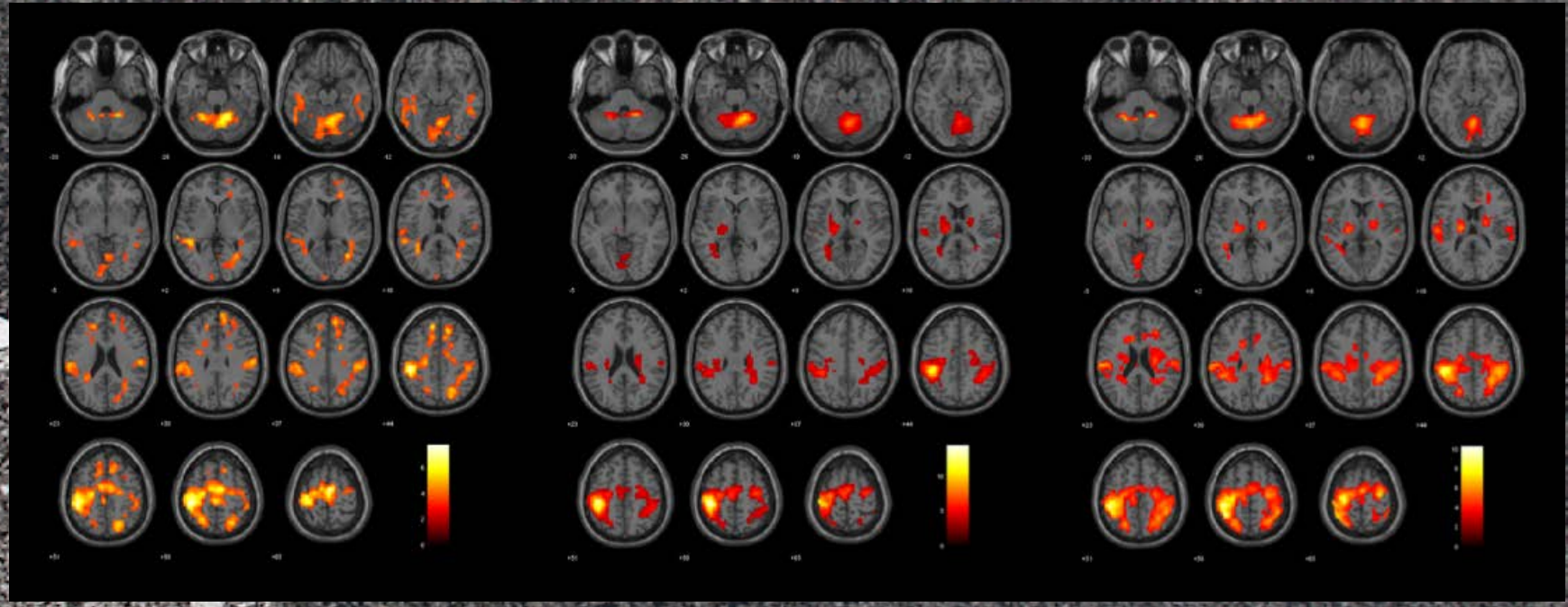
Znanost na cesti



5. oktober 2016 ob 19h, Kavarna Union

Bolezni možganov: izziv za družbo in znanost

doc. dr. Blaž Koritnik, UKC
Renata Dacinger, TV Slovenija

SATENA

Institut "Jožef Stefan" Ljubljana, Slovenija

Univerza v Ljubljani
Fakulteta za matematiko in fiziko

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http://thefadingsymphony.com/

Bolezni možganov

Tretjina Slovencev trpi zaradi bolezni možganov.

Skupni stroški možganskih bolezni v Sloveniji so za leto 2010 ocenjeni na 2,4 milijarde € (7 % bruto domačega proizvoda).

