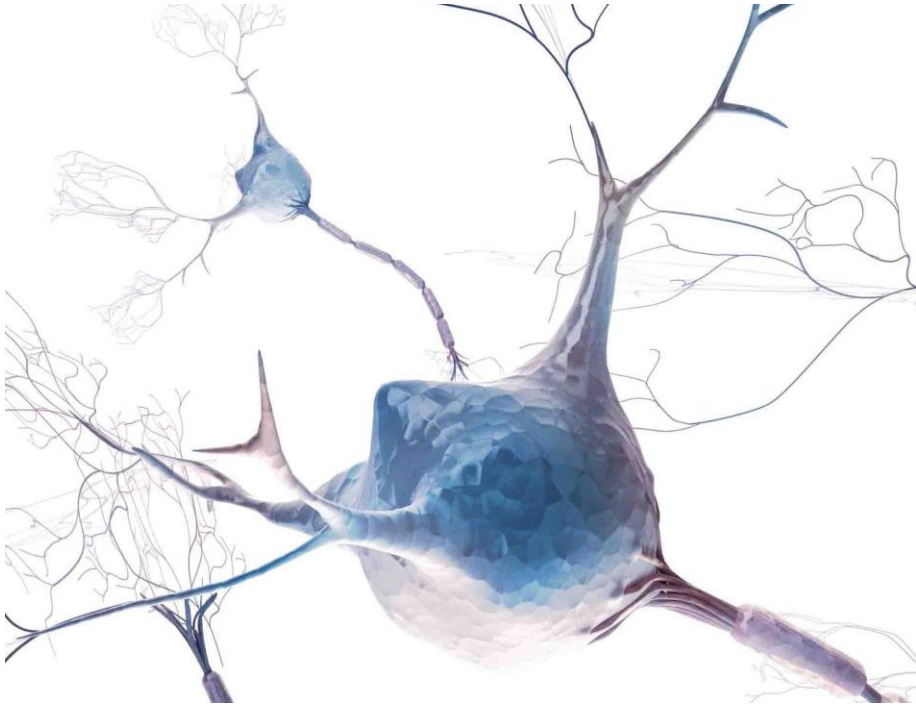
Hvilke medisinske behov har vi løst om 10 år?



Gry Fluge Vindedal, PhD

Medisinsk rådgiver, nevrologi

AbbVie

AGENDA

- Nevrologiens kompleksitet

- «The crisis» innen den farmasøytiske industrien

- Fremtidens muligheter

PRESENTASJON

- Om meg: MSc og PhD i neuroscience, henholdsvis fra NTNU og UiO
- Startet i mai 2015 som medisinsk rådgiver innen nevrologi i AbbVie

- Om AbbVie: nytt biofarmasøytisk selskap (01.01.2013) etter separasjon fra Abbott
- Fokus på å hjelpe pasienter med alvorlige og kroniske lidelser

OUR THERAPEUTIC AREAS

We discover and develop new drugs in therapeutic areas that we believe will make the most significant impact on the disease and its management.

IMMUNOLOGY

As leading experts in autoimmune diseases and therapies, AbbVie is focused on developing new medicines to address chronic progressive diseases in the field of immunology. Our programs focus on investigating both targeted oral therapies and biologics.

Areas of interest
- Rheumatoid arthritis
- Crohn's disease
- Psoriasis
- Osteoarthritis
- Lupus
- Celiac disease

LIVER DISEASE

Our antiviral program focuses on the development of treatments for Hepatitis C (HCV), a liver disease that affects more than 160 million people worldwide with approximately 3-4 million new cases of infection every year. Our research focus is on reduction of viral load and long term outcomes.

Areas of interest
- HCV
- Fibrosis

ONCOLOGY

Our research is committed to discovering and developing targeted therapies that work against the processes cancer cells need to survive. We are investigating both small and large molecule approaches, and our internal research efforts are balanced with external collaborations across industry, academia and healthcare authorities.

Areas of interest
- Solid tumors
- Hematologic malignancies

NEUROSCIENCE

Our innovative research focuses on developing therapies for neurodegenerative diseases by targeting mechanisms that block neurodegeneration and promote neuroprotection and regeneration. We are interested in highly validated targets and biomarkers.

Areas of interest
- Alzheimer's disease
- Multiple sclerosis
- Parkinson's disease

RENAL

Increasing rates of diabetes, obesity and hypertension have led to a growing prevalence of kidney disease. We are focused on mechanisms and biomarkers associated with rapid progression of diabetic nephropathy.

