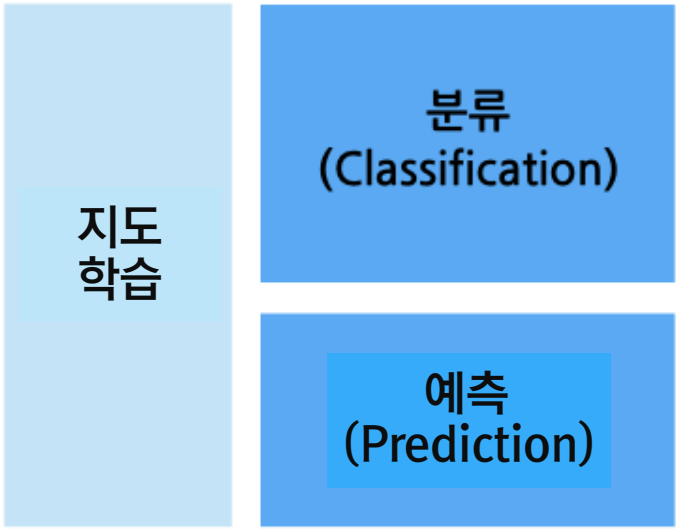
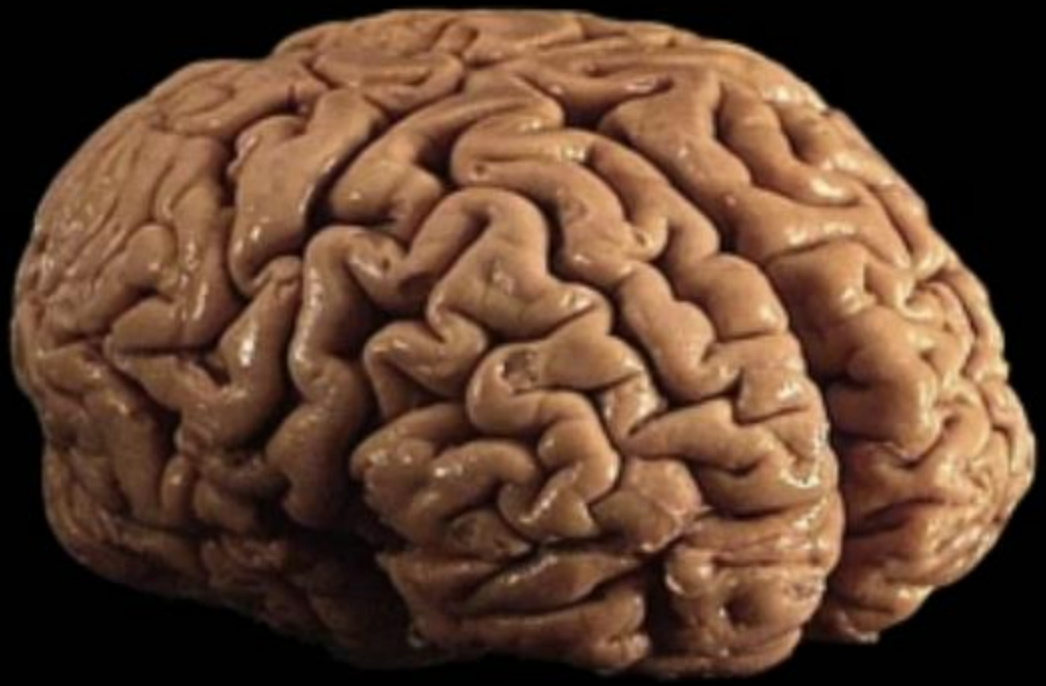
AI, 어떻게?

