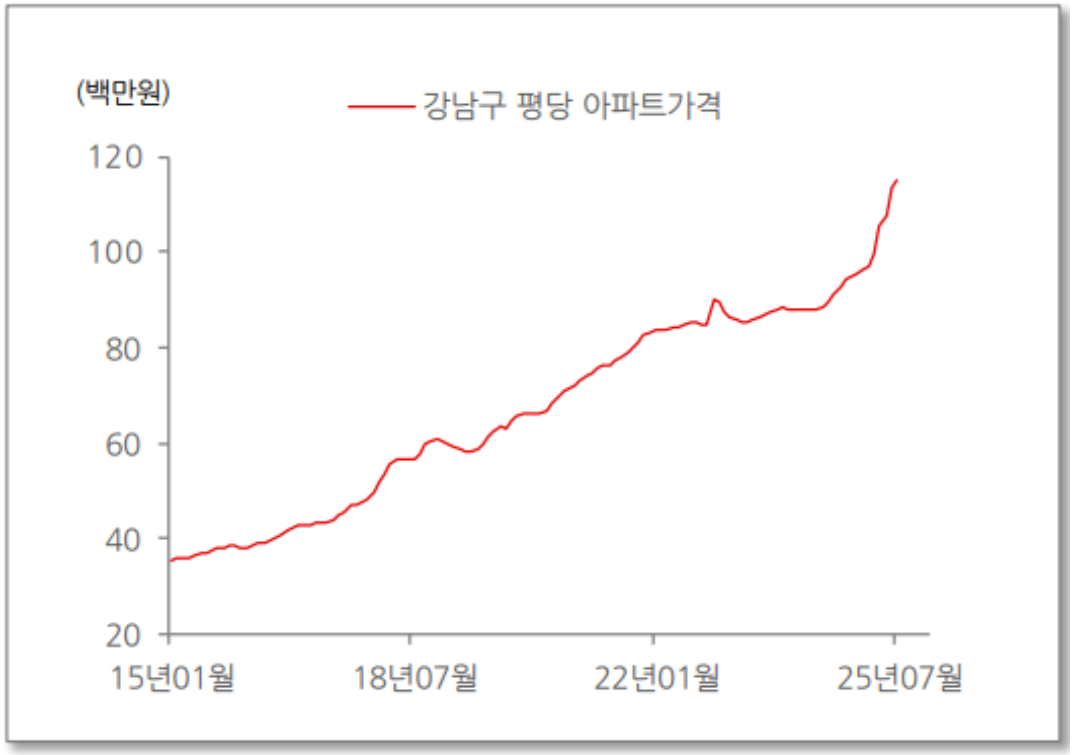
Inflation


FRED
M2
24,000
20,000
16,000
12,000
8,000
4,000
0
Billions of Dollars
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
Source: Board of Governors of the Federal Reserve System (US) via FRED®
Shaded areas indicate U.S. recessions.
fred.stlouisfed.org
Fullscreen


1oz U.S. Gold Coin
2025
$3,334
1oz U.S. Gold Coin
1933
$20.67

Inflation

- 노동소득 (월급) ↓
- 식비?
- 서울 아파트?