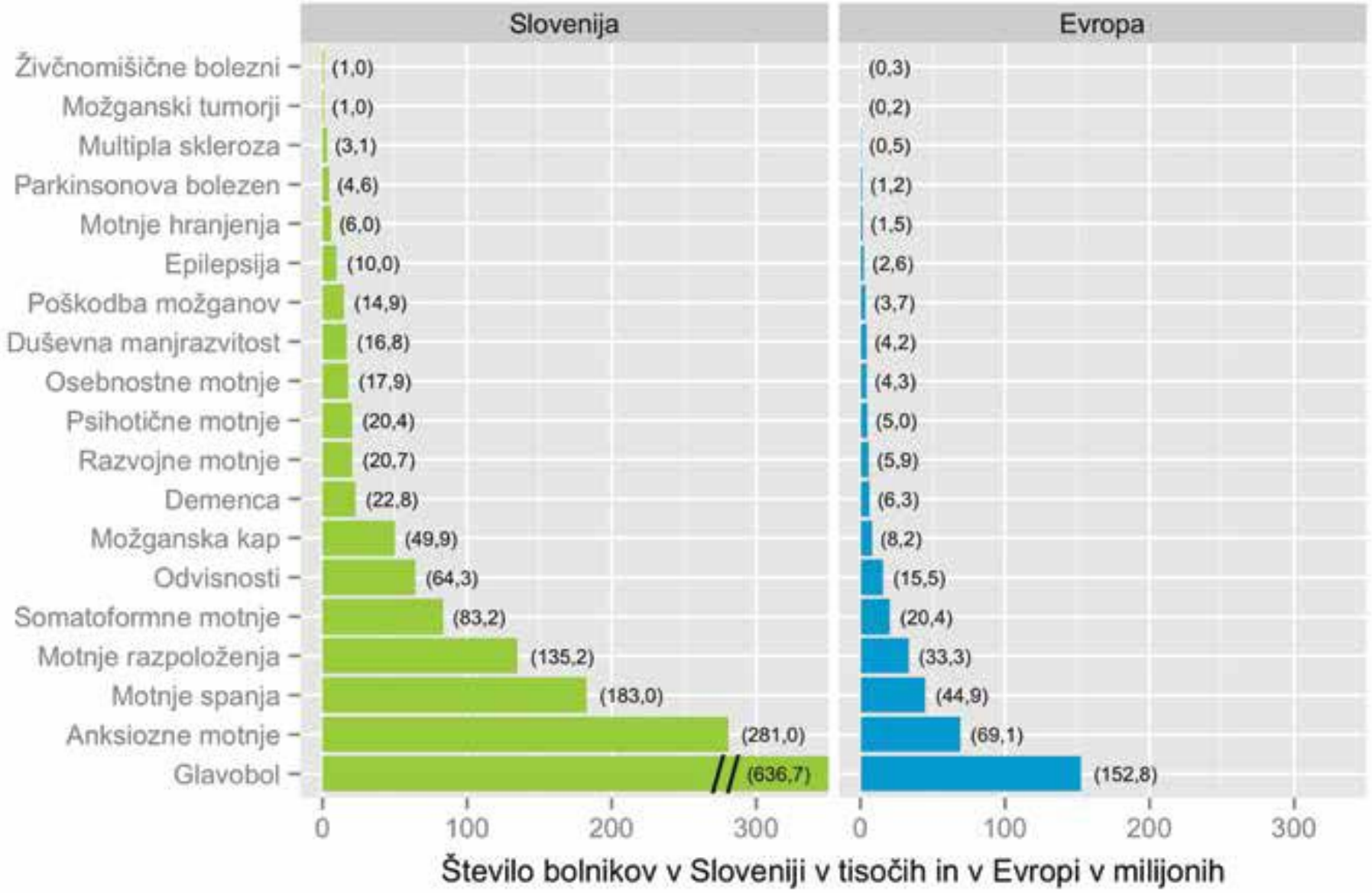
Neposredni zdravstveni stroški za možganske bolezni predstavljajo 32 % vseh neposrednih zdravstvenih stroškov v Sloveniji.

V naslednjih 20 letih bo število bolnikov z možganskimi boleznimi predvidoma naraslo še za 20 %.

Stroški možganskih bolezni v Sloveniji v letu 2010

Cost of disorders of the brain in Slovenia in 2010

Jurij Bon,[1,2,8] Blaž Koritnik,[1,3,7] Mara Bresjanac,[4,7] Grega Repovš,[5,7] Peter Pregelj,[2] Bogdan Dobnik,[6] Zvezdan Pirtošek[1,8]


Slovenija
Evropa
Živčnomišične bolezni
Možganski tumorji
Multipla skleroza
Parkinsonova bolezen
Motnje hranjenja
Epilepsija
Poškodba možganov
Duševna manjrazvitost
Osebnostne motnje
Psihotične motnje
Razvojne motnje
Demenca
Možganska kap
Odvisnosti
Somatoformne motnje
Motnje razpoloženja
Motnje spanja
Anksiozne motnje
Glavobol
(1,0)
(1,0)
(3,1)
(4,6)
(6,0)
(10,0)
(14,9)
(16,8)
(17,9)
(20,4)
(20,7)
(22,8)
(49,9)
(64,3)
(83,2)
(135,2)
(183,0)
(281,0)
(636,7)
(0,3)
(0,2)
(0,5)
(1,2)
(1,5)
(2,6)
(3,7)
(4,2)
(4,3)
(5,0)
(5,9)
(6,3)
(8,2)
(15,5)
(20,4)
(33,3)
(44,9)
(69,1)
(152,8)
0
100
200
300
0
100
200
300
Število bolnikov v Sloveniji v tisočih in v Evropi v milijonih