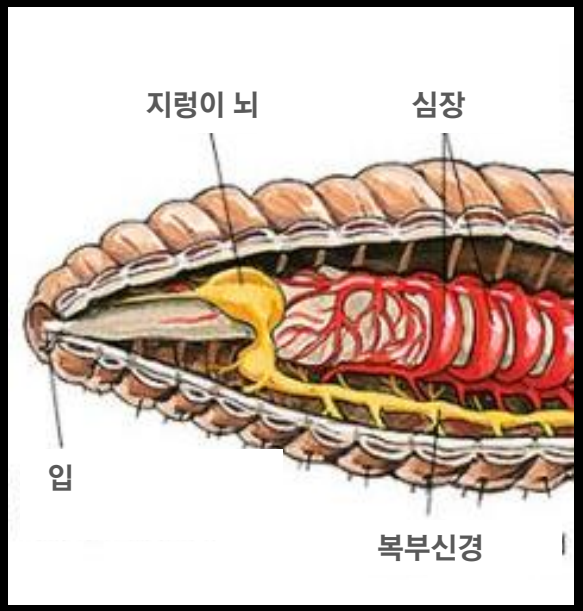
머신러닝 알고리즘들

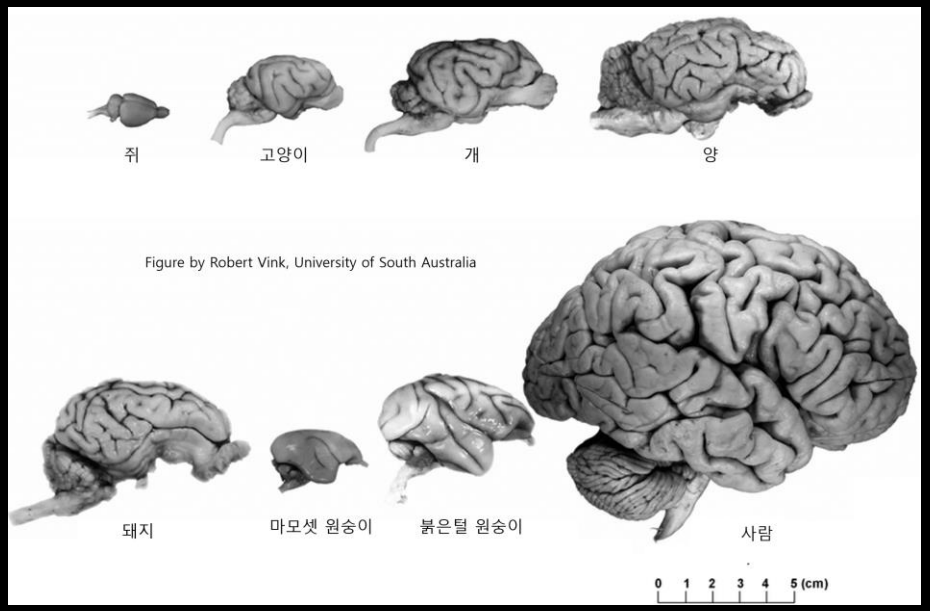


- KNN (K-nearest neighbors)
- Naive Bayes
- Decision Tree
- Logistic Regression
- Random Forest
- Support Vector Machine
- ANN (Artificial Neural Network)

- Linear Regression (Stepwise)
- Regularized Linear Regression
- Regression Tree
- Random Forest Regression
- Support Vector Regression
- ANN (Artificial Neural Network)




지렁이 뇌
심장
입
복부신경


쥐
고양이
개
양
Figure by Robert Vink, University of South Australia
돼지
마모셋 원숭이
붉은털 원숭이
사람
0 1 2 3 4 5 (cm)

“

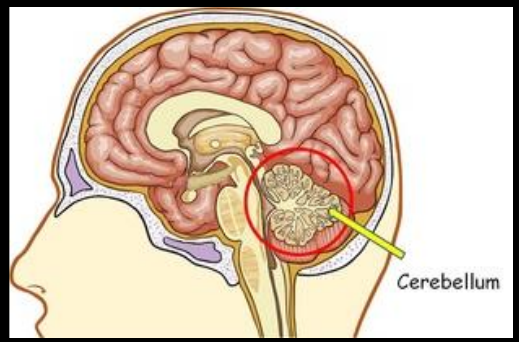
이 안에서 도대체
무슨 일이 일어날까?