자료: KB국민은행, BNK투자증권

Asset

- 자산 = 경제적 가치의 원천

- 부동산
- 주식 (기업)
- 원자재 (금)
- 채권
- *예적금, 암호화폐*

- 부자 X → 최소한의 물가 방어 (구매력 유지)
- 잉여소득 → 노후보장
- 시간!, 경제적 자유

Investment

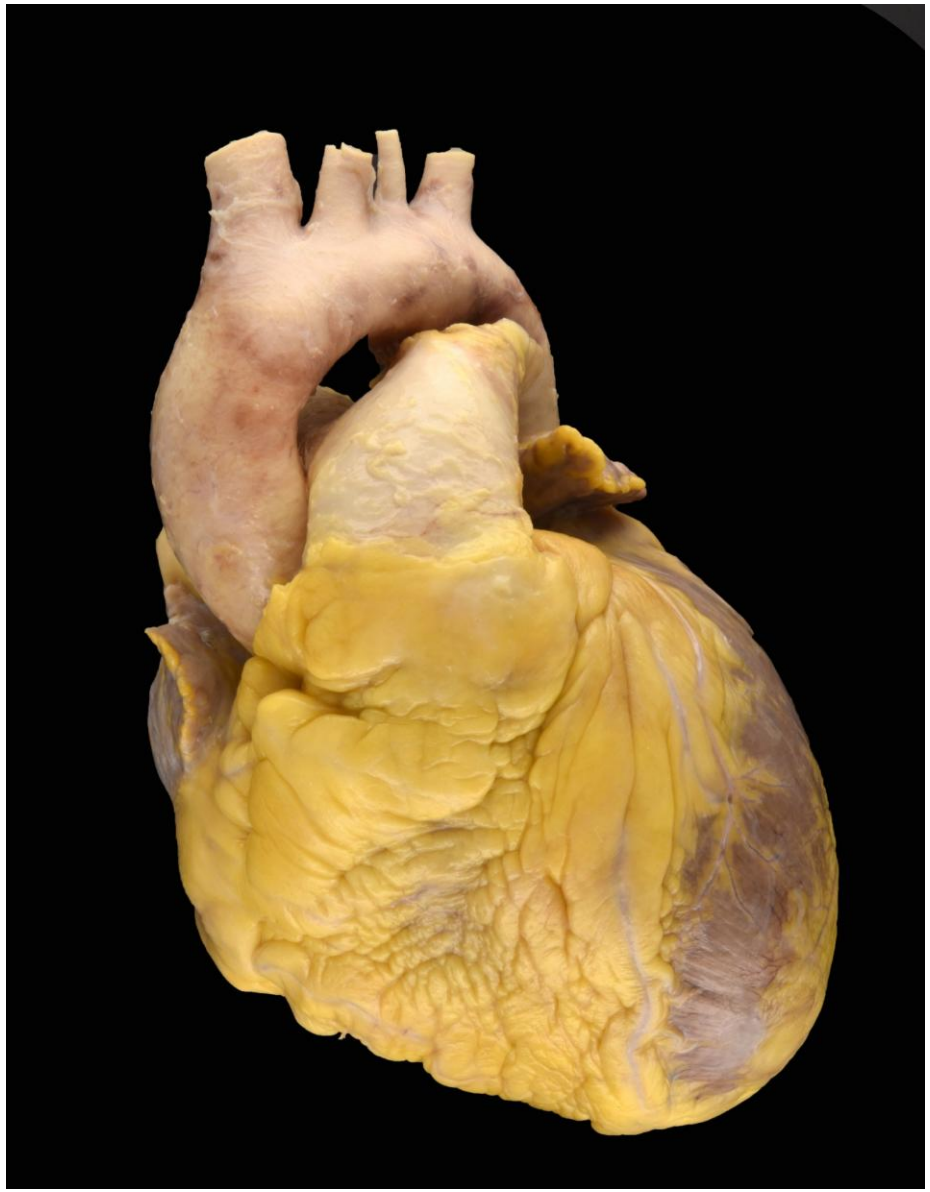
- High risk, high return
- No risk, no reward

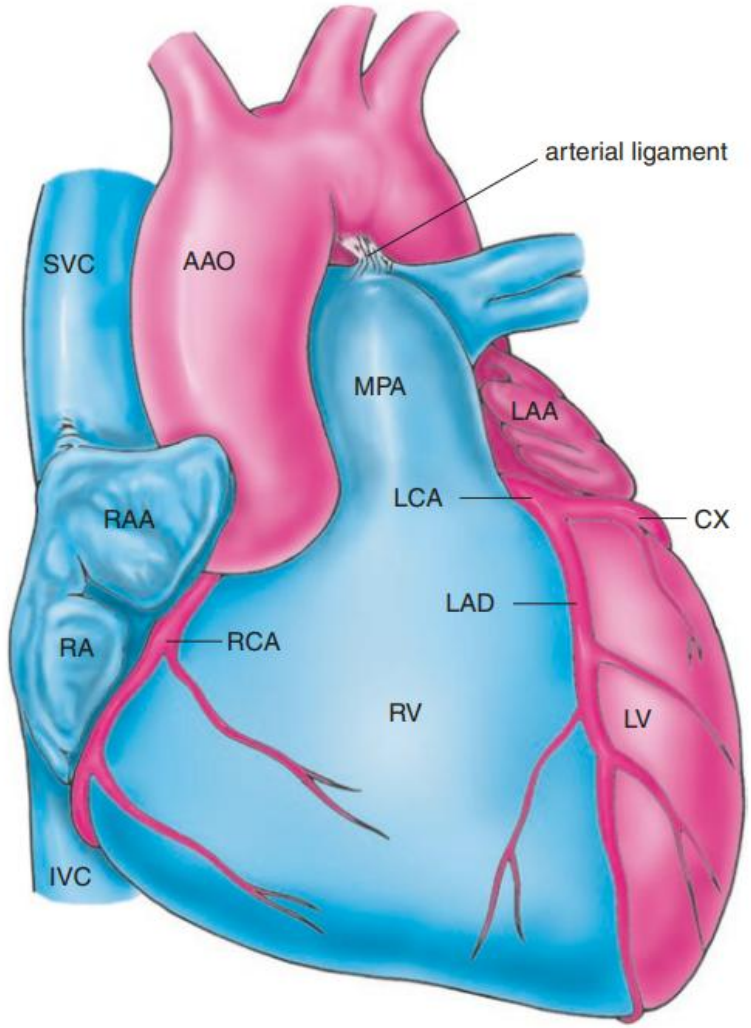
- 당신의 소중한 시간 (젊음과 생명) → 돈

- 다양한 자산에 분산 투자 (적립식)
- 적절한 대출 (leverage)

