



Cover image: Auditory regions of deaf individuals play a role in specific components of executive functions. The image 'Co-ordination' is by Rubbena Aurangzeb-Tariq, an artist and facilitator whose work concerns culture and deaf identity, and asks the question 'Why is it that given the same information, we perceive things differently?' From Manini et al. Sensory experience modulates the reorganization of auditory regions for executive processing. Pp. 3698–710.

Contents

Editorial

- Risk aversion keeps universities safe and effective. Discuss
M. Husain
3333

Essay

- Cranial trepanation in pre-Columbian Peruvian cultures: was it an option to treat epilepsy?
P. H. Espino, J. E. Toro-Perez, S. Shkrum and J. G. Burneo
3335

Scientific Commentaries

- Seronegative autoimmune encephalitis: exploring the unknown
R. W. van Steenhoven and M. J. Titulaer
3339
- Sex differences in Alzheimer's disease risk: are immune responses the key?
R. F. Buckley
3341
- Loss of PTEN phosphorylation via single point mutation alters cortical connectivity and behaviour
M. Binder and A. Bordey
3343
- Exciting insights into tumour-associated epilepsy with electrophysiological and optical recording
C. R. French
3345

Review Articles

- Towards network-guided neuromodulation for epilepsy
R. J. Piper, R. M. Richardson, G. Worrell, D. W. Carmichael, T. Baldeweg, B. Litt, T. Denison and M. M. Tisdall
3347
- Contribution of B cells to cortical damage in multiple sclerosis
P. Bhargava, H.-P. Hartung and P. A. Calabresi
3363



Reports

Recurrent de novo mutations in CLDN5 induce an anion-selective blood-brain barrier and alternating hemiplegia
Y. Hashimoto, K. Poirier, N. Boddaert, L. Hubert, M. Aubart, A. Kaminska, M. Alison, I. Desguerre, A. Munnich and M. Campbell

3374

Endocannabinoid dysfunction in neurological disease: neuro-ocular DAGLA-related syndrome

M. N. Bainbridge, A. Mazumder, D. Ogasawara, R. A. Jamra, G. Bernard, E. Bertini, L. Burglen, H. Cope, A. Crawford, A. Derksen, L. Dure, E. Gantz, M. Koch-Hogrebe, A. C. E. Hurst, S. Mahida, P. Marshall, A. Micalizzi, A. Novelli, H. Peng, Rady Children's Institute for Genomic Medicine, D. Rodriguez, S. L. Robbins, S. L. Rutledge, R. Scalise, S. Schließke, V. Shashi, S. Srivastava, I. Thiffault, S. Topol, Undiagnosed Disease Network, L. Qebibo, D. Wieczorek, B. Cravatt, S. Haricharan, A. Torkamani and J. Friedman

3383

Clinical Trial

Self-modulation of motor cortex activity after stroke: a randomized controlled trial

Z.-B. Sanders, M. K. Fleming, T. Smejka, M. C. Marzolla, C. Zich, S. W. Rieger, M. Lührs, R. Goebel, C. Sampaio-Baptista and H. Johansen-Berg

3391

Original Articles

Double administration of self-complementary AAV9^{NDUFS4} prevents Leigh disease in Ndufs4^{-/-} mice

S. Corrà, R. Cerutti, V. Balmaceda, C. Visconti and M. Zeviani

3405

CHCHD10 and SLP2 control the stability of the PHB complex: a key factor for motor neuron viability

E. C. Genin, S. Bannwarth, B. Ropert, F. Lespinasse, A. Mauri-Crouzet, G. Augé, K. Fragaki, C. Cochaud, E. Donnarumma, S. Lucas-Gervais, T. Wai and V. Paquis-Flucklinger

3415

Characteristics, surgical outcomes, and influential factors of epilepsy in Sturge-Weber syndrome

S. Wang, J. Pan, M. Zhao, X. Wang, C. Zhang, T. Li, M. Wang, J. Wang, J. Zhou, C. Liu, Y. Sun, M. Zhu, X. Qi, G. Luan and Y. Guan

3431

A Mendelian randomization study investigating the causal role of inflammation on Parkinson's disease

D. Bottiglengo, L. Foco, P. Seibler, C. Klein, I. R. König and F. Del Greco M.

3444

Tau accelerates α-synuclein aggregation and spreading in Parkinson's disease

L. Pan, C. Li, L. Meng, Y. Tian, M. He, X. Yuan, G. Zhang, Z. Zhang, J. Xiong, G. Chen and Z. Zhang

3454

Lipid pathway dysfunction is prevalent in patients with Parkinson's disease

J. Galper, N. J. Dean, R. Pickford, S. J. G. Lewis, G. M. Halliday, W. S. Kim and N. Dzamko

3472

Amphetamine-induced dopamine release and impulsivity in Parkinson's disease

A. K. Song, K. R. Hay, P. Trujillo, M. Aumann, A. J. Stark, Y. Yan, H. Kang, M. J. Donahue, D. H. Zald and D. O. Claassen