신경해부학자

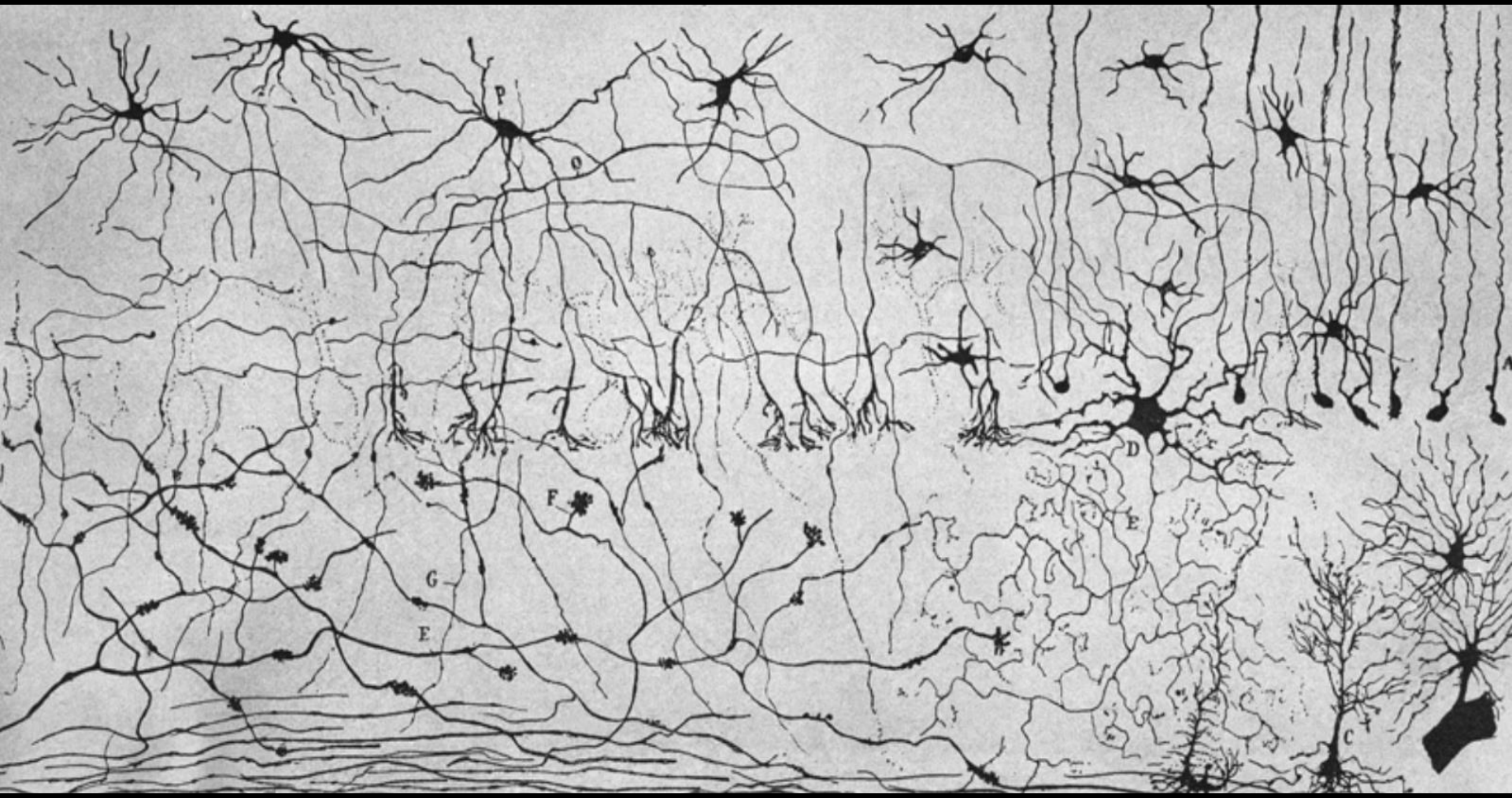
Neuroanatomist

산티아고 라모 니 카할, 스페인

세레벨럼(소뇌) : 척추동물 두개골 뒤쪽에 있는
뇌의 일부분, 근육 운동을 조절



새 뇌에 있는 신경세포(뉴런)들



Ramón y Cajal's drawing of the neurons in a bird's cerebellum – a part of the brain.