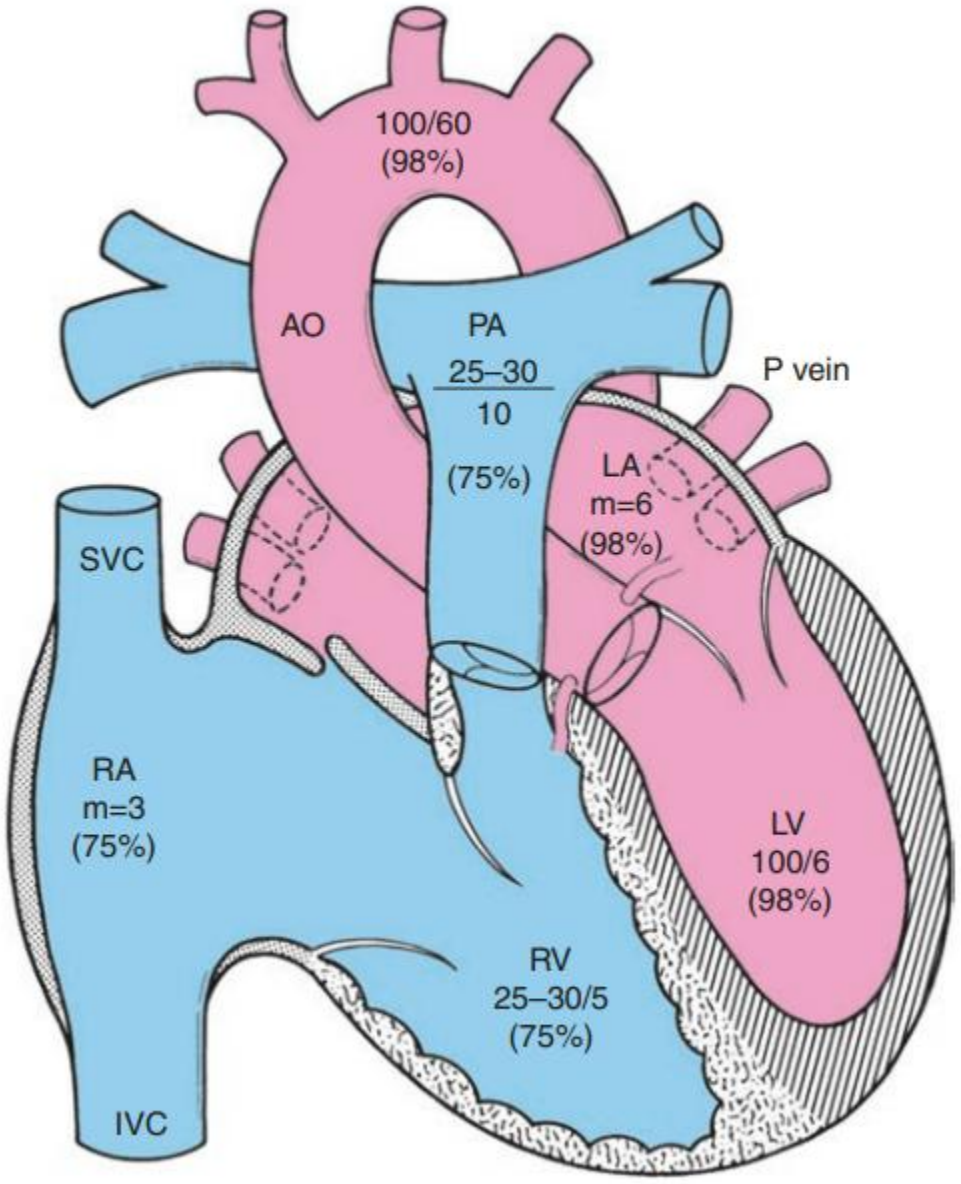
- 잘 모르겠으면…
  - 미국 S&P 500 ETF + 서울 아파트 …

Heart?