3488

Mild motor impairment as prodromal state in amyotrophic lateral sclerosis: a new diagnostic entity

M. Benatar, V. Granit, P. M. Andersen, A.-L. Grignon, C. McHutchison, S. Cosentino, A. Malaspina and J. Wuu

3500

Seronegative autoimmune encephalitis: clinical characteristics and factors associated with outcomes

W.-J. Lee, H.-S. Lee, D.-Y. Kim, H.-S. Lee, J. Moon, K.-I. Park, S. K. Lee, K. Chu and S.-T. Lee

3509

Linking lesions in sensorimotor cortex to contralateral hand function in multiple sclerosis: a 7 T MRI study

M. A. J. Madsen, V. Wiggemann, M. F. M. Marques, H. Lundell, S. Cerri, O. Puonti, M. Blinkenberg, J. R. Christensen, F. Sellebjerg and H. R. Siebner

3522

Sex-specific effects of microglial activation on Alzheimer's disease proteinopathy in older adults

K. B. Casaleotto, E. Nichols, V. Aslanyan, S. M. Simone, J. S. Rabin, R. La Joie, A. M. Brickman, K. Dams-O'Connor, P. Palta, R. G. Kumar, K. M. George, C. L. Satizabal, J. Schneider and J. Pa

3536

Ante-mortem plasma phosphorylated tau (181) predicts Alzheimer's disease neuropathology and regional tau at autopsy

M. S. Morrison, H. J. Aparicio, K. Blennow, H. Zetterberg, N. J. Ashton, T. K. Karikari, Y. Tripodis, B. Martin, J. N. Palmisano, M. A. Sugarman, B. Frank, E. G. Steinberg, K. W. Turk, A. E. Budson, R. Au, L. E. Goldstein, G. R. Jun, N. W. Kowall, R. Killiany, W. Q. Qiu, R. A. Stern, J. Mez, A. C. McKee, T. D. Stein and M. L. Alosco

3546

Seeding, maturation and propagation of amyloid β-peptide aggregates in Alzheimer's disease

X. Li, S. Ospitalieri, T. Robberechts, L. Hofmann, C. Schmid, A. R. Upadhyaya, M. J. Koper, C. A. F. von Arnim, S. Kumar, M. Willem, K. Gnoth, M. Ramakers, J. Schymkowitz, F. Rousseau, J. Walter, A. Ronisz, K. Balakrishnan and D. R. Thal

3558

Genetically identical twins show comparable tau PET load and spatial distribution

E. M. Coomans, J. Tomassen, R. Ossenkoppele, S. S. V. Golla, M. den Hollander, L. E. Collij, E. Welting, S. M. van der Landen, E. E. Wolters, A. D. Windhorst, F. Barkhof, E. J.C. de Geus, P. Scheltens, P. J. Visser, B. N. M. van Berckel and A. den Braber

3571

APOE4 derived from astrocytes leads to blood-brain barrier impairment

R. J. Jackson, J. C. Meltzer, H. Nguyen, C. Commins, R. E. Bennett, E. Hudry and B. T. Hyman

3582

Autosomal dominant and sporadic late onset Alzheimer's disease share a common *in vivo* pathophysiology

J. C. Morris, M. Weiner, C. Xiong, L. Beckett, D. Coble, N. Saito, P. S. Aisen, R. Allegri, T. L. S. Benzinger, S. B. Berman, N. J. Cairns, M. C. Carrillo, H. C. Chui, J. P. Chhatwal, C. Cruchaga, A. M. Fagan, M. Farlow, N. C. Fox, B. Ghetti, A. M. Goate, B. A. Gordon, N. Graff-Radford, G. S. Day, J. Hassenstab, T. Ikeuchi, C. R. Jack Jr, W. J. Jagust, M. Jucker, J. Levin, P. Massoumzadeh, C. L. Masters, R. Martins, E. McDade, H. Mori, J. M. Noble, R. C. Petersen, J. M. Ringman, S. Salloway, A. J. Saykin, P. R. Schofield, L. M. Shaw, A. W. Toga, J. Q. Trojanowski, J. Vöglein, S. Weninger, R. J. Bateman and V. D. Buckles; on behalf of the Dominantly Inherited Alzheimer Network and the Alzheimer's Disease Neuroimaging and Initiative

3594

The impact of phosphorylated PTEN at threonine 366 on cortical connectivity and behaviour