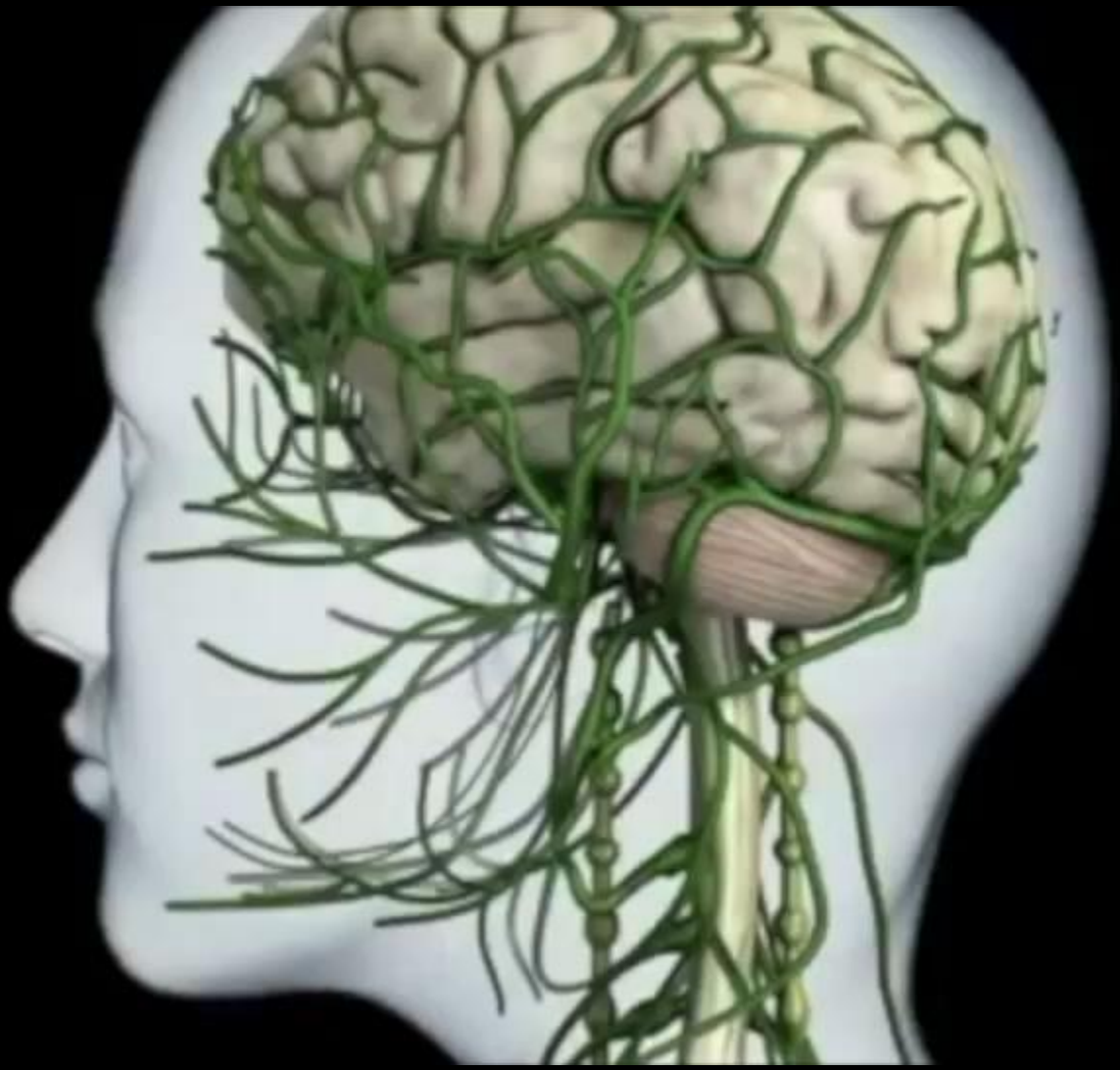
사람의 뇌


1
6
3
2
7
1
5

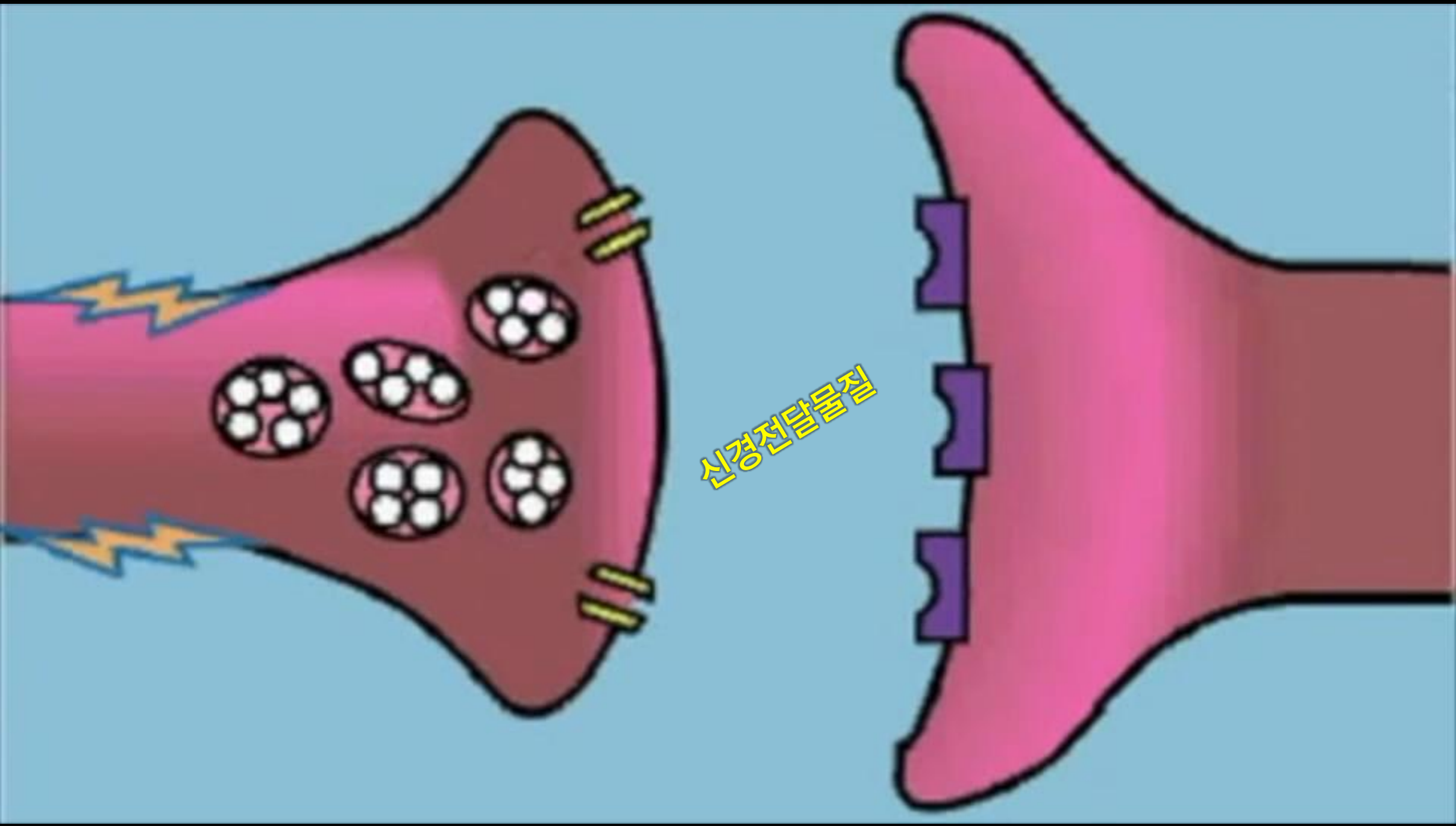
천억 개가 넘는 신경세포들

우주에 있는 별의 수
보다 많은...