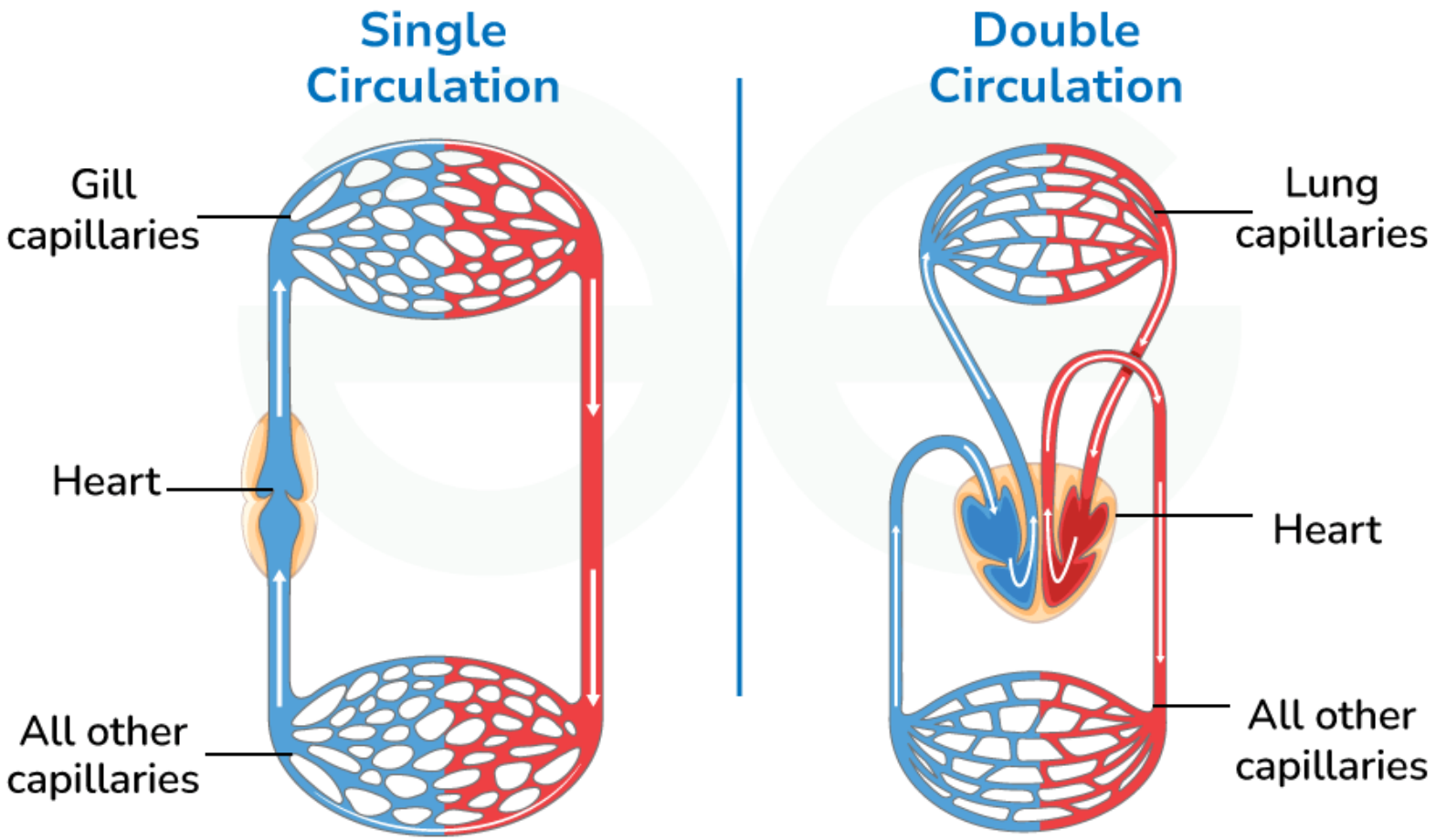



arterial ligament
SVC
AAO
MPA
LAA
LCA
CX
RAA
LAD
RA
RCA
RV
LV
IVC

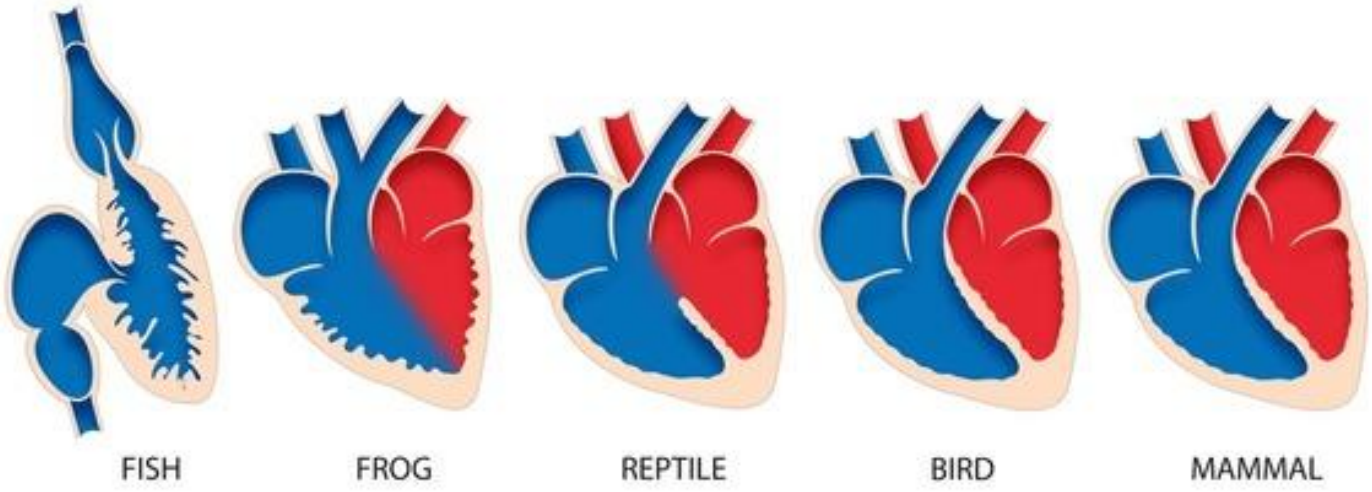
Heart?