Areas of interest
- Chronic kidney disease
- Diabetic nephropathy
- Fibrosis

ADDITIONAL FOCUS AREAS

- Cystic fibrosis
- Ophthalmology
- Platforms & technologies

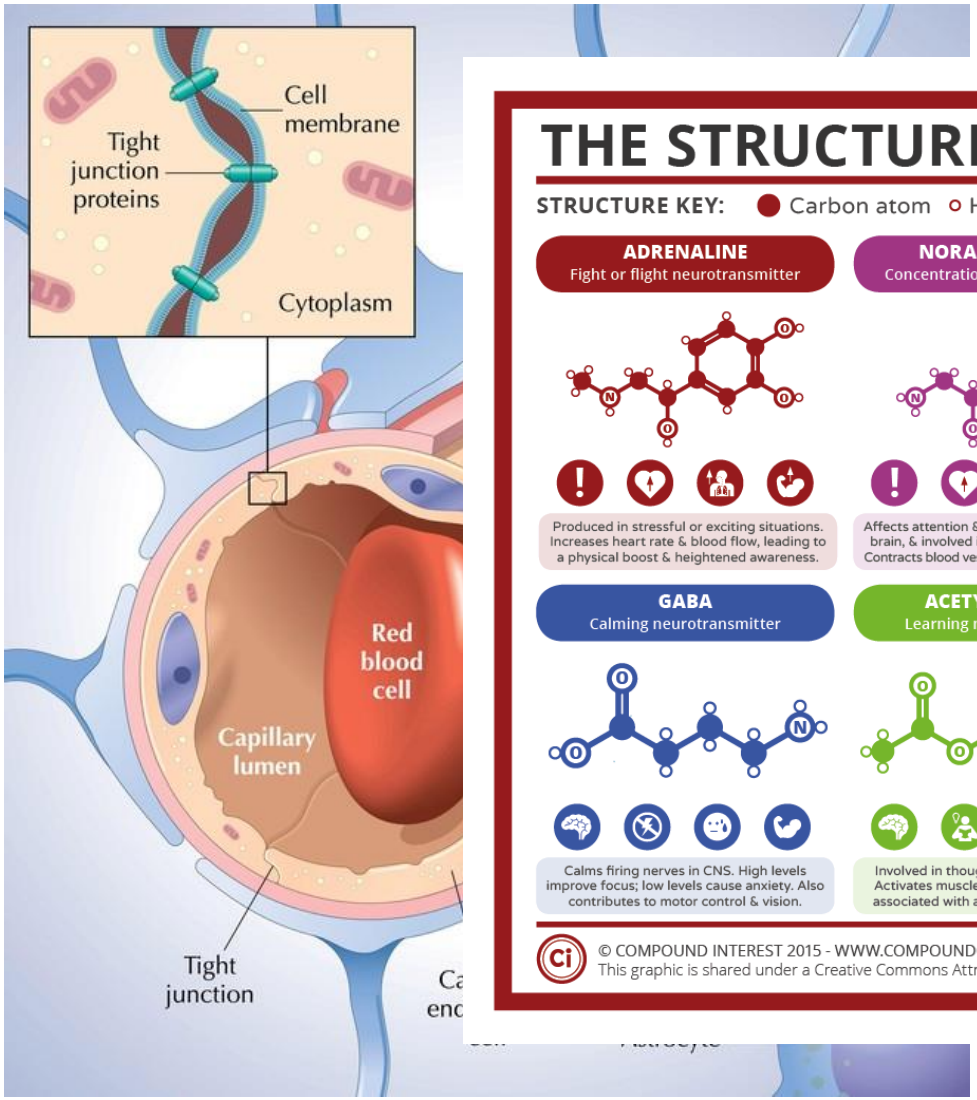
abbvie

Nevrologiens kompleksitet

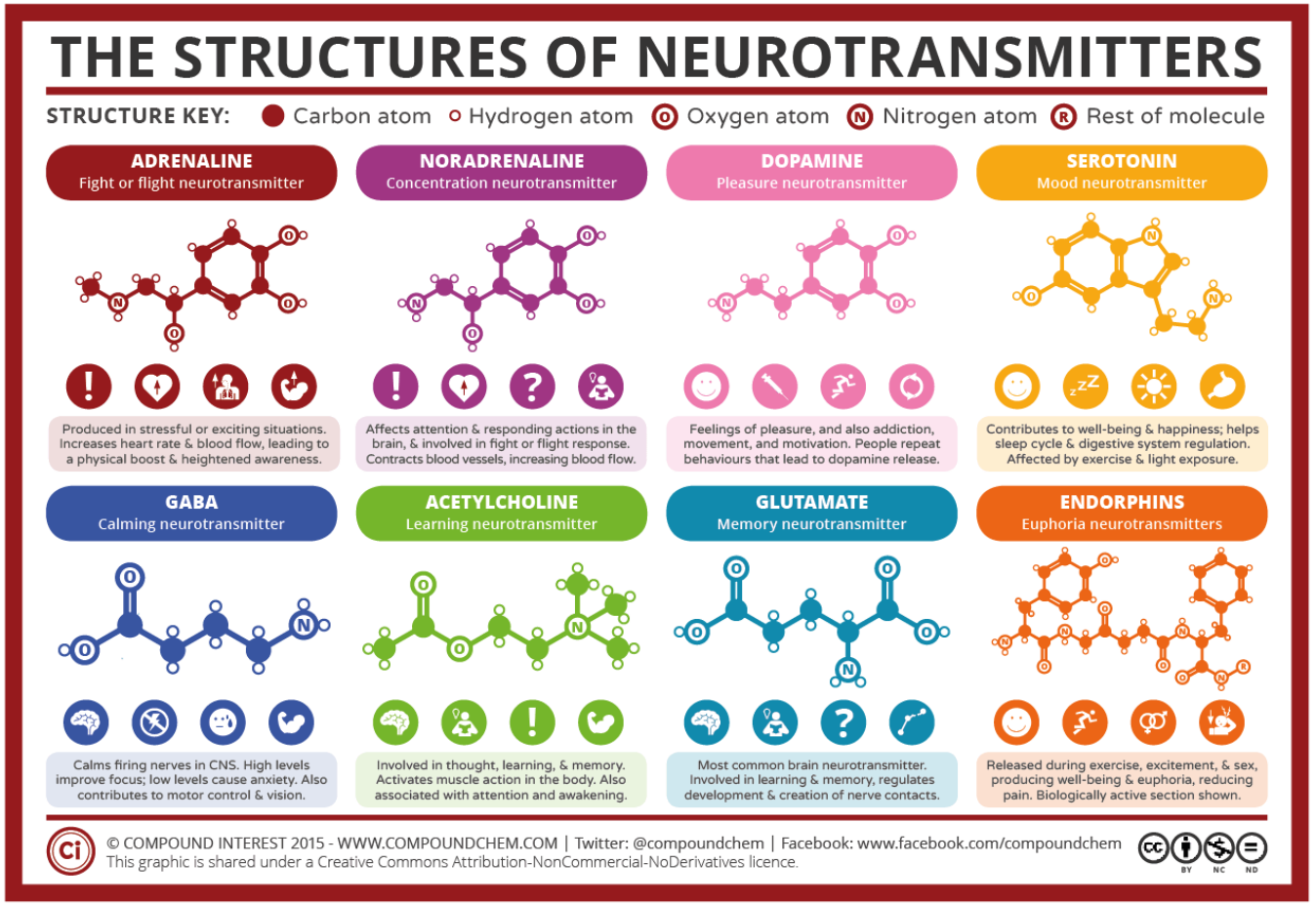
HJERNEN´S TIDSALDER

http://www.wired.com/wp-content/uploads/2014/07/brain1.jpg

UTFORDRINGER

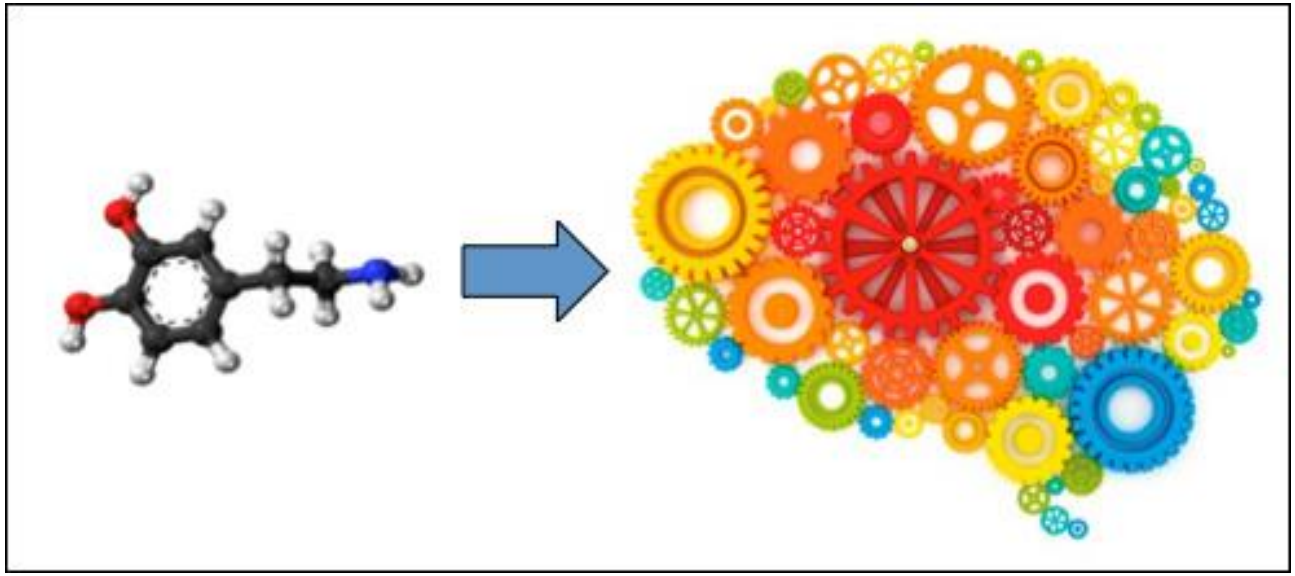


Netter´s Atlas of Human Physiology, Elsevier 2015



http://www.compoundchem.com/wp-content/uploads/2015/07/Chemical-Structures-of-Neurotransmitters-2015.png

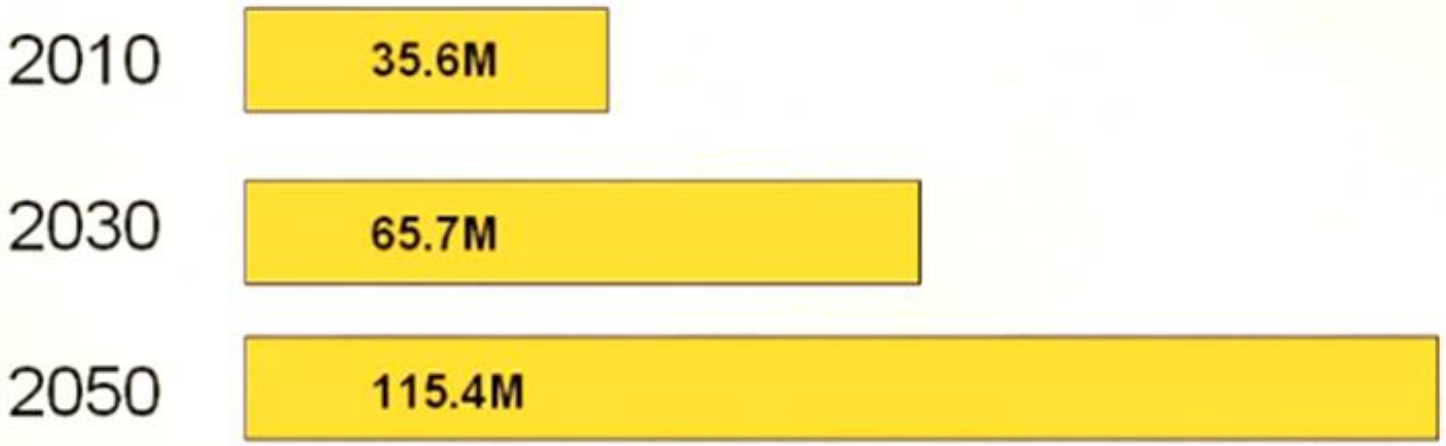
NEVROLOGISKE SYKDOMMER = MULTI-FAKTORIELLE SYKDOMMER



ELDREBØLGEN

Aging US population

Dementia world wide



More than 10% of those >65 yrs have NDG

Number, Hobbs, Frank and Nicole Stoops, U.S. Census Bureau, Census 2000 Special Reports, Series CENSR-4, Demographic Trends in the 20th Century.

World Alzheimer Report 2010

HISTORIEN OM ALZHEIMER´S SYKDOM

1906: Alzheimer's sykdom blir beskrevet for første gang. Symptomer; hukommelsestap, paranoia og psykologiske forandringer. Ved autopsy er det signifikant atrofi av cerebralt volum og nerveceller.

1931: Elektronmikroskopet gjør det mulig å studere hjernens celler i større detalj.

1968: Utvikling av den første kognitive skalaen.