J. M. T. Ledderose, J. A. Benitez, A. J. Roberts, R. Reed, W. Bintig, M. E. Larkum, R. N. S. Sachdev, F. Furnari and B. J. Eickholt

3608

Alpha-synuclein supports type 1 interferon signalling in neurons and brain tissue

B. Monogue, Y. Chen, H. Sparks, R. Behbehani, A. Chai, A. J. Rajic, A. Massey, B. K. Kleinschmidt-Demasters, M. Vermeren, T. Kunath and J. D. Beckham

3622

Na_v1.7 is required for normal C-low threshold mechanoreceptor function in humans and mice

S. J. Middleton, I. Perini, A. C. Themistocleous, G. A. Weir, K. McCann, A. M. Barry, A. Marshall, M. Lee, L. M. Mayo, M. Bohic, G. Baskozos, I. Morrison, L. S. Löken, S. McIntyre, S. S. Nagi, R. Staud, I. Sehlstedt, R. D. Johnson, J. Wessberg, J. N. Wood, C. G. Woods, A. Moqrich, H. Olausson and D. L. Bennett

3637

Regional healthy brain activity, glioma occurrence and symptomatology

T. Numan, L. C. Breedt, B. de A. P. C. Maciel, S. D. Kulik, J. Derkx, M. M. Schoonheim, M. Klein, P. C. de Witt Hamer, J. J. Miller, E. R. Gerstner, S. M. Stufflebeam, A. Hillebrand, C. J. Stam, J. J. G. Geurts, J. C. Reijneveld and L. Douw

3654

Single unit analysis and wide-field imaging reveal alterations in excitatory and inhibitory neurons in glioma

B. J. A. Gill, F. A. Khan, A. R. Goldberg, E. M. Merricks, X. Wu, A. A. Sosunov, T. D. Sudhakar, A. Dovas, W. Lado, A. J. Michalak, J. J. Teoh, J.-you Liou, W. N. Frankel, G. M. McKhann II, P. Canoll and C. A. Schevon

3666

Stimulation of the cuneiform nucleus enables training and boosts recovery after spinal cord injury

A.-S. Hofer, M. I. Scheuber, A. M. Sartori, N. Good, S. A. Stalder, N. Hammer, K. Fricke, S. M. Schalbetter, A. K. Engmann, R. Z. Weber, R. Rust, M. P. Schneider, N. Russi, G. Favre and M. E. Schwab

3681

Sensory experience modulates the reorganization of auditory regions for executive processing

B. Manini, V. Vinogradova, B. Woll, D. Cameron, M. Eimer and V. Cardin

3698

Biallelic variants in SLC35B2 cause a novel chondrodysplasia with hypomyelinating leukodystrophy

A. Guasto, J. Dubail, S. Aguilera-Albesa, C. Paganini, C. Vanhulle, W. Haouari, N. Gorria-Redondo, E. Aznal-Sainz, N. Boddaert, L. Planas-Serra, A. Schlüter, V. Vélez-Santamaría, E. Verdura, A. Bruneel, A. Rossi, C. Huber, A. Pujol and V. Cormier-Daire

3711

Book Review

Deisseroth's connections: the rapprochement of brain and mind

D. Okai

3723

Letters to the Editor

Is it time to rename hereditary cases of cerebral palsy?

A. Kavčič

e82

Reply: Is it time to rename hereditary cases of cerebral palsy?

H. Hu and K. Xu

e84

Bi-allelic FRA10AC1 variants in a multisystem human syndrome

S. Banka, S. Shalev, S.-M. Park, K. A. Wood, H. B. Thomas, H. L. Wright, M. Alyahya, S. Bankier, O. Alimi, E. Chervinsky, L. A. H. Zeef and R. T. O'Keefe

e86

Methodological drawbacks in the alleged association between foetal sonographic anomalies and autism

L. Sagi-Dain, B. Weisz, K. H. Krajden, A. Singer, Y. Yaron and R. Maymon

e90

Reply: Methodological drawbacks in the alleged association between foetal sonographic anomalies and autism

I. Menashe, O. Regev, A. Hadar, G. Meiri, A. Michaelovski, I. Dinstein and R. Hershkovitz

e92

Expanding PRDX3 disease: broad range of onset age and infratentorial MRI signal changes
A. P. Rebelo, B. Bender, T. B. Haack, S. Zuchner, PREPARE consortium, A. N. Basak and M. Synofzik
e95

A novel MLIP truncating variant in an 80-year-old patient with late-onset progressive weakness
L. Bermejo-Guerrero, A. Arteche-López, C. de Fuenmayor Fernández de la Hoz, A. Hernández-Laín, M. A. Martín and C. Domínguez-González
e99

Correction
Correction to: TMEM63C mutations cause mitochondrial morphology defects and underlie hereditary spastic paraplegia
e103