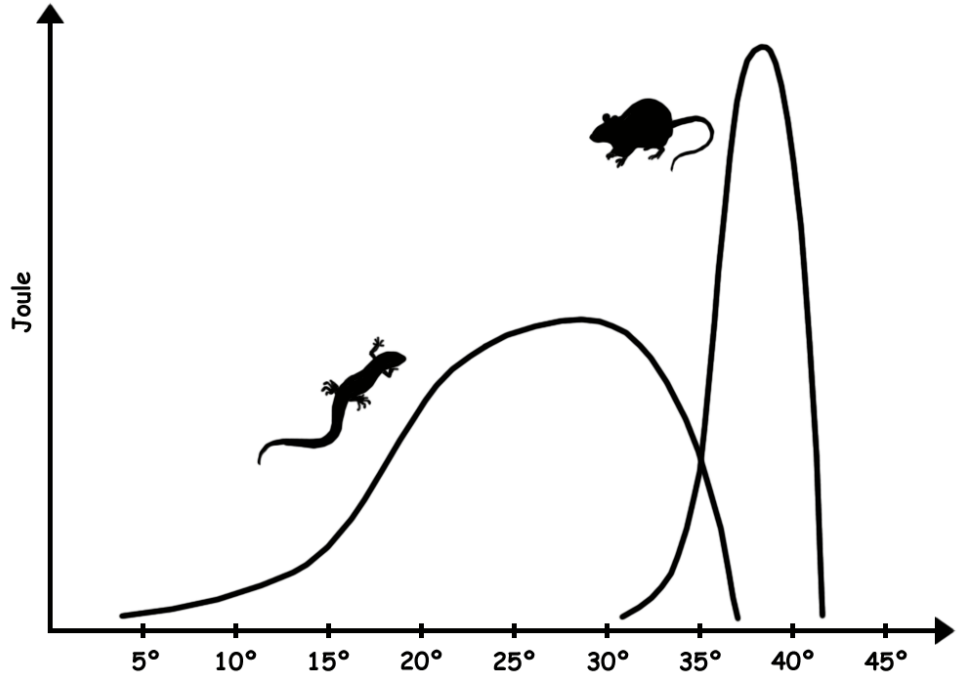

100/60
(98%)
AO
PA
25–30
10
(75%)
P vein
LA
m=6
(98%)
SVC
RA
m=3
(75%)
LV
100/6
(98%)
RV
25–30/5
(75%)
IVC

Double Circulation



Separated Double Circulation





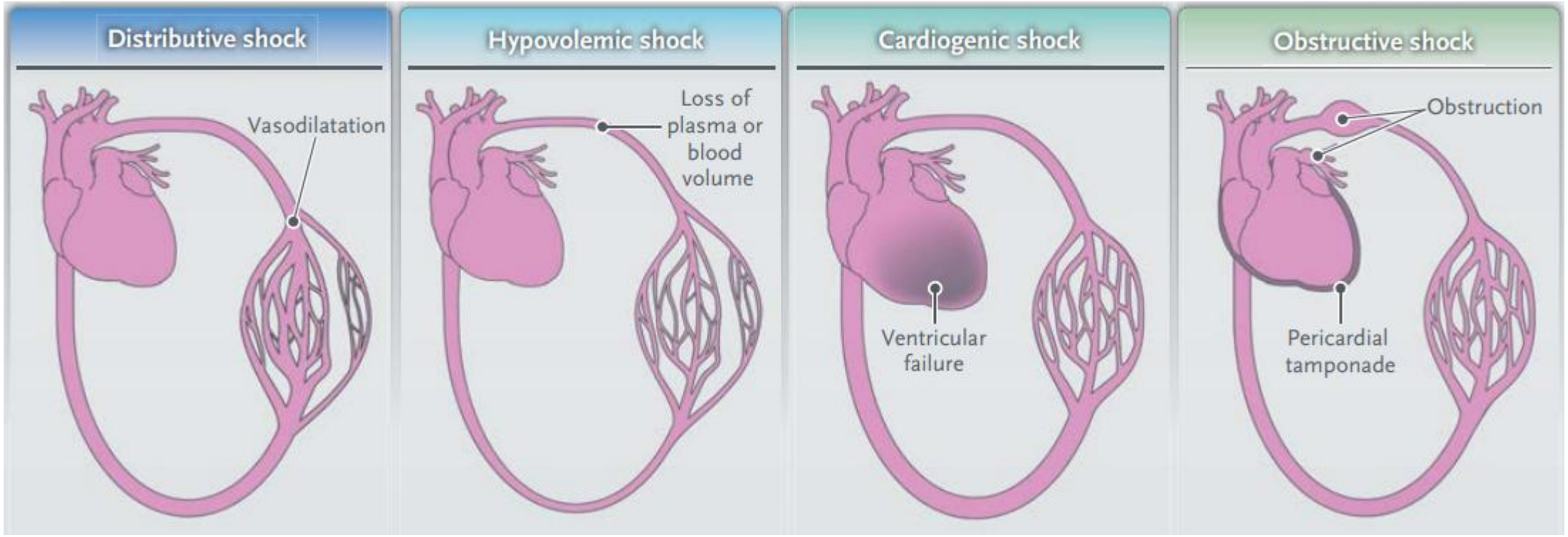
- Efficiency → higher metabolic rate (warm-blooded)