1974: Kongressen etablerer National Institute of Aging (NIA).

1976: Alzheimer´s sykdom er anerkjent som den vanligste formen for demens.

1983: Første National Alzheimer´s month (November) for å øke bevisstheten rundt sykdommen.

1984: Beta-amyloid identifiseres.

1986: Tau proteinet identifiseres.

1987: Den første Alzheimer´s drug trial initieres: The Alzheimer´s Association assisteres NIA og Warner-Lambert Pharmaceutical Company (nå kjent som Phizer) i launch og rekruttering av deltakere i en klinisk studie med tacrine; det første medikamentet som var spesifikt designet for Alzheimer´s symptomer.

1993: The Food & Drug Administration (FDA) godkjenner den første Alzheimer´s medisinen, Cognex, for hukommelsesproblemer. I dag er det totalt 5 godkjente medisiner på markedet for behandling av Alzheimer´s sykdom.

1994: Tidligere President of the United States Ronald Reagan annonserer sin Alzheimer´s diagnose.

1995: Den første transgene Alzheimer´s muse-modellen ble generert.

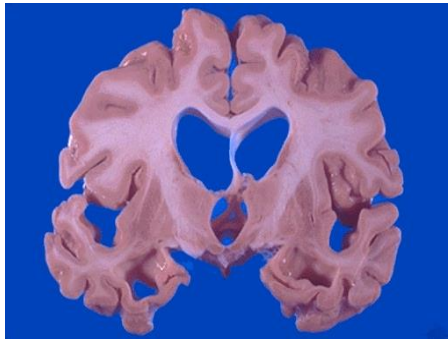
1999: Alzheimer´s vaksine suksessfull i mus.

2003: NIA starter opp en National Alzheimer's Disease Genetic Study, som ønsker å identifisere genetiske risikogener for Alzheimer's sykdom.

2010: Alzheimer's fastslått som the sjette ledende dødsårsak i USA.