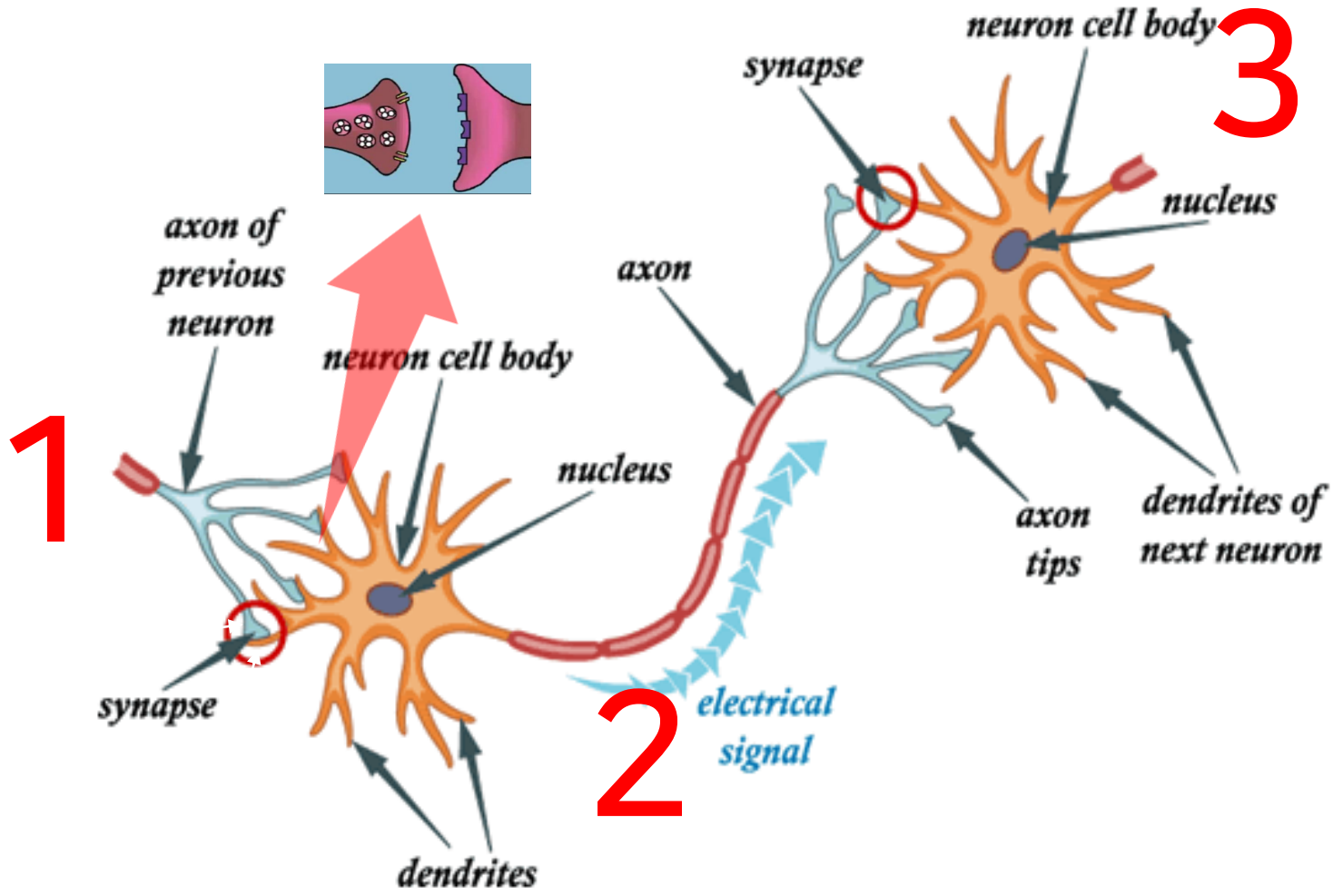

연결부분
시냅스!!