Circulatory System

- Function?
- Waste removal
- Hormone distribution
- Thermoregulation
- Tissue oxygenation

Circulatory System

- Tissue oxygenation X = circulatory shock



Pathology

- Congenital heart defects
  - Causes?
- Defect → shunt
- Pressure difference
  - Pulmonary circulation
    - Low-pressure system → to avoid lung damage
    - Less muscular walls, high capillary area
  - Systemic circulation
    - High-pressure system → gravity, high volume, long distance
    - Blood distribution with smooth muscle (resistant)

Pathology

- Left-to-right (L-R) shunt
- Atrial septal defects (ASD)
- Ventricular septal defects (VSD)
- Patent ductus arteriosus (PDA)
  - Aorta-pulmonary artery
- *Patent foramen ovale (PFO)*

Left-to-right Shunt

- Pulmonary
  - Pulmonary vascular remodeling
    - Pathologic thickening and structural alteration of arterial walls
  - Pulmonary vascular disease
  - Pulmonary hypertension
  - Eisenmenger syndrome: pulmonary vascular resistance > systemic (R-L)
  - Right heart failure

- Cardiac
  - Volume overload
  - Heart failure

Right-to-left Shunt

- Shunt + right-side pressure > left-side

- Pulmonary stenosis

- Eisenmenger syndrome
- *Intrapulmonary: atelectasis, pneumonia, AV malforamtions*

- Cyanosis, hypoxia → organ damage

Cardiac Output

- Cardiac output !!!
  - Perfusion
  - Oxygen delivery
  - Adaption
  - Failure
- *Cardiac output = blood pressure / systemic vascular resistance*