Nevrodegenerativne bolezni

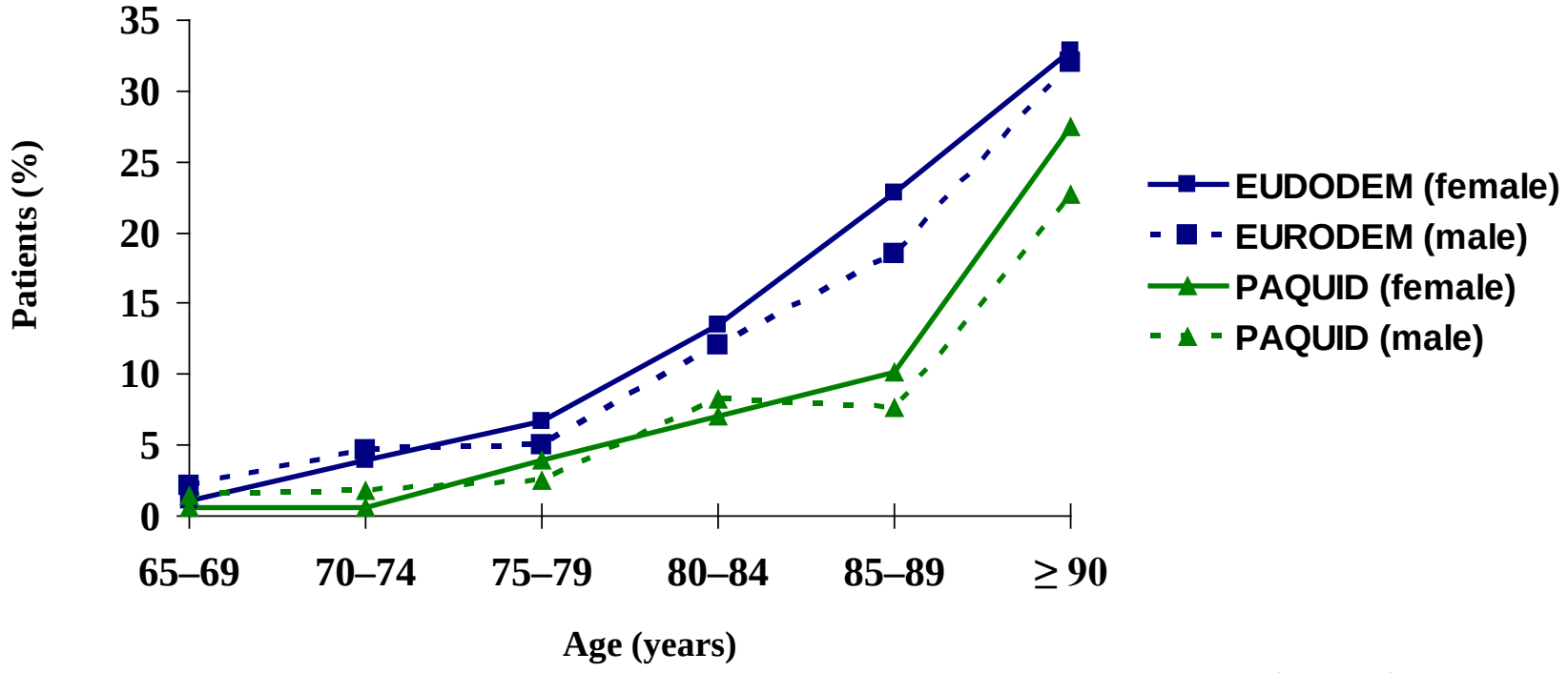
- prizadenejo nevrone v možganih
- neozdravljive, zelo onesposobijo bolnika
- napredujoča degeneracija ali / in smrt nevronov
- težave z motoriko in miselnimi procesi
- največje breme predstavljajo demence

Nevrodegenerativne bolezni

- Alzheimerjeva bolezen
- druge demence
- Parkinsonova bolezen
- parkinsonizmi
- prionske bolezni
- bolezen motoričnega nevrona (ALS)
- Huntingtonova bolezen

Prevalenca demence

- 65 let: 1–2 % ljudi
- 90 let: 30–50 % ljudi



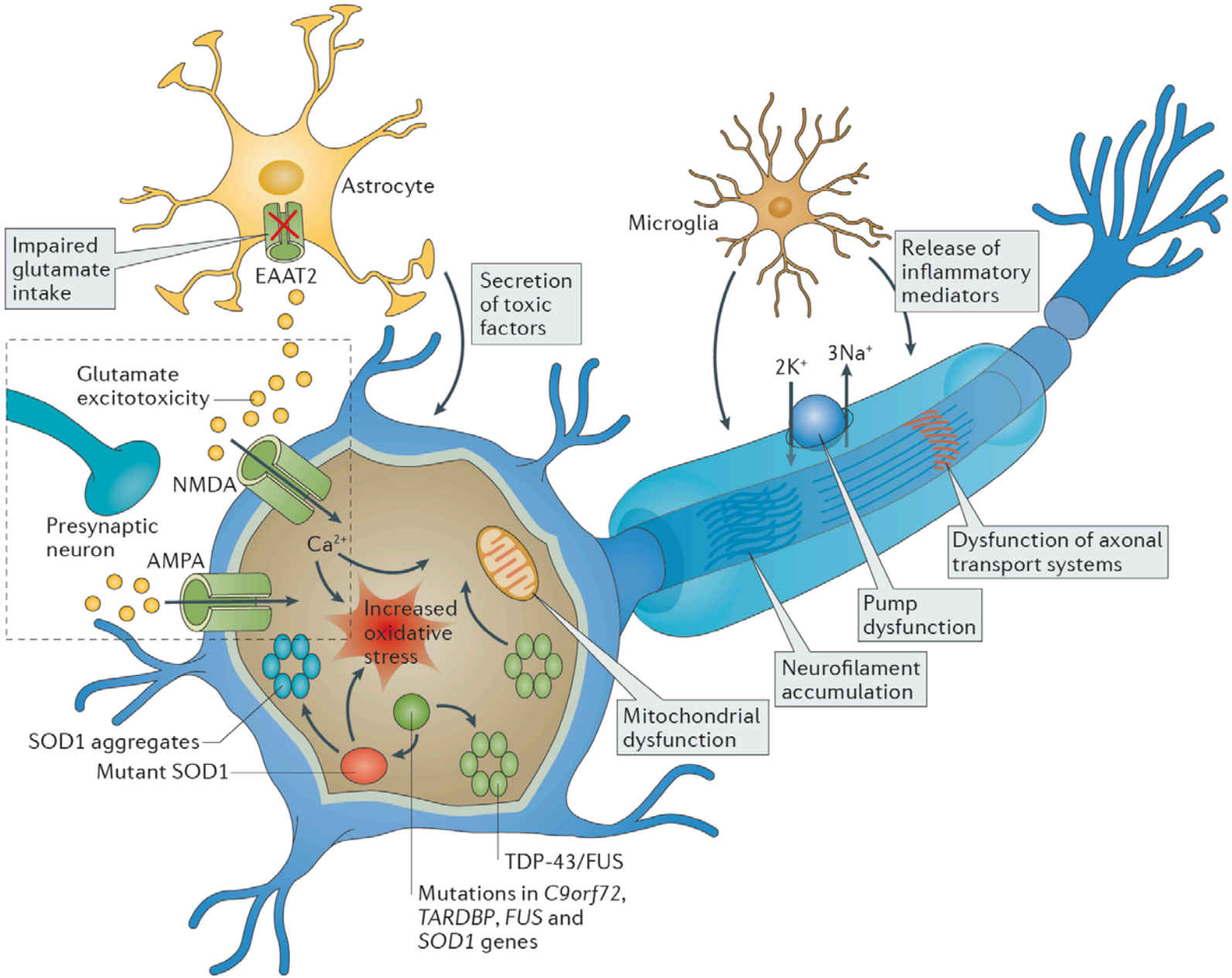
EURODEM: Launer LJ *et al.* Neurology 1999; 52: 78–84
PAQUID: Ramaroson H *et al*. Rev Neurol 2003; 159: 405–11