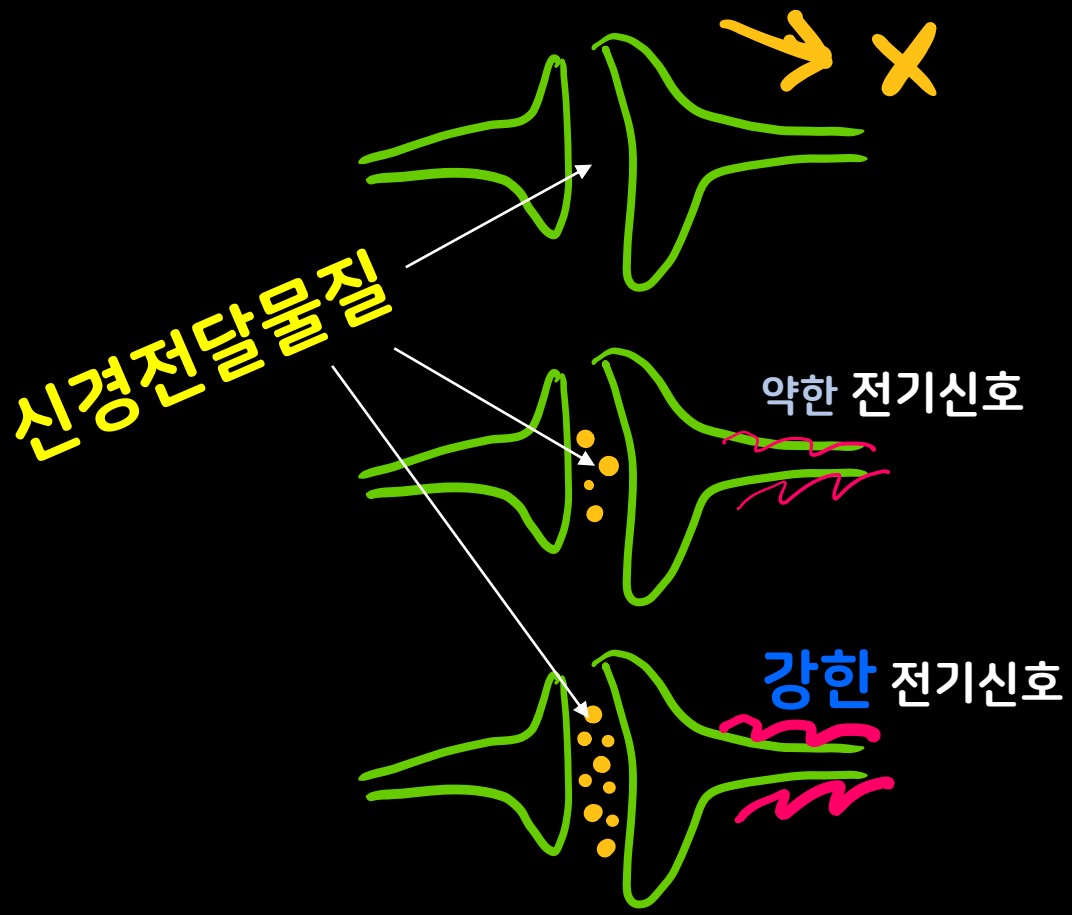


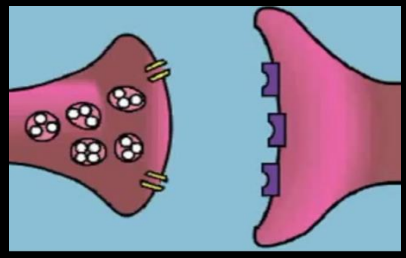
시냅스에서 일어나는 일



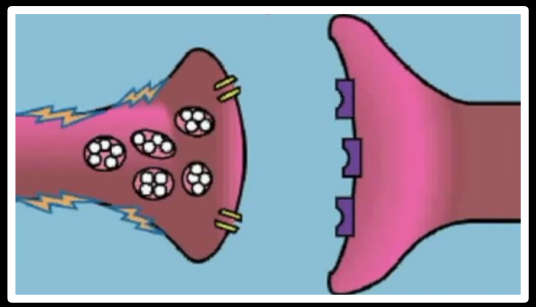
신경세포 연결

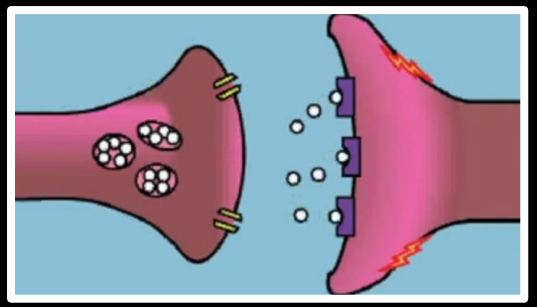

1
axon of previous neuron
neuron cell body
nucleus
synapse
dendrites
2
electrical signal
axon
3
synapse
neuron cell body
nucleus
axon tips
dendrites of next neuron


신경전달물질
약한 전기신호
강한 전기신호



우리가 살아가는 동안...