Derived Variables

The goal is to provide enough oxygen delivery to satisfy tissues' demands

1. Oxygen is transported in the blood mainly by Hb

$$CaO_2 = (Hb \times 1.39 \times SaO_2) + 0.003_{(mmHg)} \times PaO_2$$

Oxygen bound to Hb — Oxygen Dissolved

2. Oxygen is in the blood is transported to the tissues by CO

$$DO_2 = CaO_2 \times CO$$

3. Oxygen Consumption

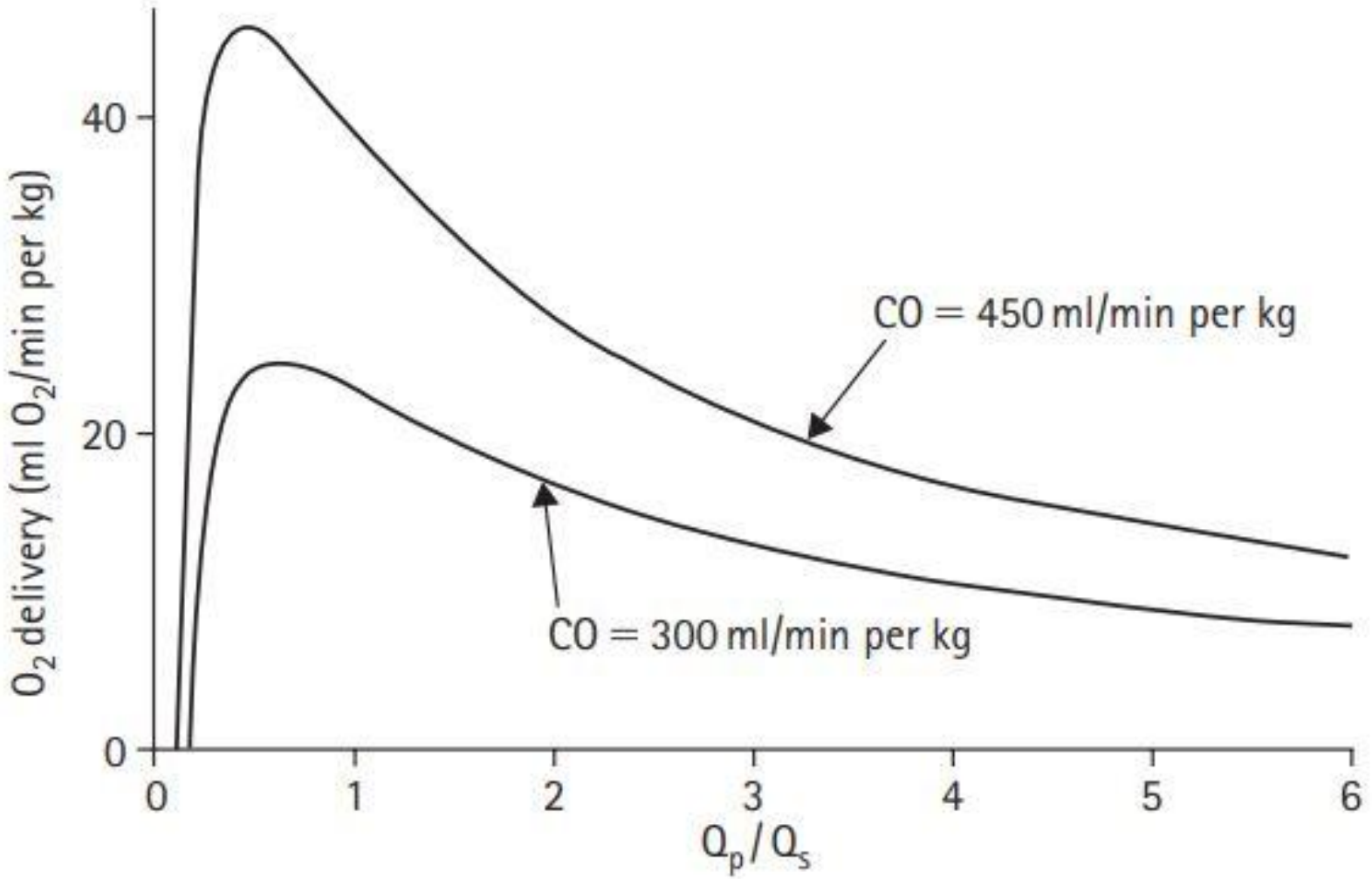
$$VO_2 = (CaO_2 - CvO_2) \times CO$$

$$Qp = \frac{\dot{V}O_2}{CpvO_2 - CpaO_2}$$

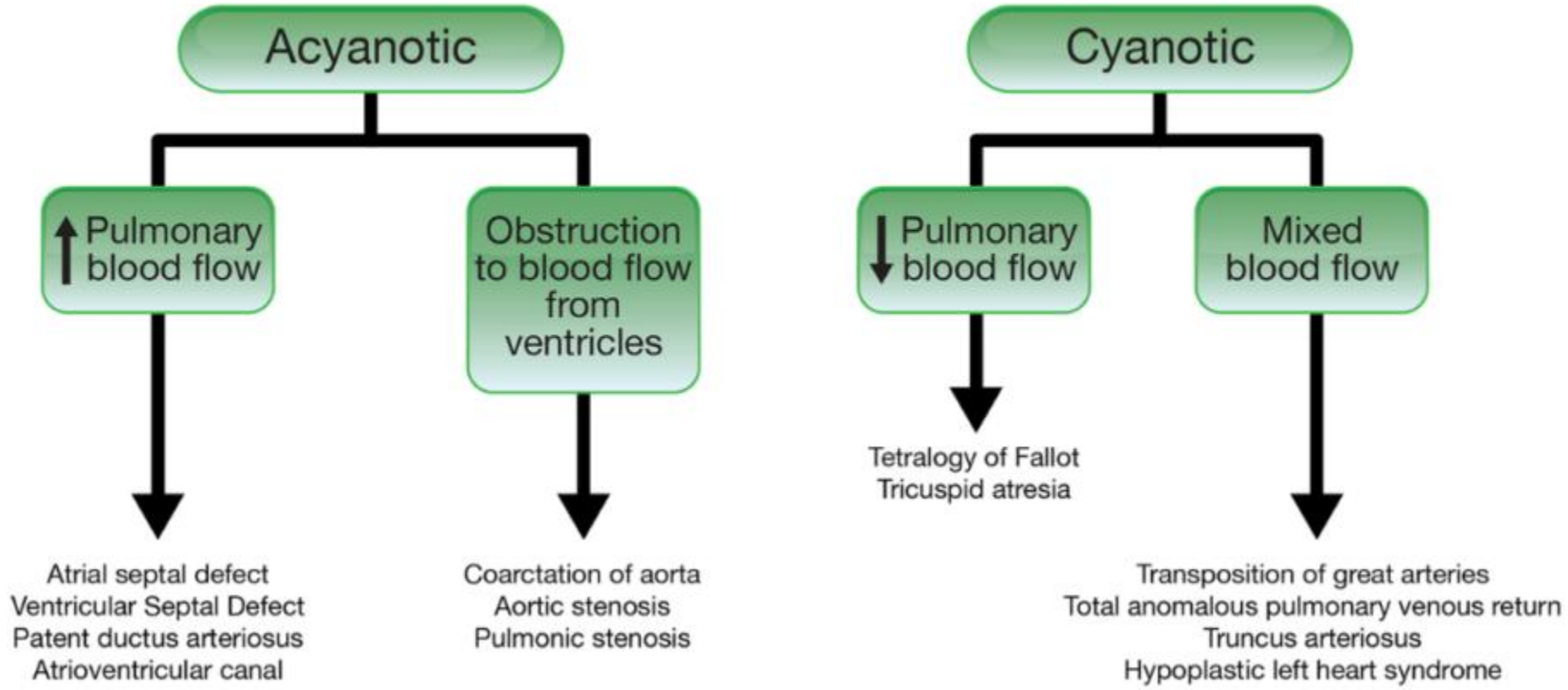
$$Qs = \frac{\dot{V}O_2}{CaoO_2 - CmvO_2}$$