2,3-dimerkaptosukc. k.
AEOL 10150
azatioprin
bromokriptin
Celebrex
CNF
fizostigmin
gangliozidi
IGF-I
interferon alfa
koencim Q10
lamotrigin
metilkobalamin
NAALADase
Neurodex
oktakozanol
rastni hormon
riluzol
SR57746
tamoksifen
timusni faktor
TSH
vitamin E

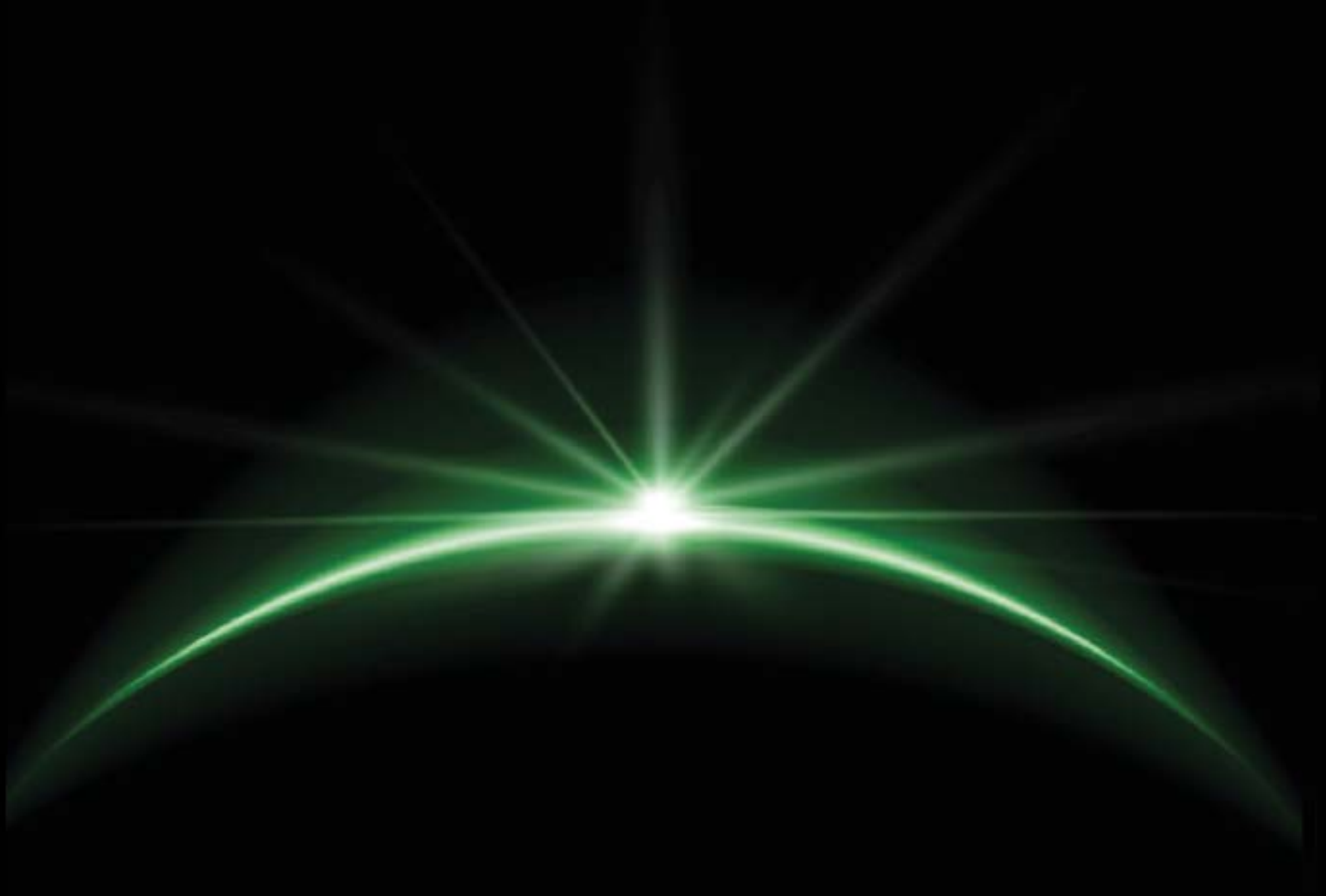
3,4-diaminopiridin
amantadin
baklofen
buspirone
ciklofosfamid
dekstrometorfan
ftalazinol
glikociamin in betain
imunoglobulini
interferon beta
kreatin
levamizol
minociklin
natrijev fenilbutirat
nimodipin
pimozid
razvejane aminokisline
ritonavir in hidroksiurea
superoksidna dismutaza 1
tetrahidroaminoakridin
topiramat
verapamil

acetilcistein
AVP-923-Neurodex
BDNF
ceftriakson
ciklosporin
ditiotreitol
gabapentin
gvanidin
indinavir
izoprinozin
ksaliproden
L-treonin
Myotrophin
Neotrofin
oksandrolon
procistein
ribonukleotidi
selegilin
talidomid
tiloron
transfer faktor
vitamin C

riluzol



Geevasinga et al. Pathophysiological and diagnostic implications of cortical dysfunction in ALS. Nature Reviews Neurology, 2016