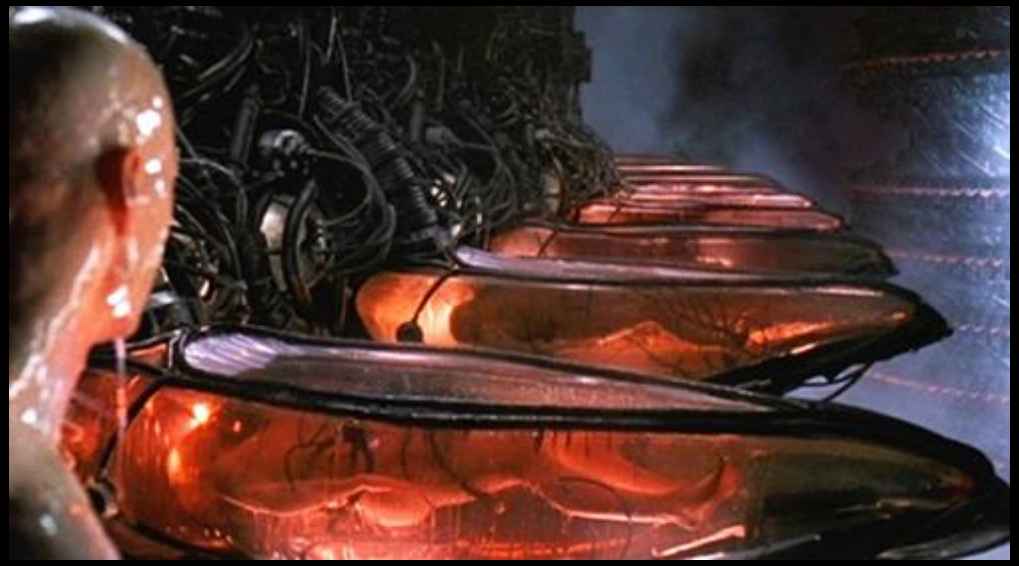




우리의 행동, 기억,
그리고 삶의 모든 것

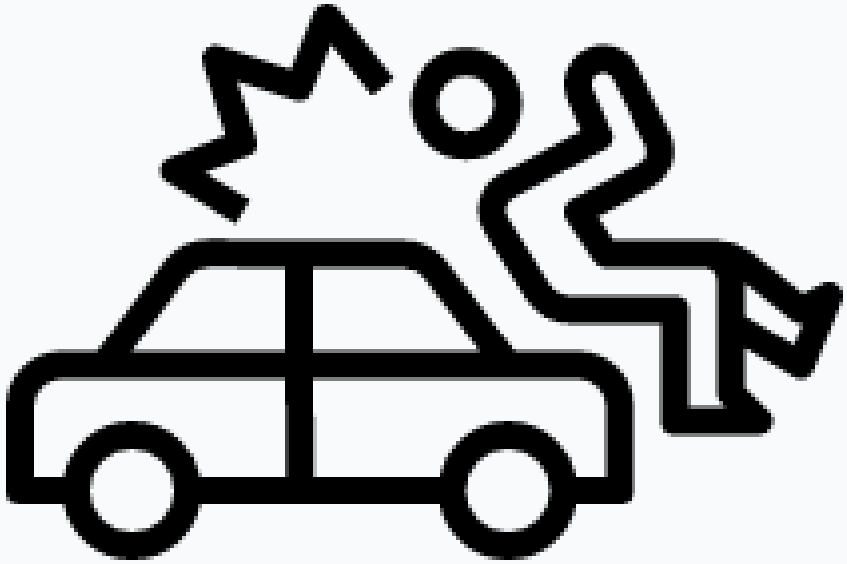
뇌 안의
수많은 전기신호


키아누 리브스
로렌스 피시번
당신을 전율케 한 '가상현실'의 '혁명'
이제 '현실'이 되어 돌아오다!
매트릭스
MATRIX
9월 22일 대개봉!

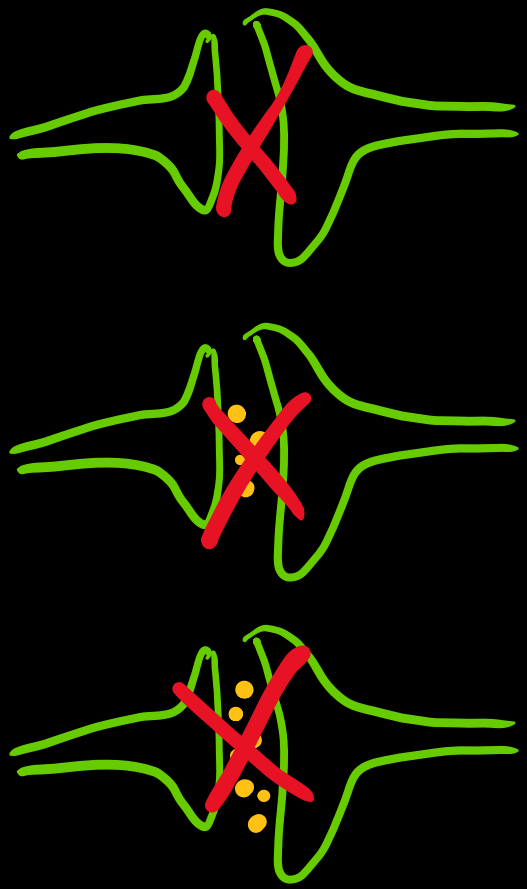


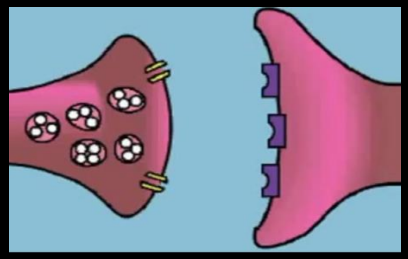
걷도록 하는 전기신호들
뛰도록 하는 전기신호들
엄마 얼굴을 떠올리는 전기신호들

신경전달 물질이
어떻게 세팅되어 있느냐에 따라
다르게 발생하는 전기신호들



교통사고로 뇌가 다치면?
혹은 시냅스에 문제가 생기면?





뇌 안 **전기신호**

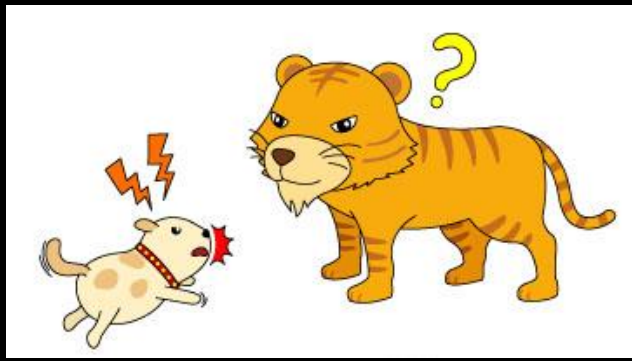
흐름에 문제가 발생!