2011: President Barack Obama signerer the National Alzheimer's Project Act, et nasjonalt rammeverk for støtte til og funding av Alzheimer´s-forskning.

2013: The G8 Dementia Summit lanserer et internasjonalt initiativ mot Alzheimer´s med mål om å finne en kur innen 2025.

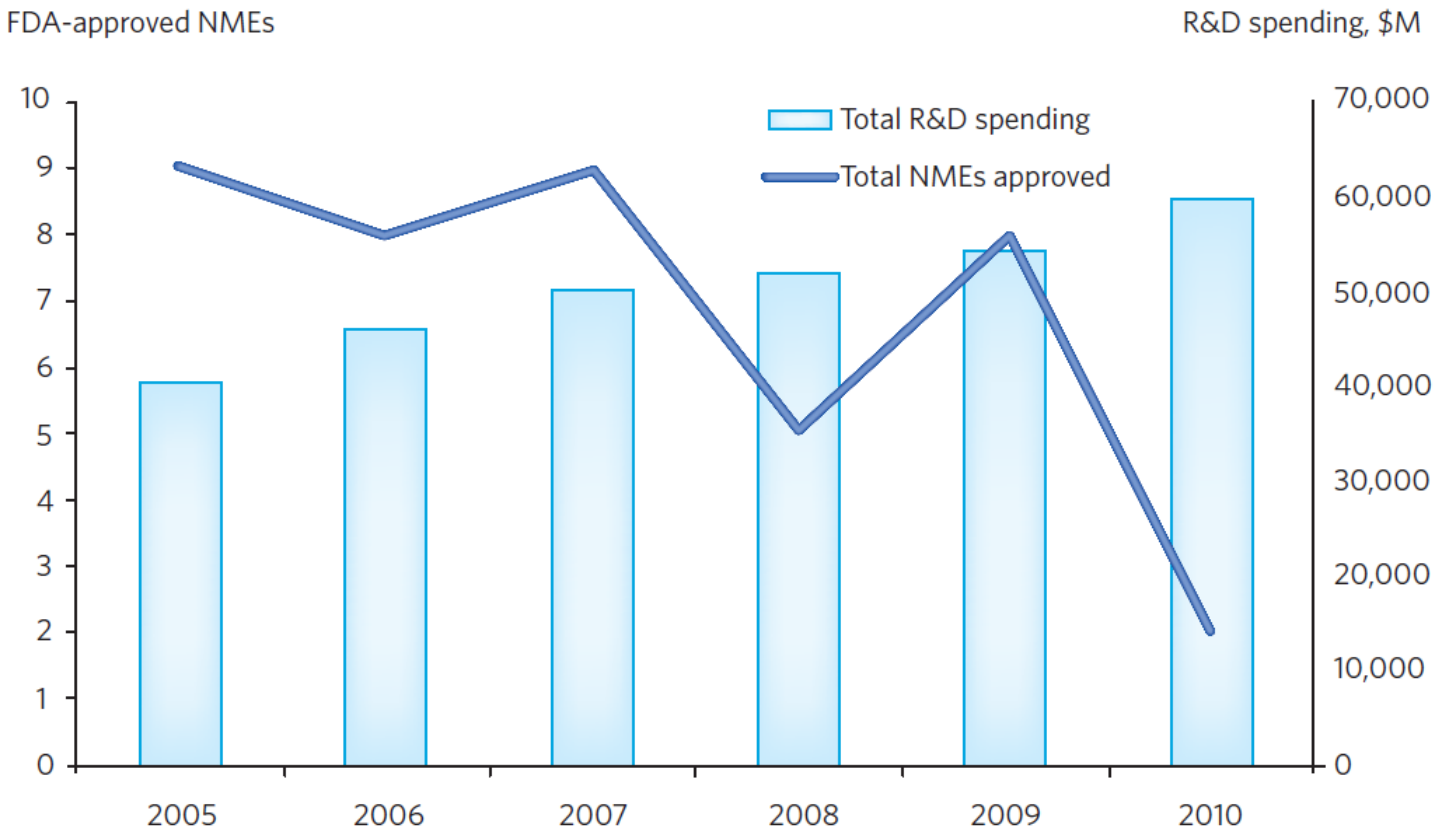


Etter mer enn 100 år har vi ingen årsak, ingen kur og ingen god symptomatisk behandling…