EBC CONSENSUS STATEMENT

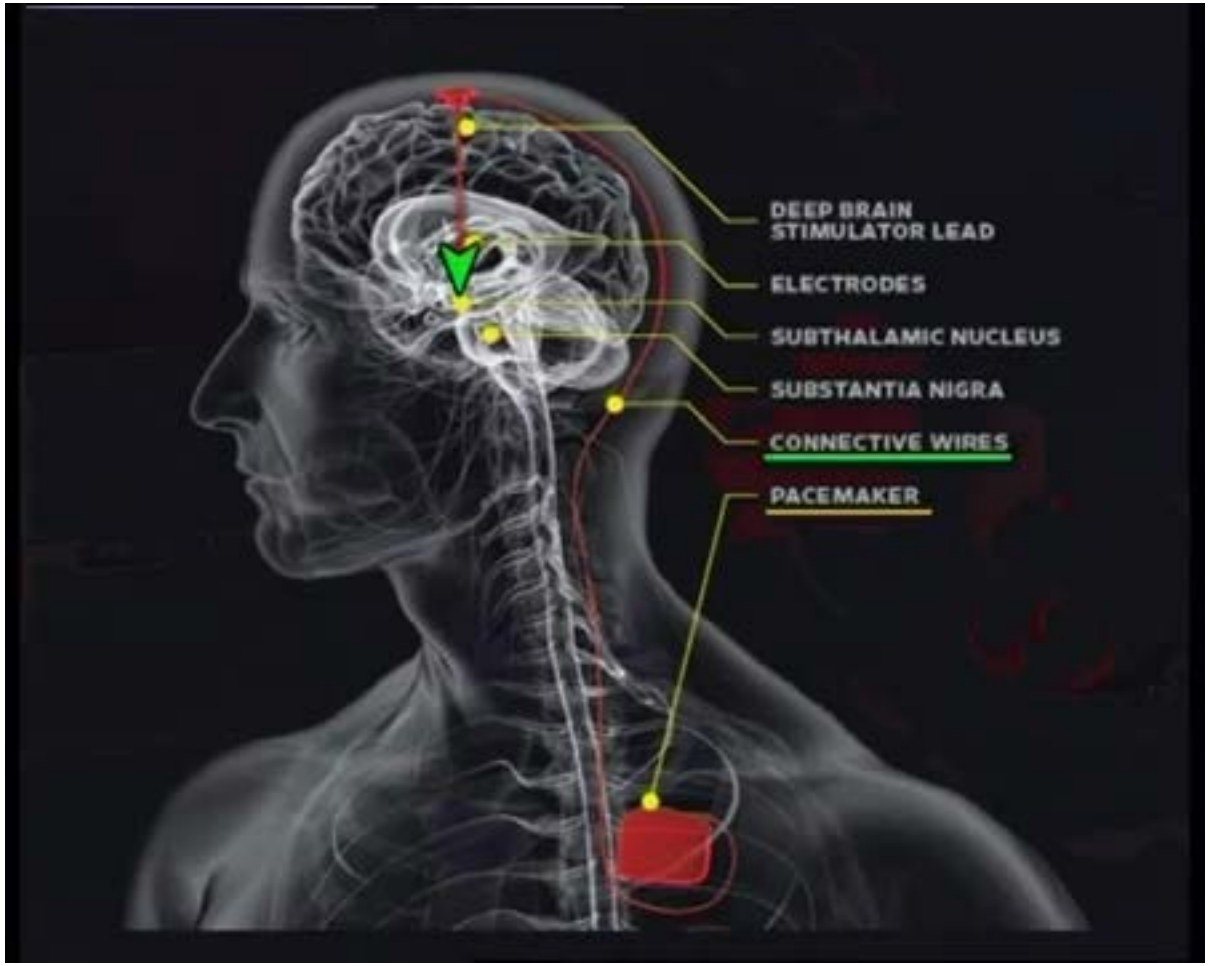
THE NEED TO EXPAND **BRAIN RESEARCH** IN EUROPE

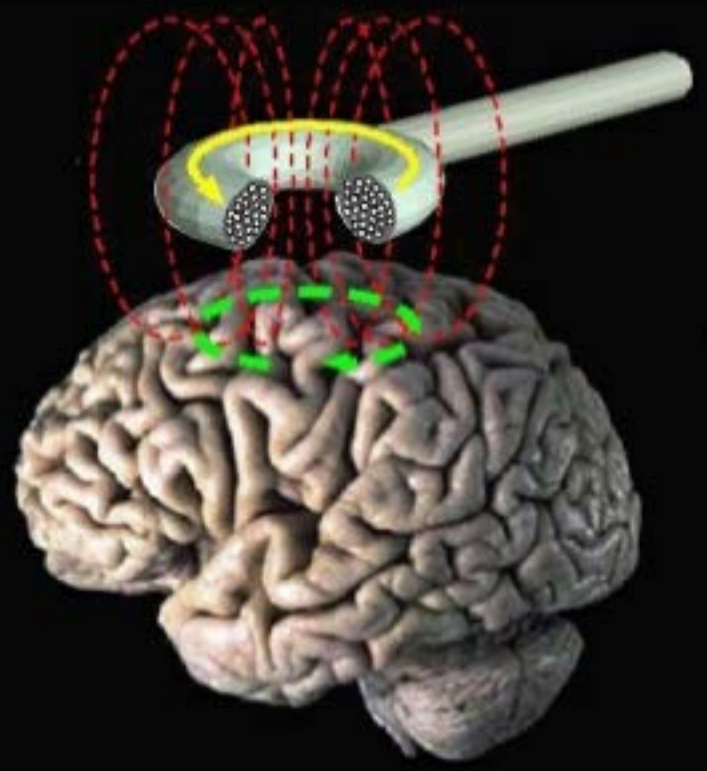
"Improved collaboration in European Brain Research :
Better understanding for better Brain Health"