반신불수, 마비

움직이지도 못하고
기억도 못하는

치매(알츠하이머)

걷지도,
말하지도,
범 무서운 줄 모르고

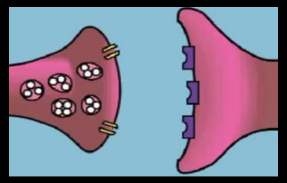


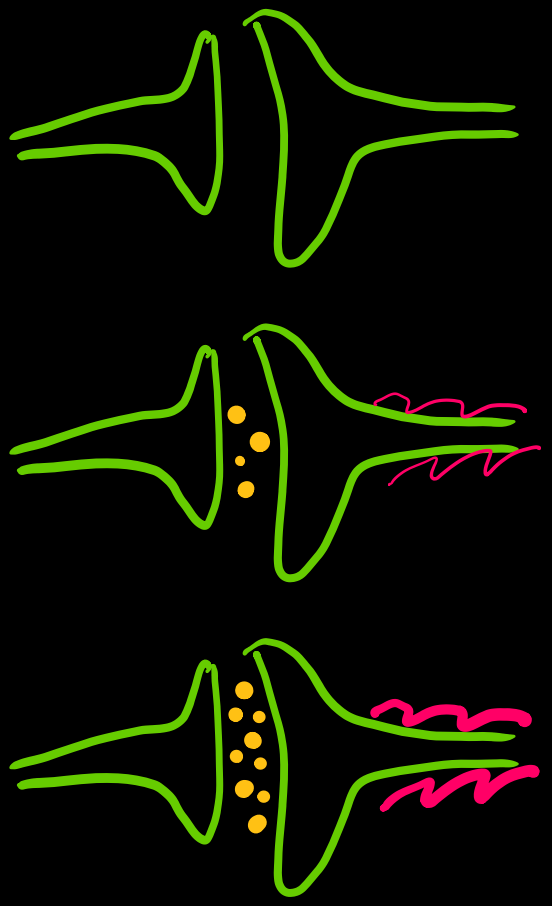
“

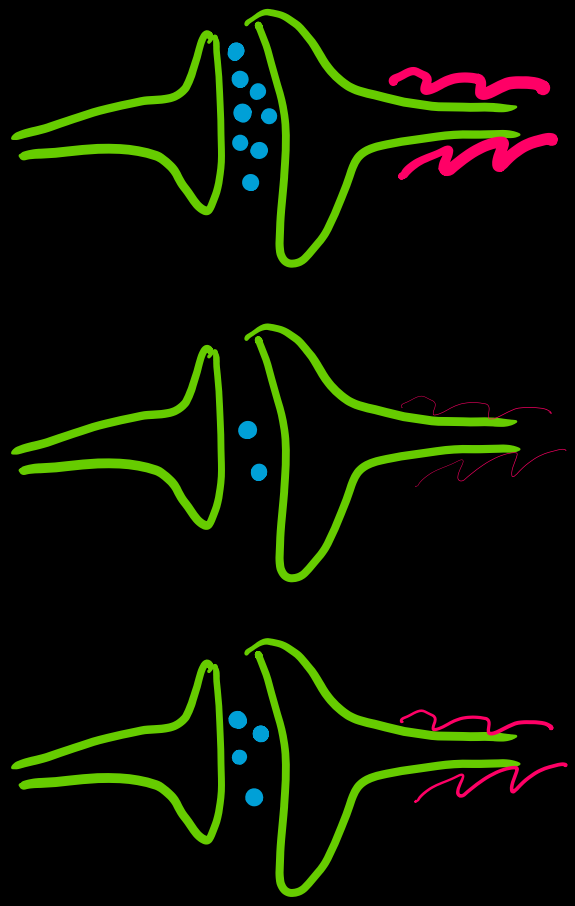
왜냐하면, 뇌의 시냅스가 제대로 설정되어 있지 않아서

시냅스의 신경전달 물질의 양이 제대로 설정되어 있지 않아서

경험할 때마다
신경세포 시냅스 연결강도가
자동으로 조정





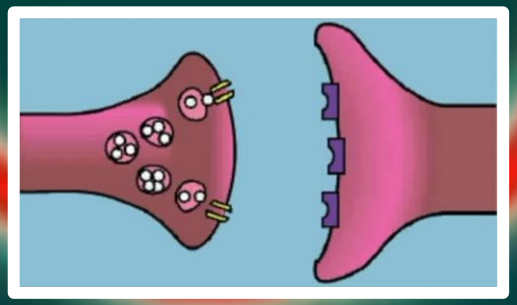


아기일때 시냅스 모습

좀 더 자랐을 때 시냅스 모습

학습 (Learning)

조정



Error/Stress/Cost/**Loss function**