abbvie

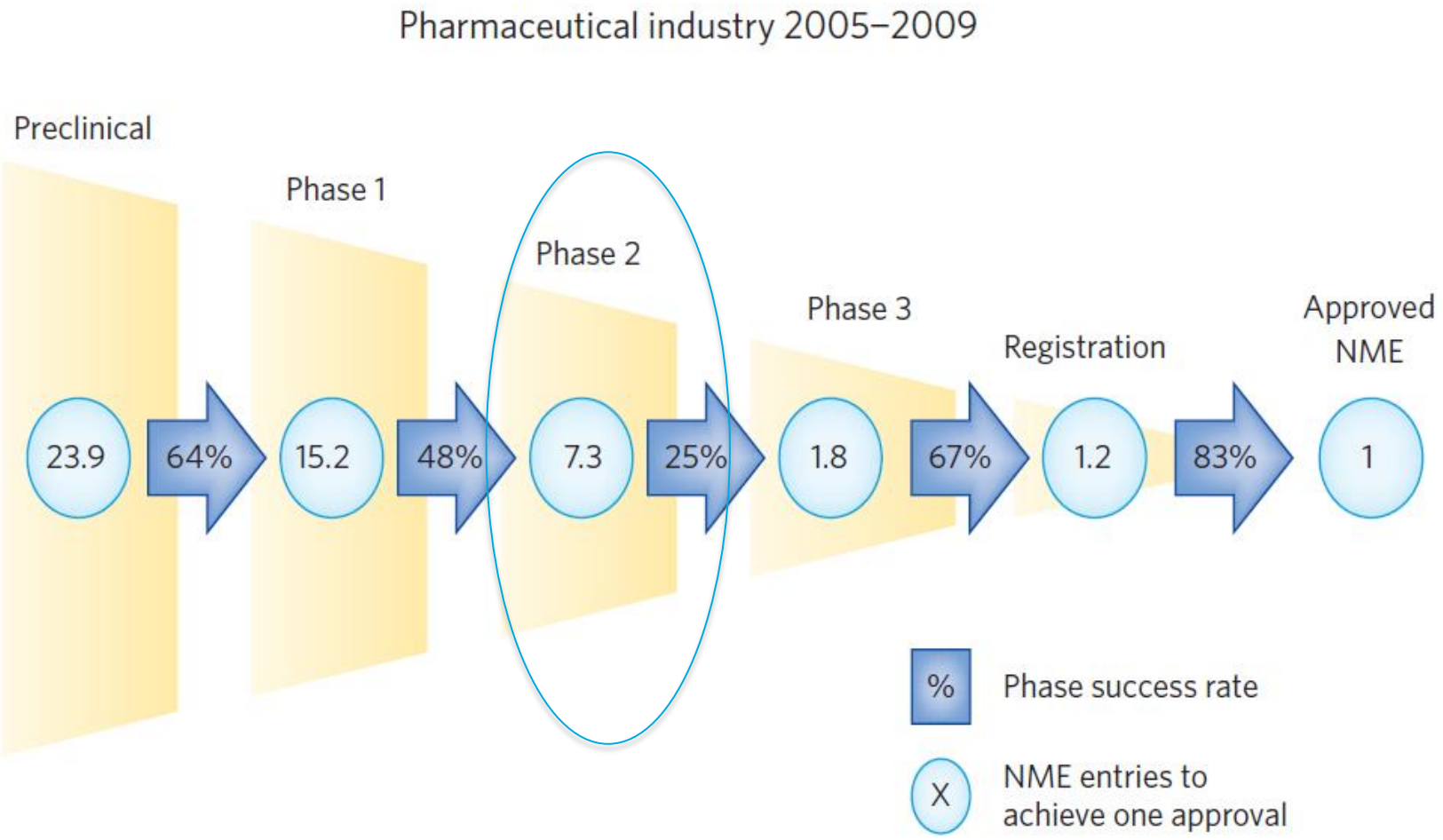
The crisis

Big pharma produktivitet 2005-2010



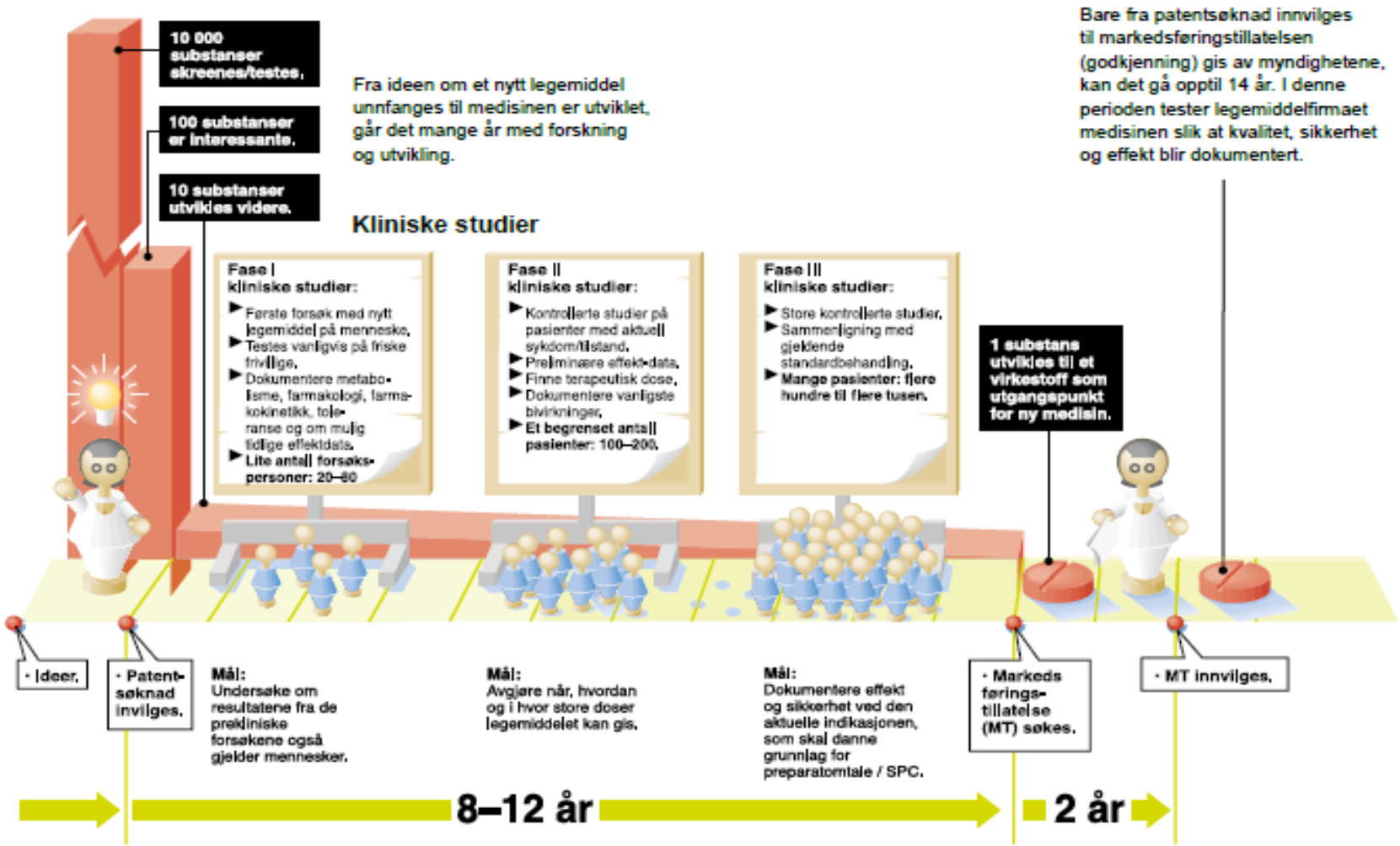
Mark E. Bunnage, Nature Chemical Biology, Vol 7, June 2011, 335-339