1. Kako nastanejo možgani? Razvojna nevroznanost	2. Razumevanje vzročnih mehanizmov: povezava med celičnimi / molekularnimi mehanizmi ter kompleksnimi vedenji in bolezenskimi stanji	3. Obdelava informacij: kaj možgani počnejo	4. Nove tehnologije	5. Možgani in duševne bolezni otrok in odraslih	6. Računska nevroznanost in velike baze podatkov	7. Razumevanje in izboljšanje delovanja zdravil v možganih

Morris et al. Consensus Statement on European Brain Research The need to expand Brain Research in Europe. European Journal of Neuroscience 2016

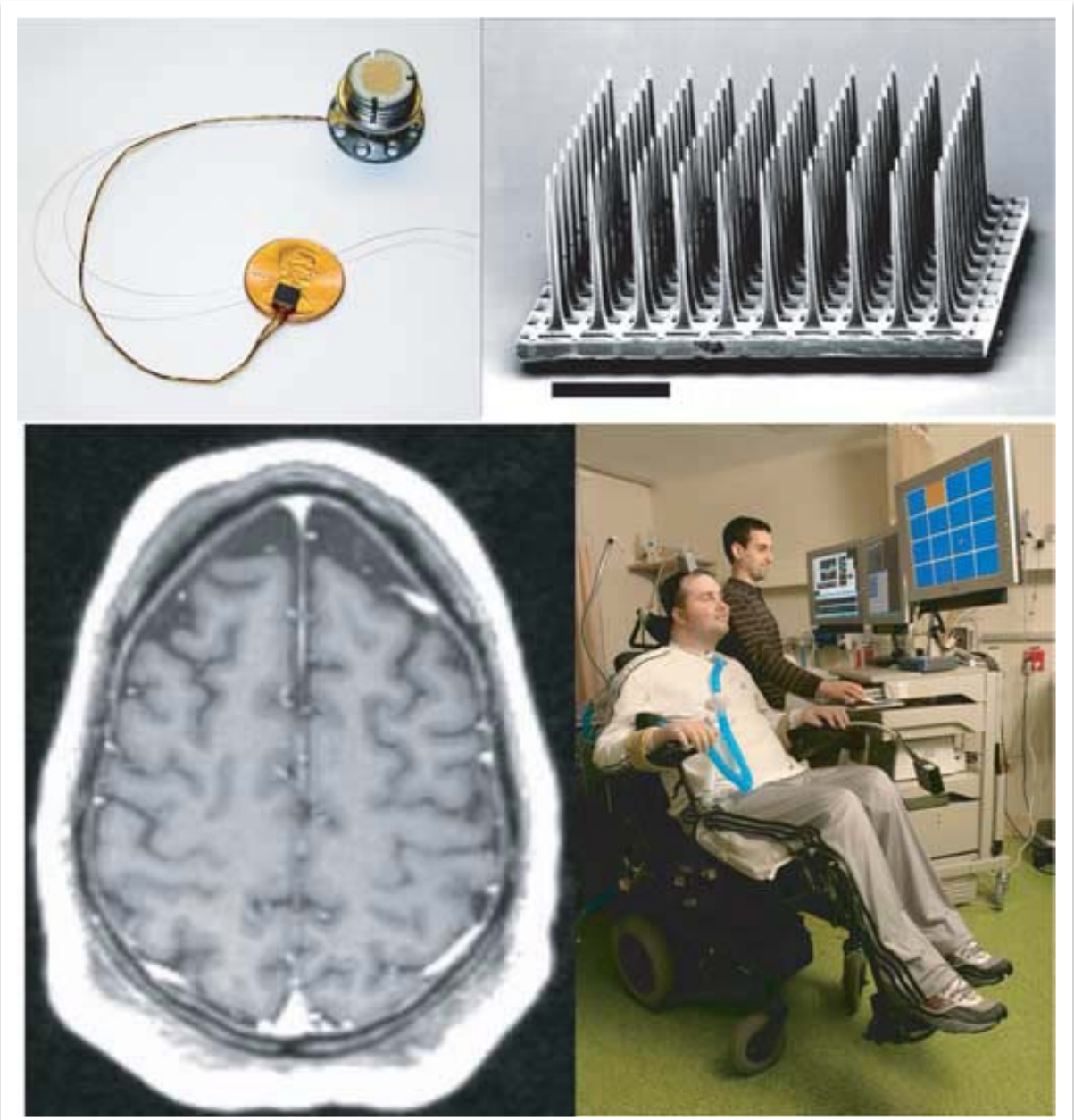

VACCINE





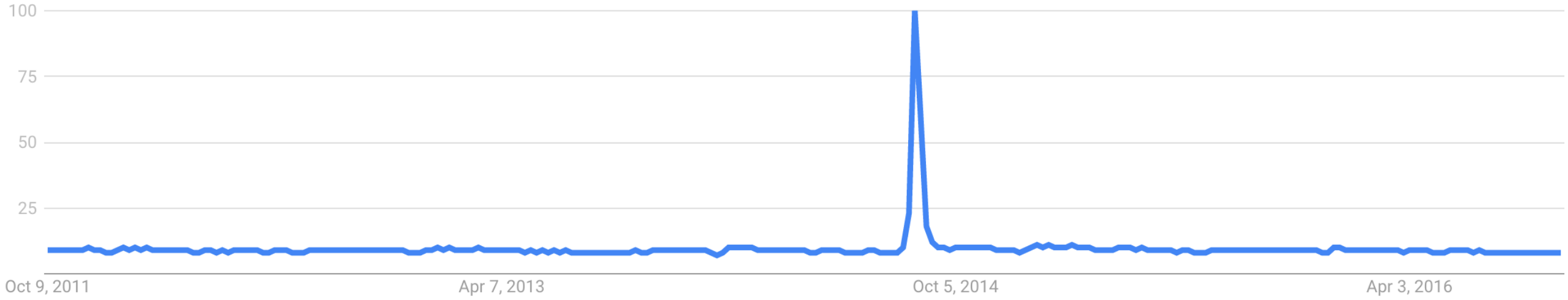
National Institute of Neurological Disorders and Stroke

Hochberg et al., Nature 2006



BrainGate™ Neural Interface System
http://www.cyberkineticsinc.com/

Hochberg et al., Nature 2006



www.google.com/trends/explore?q=als

http://youtu.be/yFc9vNwm5Dg

