



## The complexity of the human brain

- Quantity of neurons in the human brain? approx. 10<sup>11</sup> (100 billion)
- If put all neuronal extension of one brain together, how far would you reach?

approx. 500.000 km (Earth-Moon: 380.000 km)

- How many synapses are in one brain? approx. 10<sup>14</sup> synapses
- · For how long would you count, if you would count one synapse per second in one brain?
  - approx. 3 million years
- What is the size of a synapse? approx. 0.3 µm = 300 nm (wavelength of the visible light)
- How big would be your brain if a synapse would be 1 cm in size?
  - approx. 4 km long



- Abraham Lincoln
- 12.2.1809 15.4.1865
- "You can fool some of the people all of the time, and all of the people some of the . time, but you can not fool all of the people all of the time."



































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Genetic facto	rs associated	with AD			
<u>Gene</u> Familial early onset ge	enes	Age of onset			
APP	Chromosome 21	40-65 years			
Presenilin 1	Chromosome 14	17-60 years			
Presenilin 2	Chromosome 1	45-84 years			
Late onset genes (spo	onset genes (sporadic and senile familial AD)				
ApoE4	Chromosome 19	>50 years			
$\alpha$ 2-Macroglobulin	Chromosome 12	>50 years			
LRP1	Chromosome 12	>50 years			
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Chromosome 12

Chromosome 12

α2-Macroglobulin

LRP1





































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