NME suksess-rate fase per fase

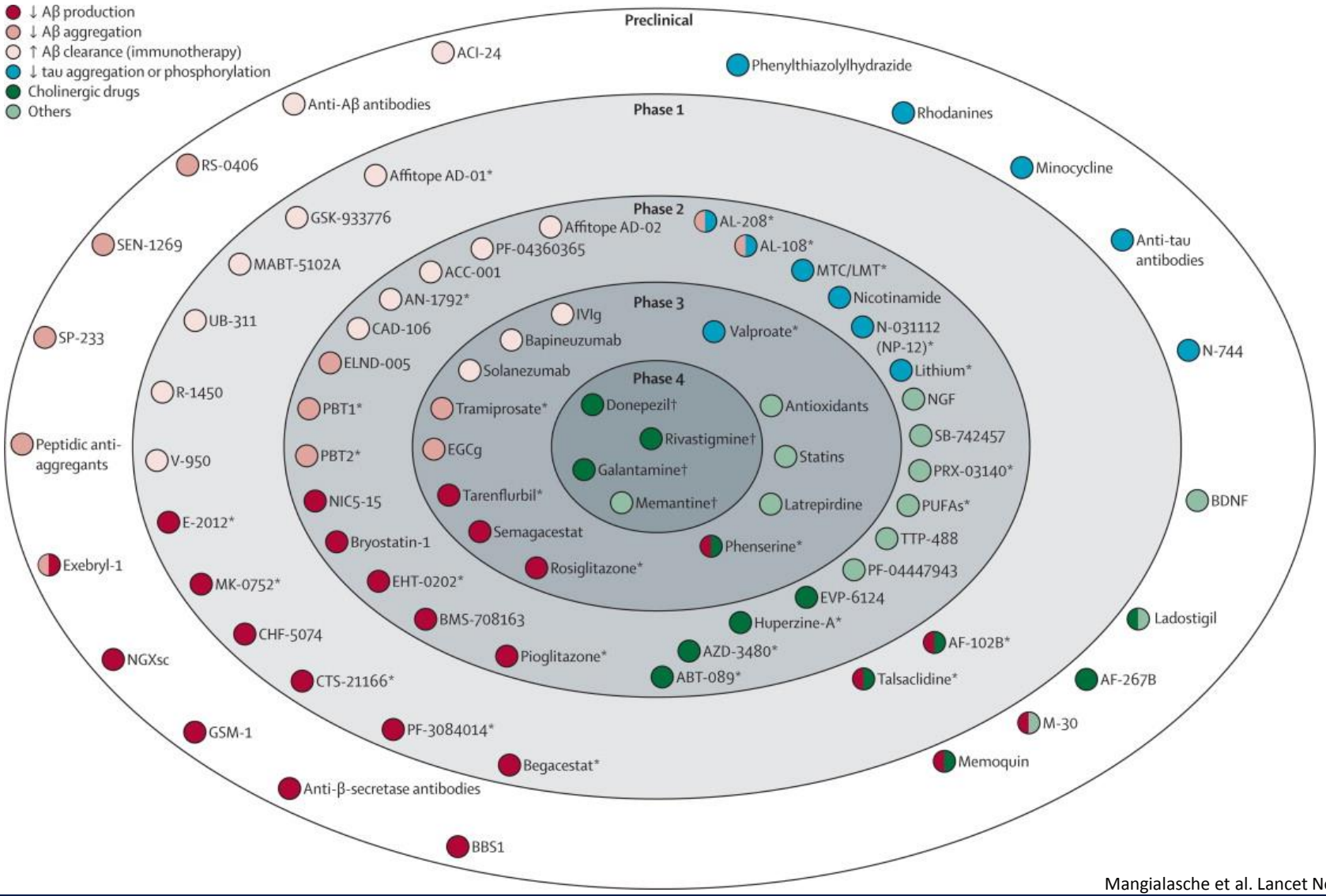


Mark E. Bunnage, Nature Chemical Biology, Vol 7, June 2011, 335-339

Legemidlenes fødsel

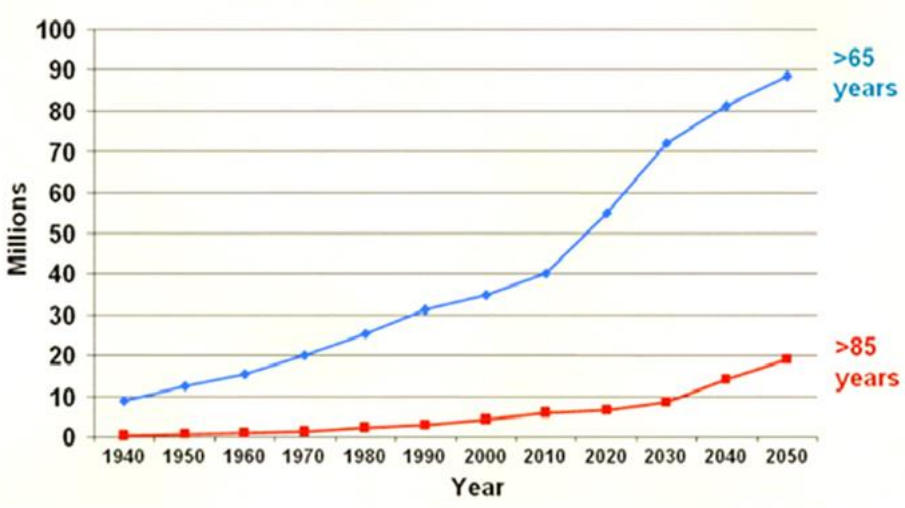


LMI´s FoU rapport 2014



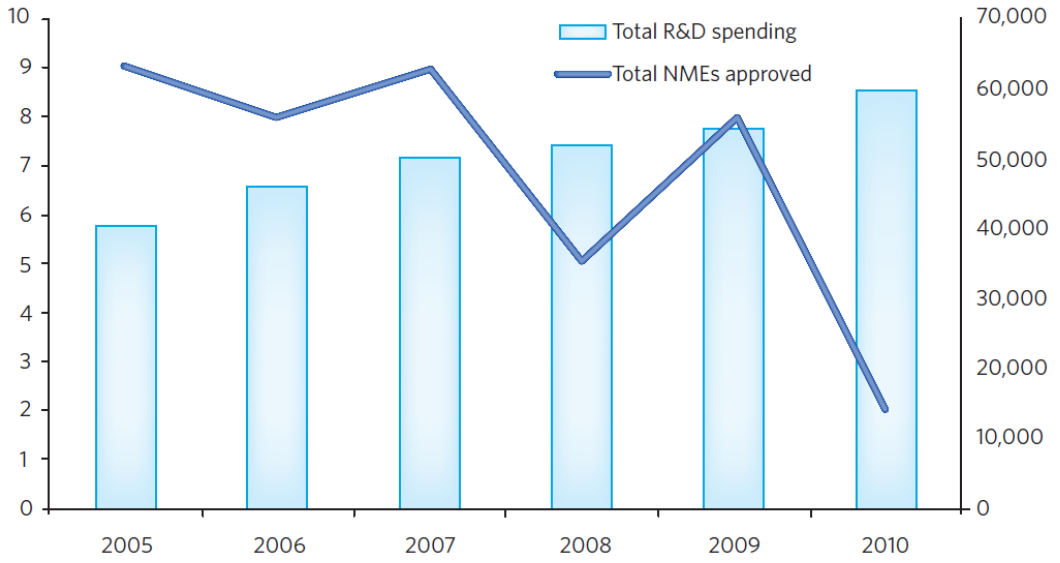
Mangialasche et al. Lancet Neurol 2010

THE CRISIS



FDA-approved NMEs

R&D spending, $M



*«På kinesisk består ordet krise av to tegn. Det ene står for fare og det andre for **muligheter**»* John F. Kennedy

abbvie

Fremtidens muligheter

BRIDGING THE GAP BETWEEN SCIENCE AND PHARMA

https://upload.wikimedia.org/wikipedia/commons/c/ca/0802_DV_view_from_DantePeak.jpg