project MinE Make it yours

International groundbreaking genetic ALS research

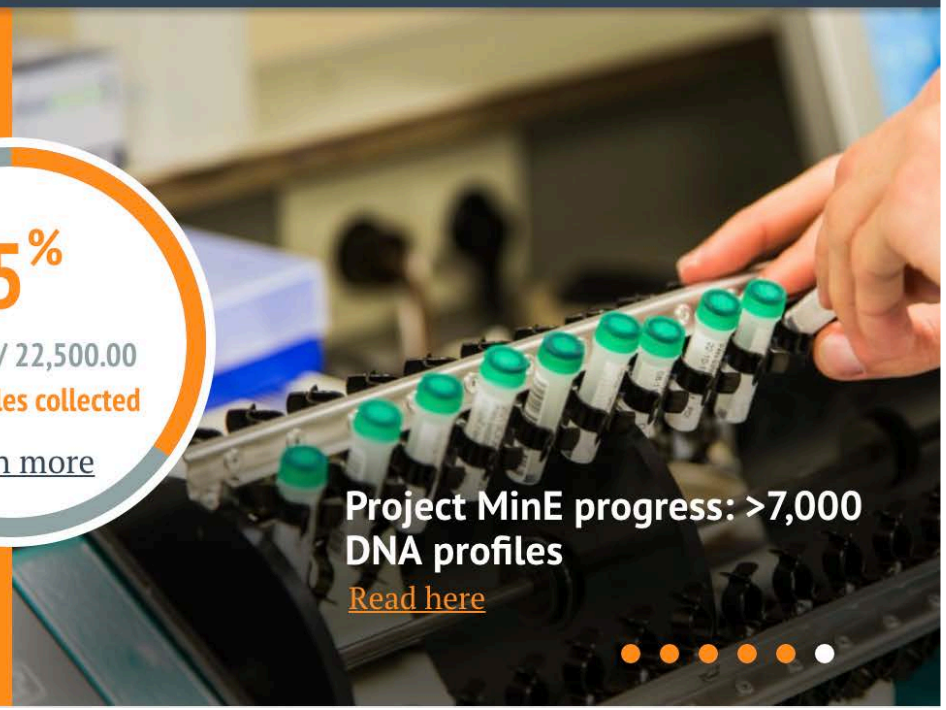
To understand the genetic basis of ALS and to ultimately find a cure for this devastating, fatal neuromuscular disease, Project MinE aims to analyse the DNA of at least 15,000 ALS patients and 7,500 control subjects. The resulting 22,500 DNA profiles will be compared.

35%

7,862.81 / 22,500.00

DNA profiles collected

Learn more



Project MinE progress: >7,000 DNA profiles

Read here

Make a donation today

100 percent of all donations to Project Mine will go directly towards the mapping and analysis of DNA profiles.

Donate €...

Choose your own amount

Donate €75

One chromosome

Donate €300

Four chromosomes

Donate €975

½ DNA profile

Donate €1950

Full DNA profile

Genome-wide association analyses identify new risk variants and the genetic architecture of amyotrophic lateral sclerosis