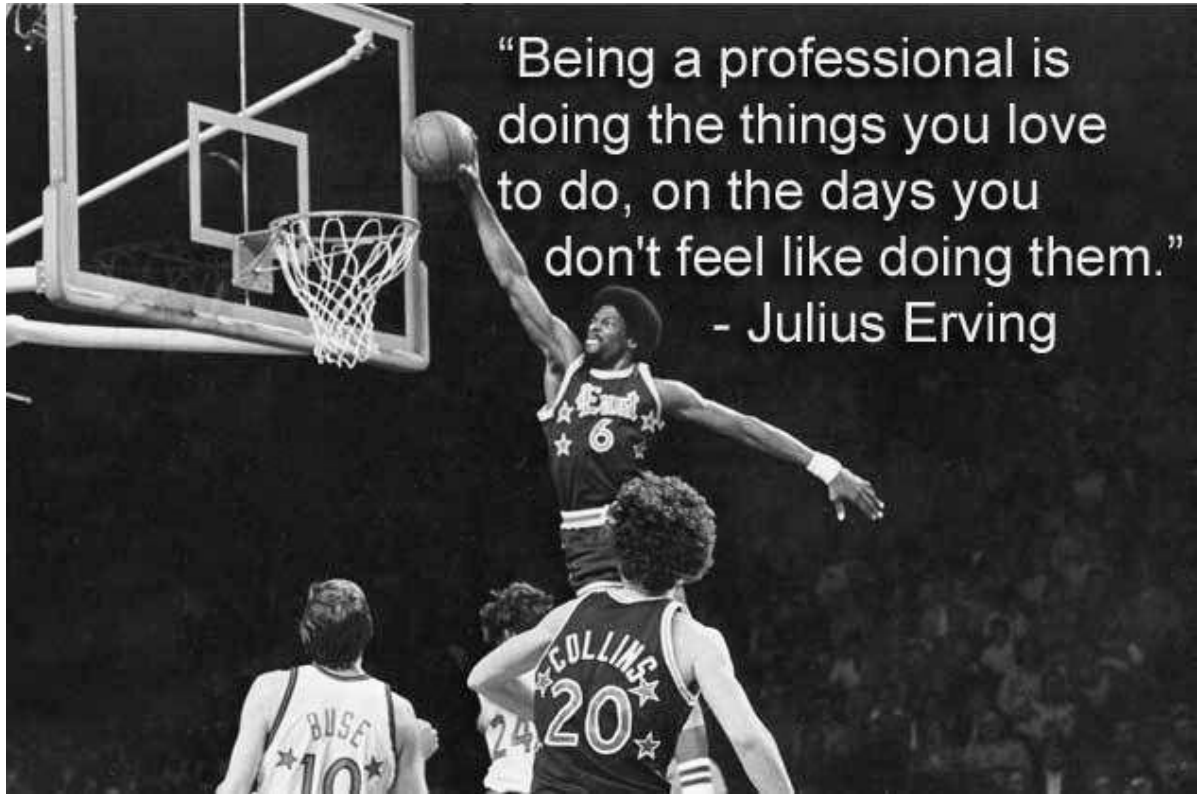
Doing the algebra for getting the ratio of Qp/Qs

$$\frac{Qp}{Qs} = \frac{CaoO_2 - CmvO_2}{CpvO_2 - CpaO_2} = \frac{Sat\ ao - Sat\ svc}{Sat\ pv - Sat\ pa}$$


40
20
0
O_2 delivery (ml O_2/min per kg)
CO = 450 ml/min per kg
CO = 300 ml/min per kg
0
1
2
3
4
5
6
Q_p/Q_s

Classification of Congenital Heart Disease




"Being a professional is
doing the things you love
to do, on the days you
don't feel like doing them."
- Julius Erving
BUSE
10
COLLINS
20
24


경제적 자유

YONSEI UNIVERSITY
COLLEGE OF MEDICINE