BRIDGING THE GAP BETWEEN SCIENCE AND PHARMA

Human genome project

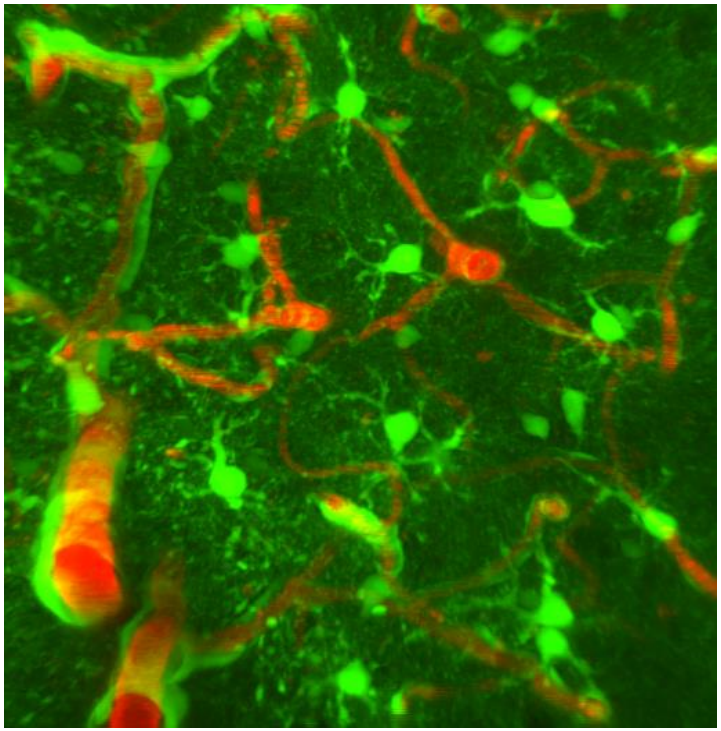
Brain **R**esearch through **A**dvancing **I**nnovative **N**eurotechnologies Initiative (BRAIN)