Wouter van Rheenen[1,123], Aleksey Shatunov[2,123], Annelot M Dekker[1], Russell L McLaughlin[3], Frank P Diekstra[1], Sara L Pulit[4], Rick A A van der Spek[1], Urmo Võsa[5], Simone de Jong[6,7], Matthew R Robinson[8], Jian Yang[8], Isabella Fogh[2,9], Perry TC van Doormaal[1], Gijs H P Tazelaar[1], Max Koppers[1,10], Anna M Blokhuis[1,10], William Sproviero[2], Ashley R Jones[2], Kevin P Kenna[11], Kristel R van Eijk[1], Oliver Harschnitz[1,10], Raymond D Schellevis[1], William J Brands[1], Jelena Medic[1], Androniki Menelaou[4], Alice Vajda[12,13], Nicola Ticozzi[9,14], Kuang Lin[2], Boris Rogelj[15,16], Katarina Vrabec[17], Metka Ravnik-Glavač[17,18], Blaž Koritnik[19], Janez Zidar[19], Lea Leonardis[19], Leja Dolenc Grošelj[19], Stéphanie Millecamps[20], François Salachas[20–22], Vincent Meininger[23,24], Mamede de Carvalho[25,26], Susana Pinto[25,26], Jesus S Mora[27], Ricardo Rojas-García[28,29], Meraida Polak[30,31], Siddharthan Chandran[32,33], Shuna Colville[32], Robert Swingler[32], Karen E Morrison[34], Pamela J Shaw[35], John Hardy[36], Richard W Orrell[37], Alan Pittman[36,38], Katie Sidle[37], Pietro Fratta[39], Andrea Malaspina[40,41], Simon Topp[2], Susanne Petri[42], Susanne Abdulla[43], Carsten Drepper[44], Michael Sendtner[44], Thomas Meyer[45], Roel A Ophoff[46–48], Kim A Staats[48], Martina Wiedau-Pazos[49], Catherine Lomen-Hoerth[50], Vivianna M Van Deerlin[51], John Q Trojanowski[51], Lauren Elman[52], Leo McCluskey[52], A Nazli Basak[53], Ceren Tunca[53], Hamid Hamzeiy[53], Yesim Parman[54], Thomas Meitinger[55], Peter Lichtner[55], Milena Radivojkov-Blagojevic[55], Christian R Andres[56], Cindy Maurel[56], Gilbert Bensimon[57–59], Bernhard Landwehrmeyer[60], Alexis Brice[61–65], Christine A M Payan[57,59], Safaa Saker-Delye[66], Alexandra Dürr[67], Nicholas W Wood[68], Lukas Tittmann[69], Wolfgang Lieb[69], Andre Franke[70], Marcella Rietschel[71], Sven Cichon[72–76], Markus M Nöthen[72,73], Philippe Amouyel[77], Christophe Tzourio[78], Jean-François Dartigues[78], Andre G Uitterlinden[79,80], Fernando Rivadeneira[79,80], Karol Estrada[79], Albert Hofman[80,81], Charles Curtis[6,7], Hylke M Blauw[1], Anneke J van der Kooi[82], Marianne de Visser[82], An Goris[83], Markus Weber[84], Christopher E Shaw[2], Bradley N Smith[2], Orietta Pansarasa[85], Cristina Cereda[85], Roberto Del Bo[86], Giacomo P Comi[86], Sandra D'Alfonso[87], Cinzia Bertolin[88], Gianni Sorarù[88], Letizia Mazzini[89], Viviana Pensato[90], Cinzia Gellera[90], Cinzia Tiloca[9], Antonia Ratti[9,14], Andrea Calvo[91,92], Cristina Moglia[91,92], Maura Brunetti[91,92], Simona Arcuti[93], Rosa Capozzo[93], Chiara Zecca[93], Christian Lunetta[94], Silvana Penco[95], Nilo Riva[96], Alessandro Padovani[97], Massimiliano Filosto[97], Bernard Muller[98], Robbert Jan Stuit[98], PARALS Registry[99], SLALOM Group[99], SLAP Registry[99], FALS Sequencing Consortium[99], SLAGEN Consortium[99], NNIPPS Study Group[99], Ian Blair[100], Katharine Zhang[100], Emily P McCann[100], Jennifer A Fifita[100], Garth A Nicholson[100,101], Dominic B Rowe[100], Roger Pamphlett[102], Matthew C Kiernan[103], Julian Grosskreutz[104], Otto W Witte[104], Thomas Ringer[104], Tino Prell[104], Beatrice Stubendorff[104], Ingo Kurth[105], Christian A Hübner[105], P Nigel Leigh[106], Federico Casale[91], Adriano Chio[91,92], Ettore Beghi[107], Elisabetta Pupillo[107], Rosanna Tortelli[93], Giancarlo Logroscino[108,109], John Powell[2], Albert C Ludolph[60], Jochen H Weishaupt[60], Wim Robberecht[83,110,111], Philip Van Damme[83,110,111], Lude Franke[5], Tune H Pers[112–116], Robert H Brown[11], Jonathan D Glass[30,31], John E Landers[11], Orla Hardiman[12,13], Peter M Andersen[60,117], Philippe Corcia[56,118,119], Patrick Vourc'h[56], Vincenzo Silani[9,14], Naomi R Wray[8], Peter M Visscher[8,120], Paul I W de Bakker[4,121], Michael A van Es[1], R Jeroen Pasterkamp[10], Cathryn M Lewis[6,122], Gerome Breen[6,7], Ammar Al-Chalabi[2,124], Leonard H van den Berg[1,124] & Jan H Veldink[1,124]

SiNAPSA

SLOVENSKO DRUŠTVO ZA NEVROZNANOST
SLOVENIAN NEUROSCIENCE ASSOCIATION

za možgane

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vsak prvi <u>četrtek</u> v mesecu v Knjigarni Konzorcij

6. oktober 2016 ob 18h

O zdravljenju živali z matičnimi celicami

Luka Mohorič, Animacel d.o.o.
Renata Dacinger, TV Slovenija

SATENA

Znanost na cesti

12. oktober 2016 ob 19h, Kavarna Union

Tretji planet ob Soncu v Rimski cesti ni nekaj izjemnega

prof. Tomaž Zwitter, FMF UL
Lenart J. Kučič, DELO

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Institut "Jožef Stefan" Ljubljana, Slovenija

Univerza v Ljubljani
Fakulteta za matematiko in fiziko

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