Digibrain

Centre for **I**ntegrative **N**euro**pla**sticity **(CINPLA)**

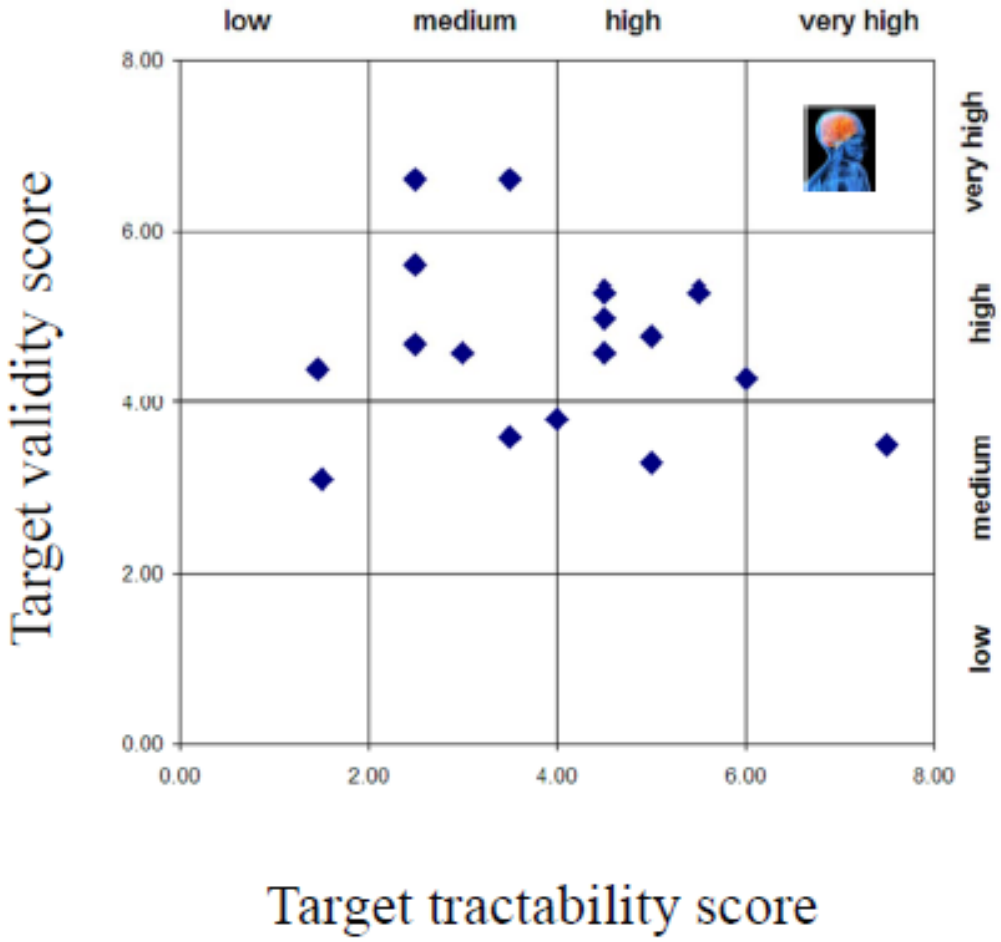
To-foton laser skanning mikroskopi

Nanoscience



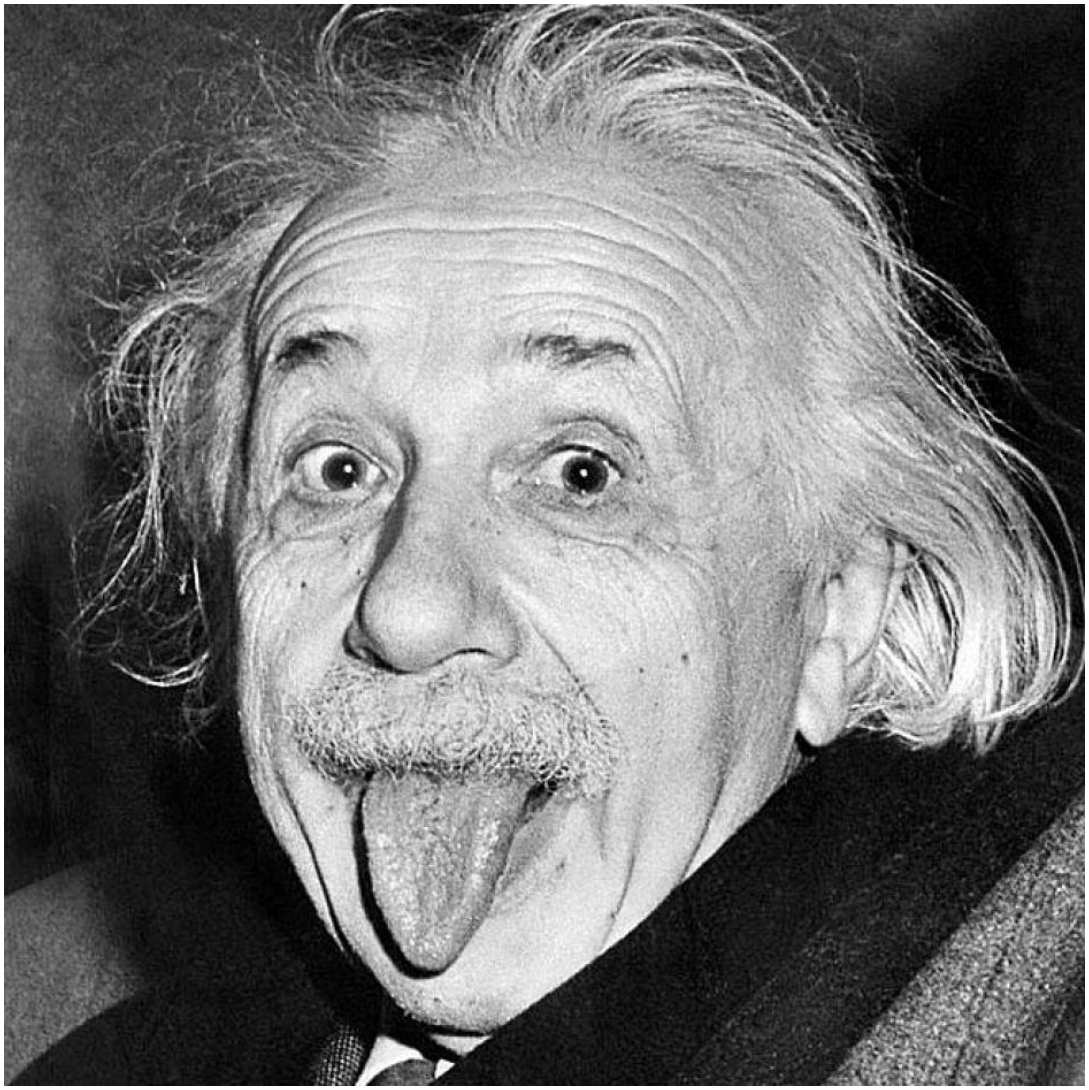
To-foton laser skanning mikroskopi bilde av hjerneceller og hjernens blodårer, G.F. Vindedal 2014

IMPROVING TARGET SELECTION



Courtesy of G.C. Terstappen 2014

«Insanity is doing the same thing over and over again and expecting different results» Albert Einstein

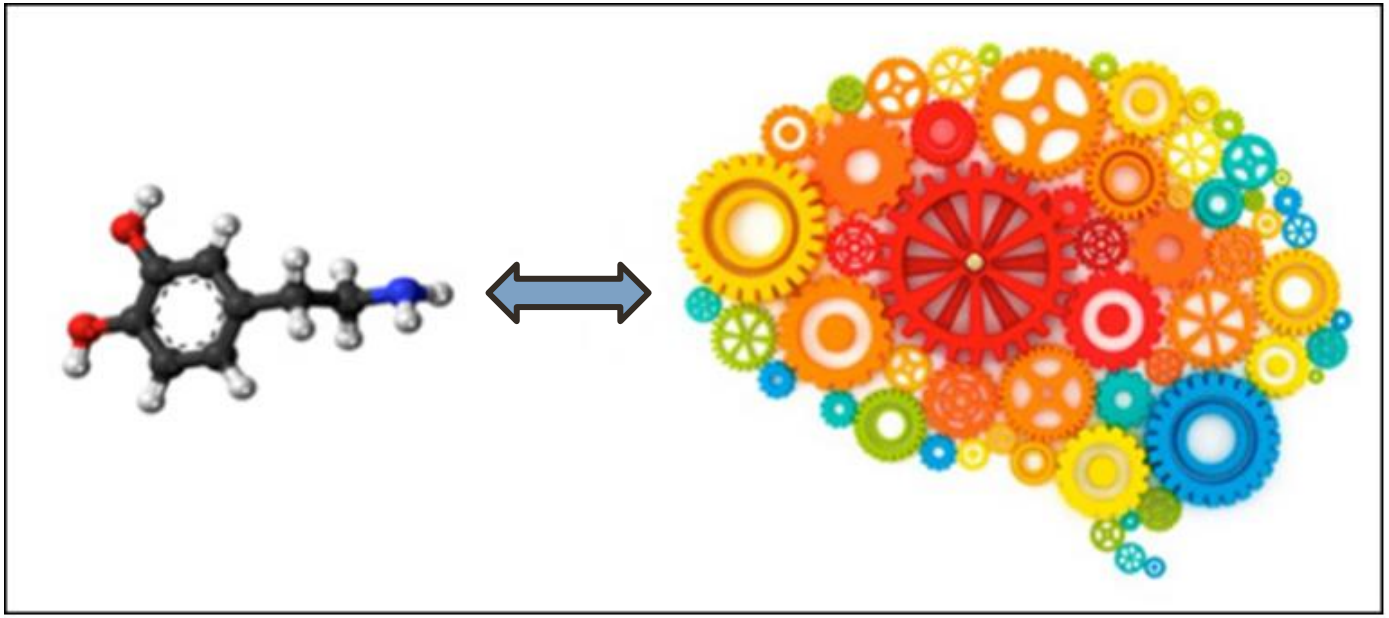


TAKE HOME MESSAGE

- Nevrologiens komplekse biologi

- The crisis

- Fremtidens muligheter:
  - Generere «big data»
  - Velge de rette targets
  - Dra nytte av teknologisk utvikling og nyvinning
  - Økt samarbeid mellom akademiske miljøer, bioteknologi og farmasøytisk industri




Takk for oppmerksomheten