Douglas L Rothman

List of Publications by Citations

234 papers	18,140 citations	70 h-index	132 g-index
250 ext. papers	20,043 ext. citations	8 avg, IF	6.43 L-index

#	Paper	IF	Citations
234	Quantitation of muscle glycogen synthesis in normal subjects and subjects with non-insulin-dependent diabetes by 13C nuclear magnetic resonance spectroscopy. *New England Journal of Medicine*, **1990**, 322, 223-8	59.2	1052
233	Energy on demand. *Science*, **1999**, 283, 496-7	33.3	989
232	Effects of free fatty acids on glucose transport and IRS-1-associated phosphatidylinositol 3-kinase activity. *Journal of Clinical Investigation*, **1999**, 103, 253-9	15.9	887
231	Subtype-specific alterations of gamma-aminobutyric acid and glutamate in patients with major depression. *Archives of General Psychiatry*, **2004**, 61, 705-13		608
230	Increased glucose transport-phosphorylation and muscle glycogen synthesis after exercise training in insulin-resistant subjects. *New England Journal of Medicine*, **1996**, 335, 1357-62	59.2	522
229	Impaired glucose transport as a cause of decreased insulin-stimulated muscle glycogen synthesis in type 2 diabetes. *New England Journal of Medicine*, **1999**, 341, 240-6	59.2	489
228	Analysis of macromolecule resonances in 1H NMR spectra of human brain. *Magnetic Resonance in Medicine*, **1994**, 32, 294-302	4.4	432
227	Quantitation of hepatic glycogenolysis and gluconeogenesis in fasting humans with 13C NMR. *Science*, **1991**, 254, 573-6	33.3	427
226	Energetic basis of brain activity: implications for neuroimaging. *Trends in Neurosciences*, **2004**, 27, 489-95	13.3	407
225	Neuronal-glial glucose oxidation and glutamatergic-GABAergic function. *Journal of Cerebral Blood Flow and Metabolism*, **2006**, 26, 865-77	7.3	327
224	Astroglial contribution to brain energy metabolism in humans revealed by 13C nuclear magnetic resonance spectroscopy: elucidation of the dominant pathway for neurotransmitter glutamate repletion and measurement of astrocytic oxidative metabolism. *Journal of Neuroscience*, **2002**, 22, 1523-31	6.6	304
223	Cerebral energetics and spiking frequency: the neurophysiological basis of fMRI. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 10765-70	11.5	285
222	Simultaneous determination of the rates of the TCA cycle, glucose utilization, alpha-ketoglutarate/glutamate exchange, and glutamine synthesis in human brain by NMR. *Journal of Cerebral Blood Flow and Metabolism*, **1995**, 15, 12-25	7.3	283
221	Cortical gamma-aminobutyric acid levels across the menstrual cycle in healthy women and those with premenstrual dysphoric disorder: a proton magnetic resonance spectroscopy study. *Archives of General Psychiatry*, **2002**, 59, 851-8		282
220	The contribution of GABA to glutamate/glutamine cycling and energy metabolism in the rat cortex in vivo. *Proceedings of the National Academy of Sciences of the United States of America*, **2005**, 102, 5588-93	11.5	274
219	In vivo NMR studies of the glutamate neurotransmitter flux and neuroenergetics: implications for brain function. *Annual Review of Physiology*, **2003**, 65, 401-27	23.1	269
218	The effect of gabapentin on brain gamma-aminobutyric acid in patients with epilepsy. *Annals of Neurology*, **1996**, 39, 95-9	9.4	262

217	NMR determination of the TCA cycle rate and alpha-ketoglutarate/glutamate exchange rate in rat brain. *Journal of Cerebral Blood Flow and Metabolism*, **1992**, 12, 434-47	7.3	239
216	The contribution of blood lactate to brain energy metabolism in humans measured by dynamic 13C nuclear magnetic resonance spectroscopy. *Journal of Neuroscience*, **2010**, 30, 13983-91	6.6	231
215	13C MRS studies of neuroenergetics and neurotransmitter cycling in humans. *NMR in Biomedicine*, **2011**, 24, 943-57	4.4	208
214	Localized 13C NMR spectroscopy in the human brain of amino acid labeling from D-[1-13C]glucose. *Journal of Neurochemistry*, **1994**, 63, 1377-85	6	202
213	In vivo (13)C NMR measurement of neurotransmitter glutamate cycling, anaplerosis and TCA cycle flux in rat brain during. *Journal of Neurochemistry*, **2001**, 76, 975-89	6	199
212	Reductions in occipital cortex GABA levels in panic disorder detected with 1h-magnetic resonance spectroscopy. *Archives of General Psychiatry*, **2001**, 58, 556-61		193
211	In vivo nuclear magnetic resonance spectroscopy studies of the relationship between the glutamate-glutamine neurotransmitter cycle and functional neuroenergetics. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **1999**, 354, 1165-77	5.8	180
210	Altered brain mitochondrial metabolism in healthy aging as assessed by in vivo magnetic resonance spectroscopy. *Journal of Cerebral Blood Flow and Metabolism*, **2010**, 30, 211-21	7.3	175
209	Total neuroenergetics support localized brain activity: implications for the interpretation of fMRI. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 10771-6	11.5	175
208	Quantitative functional imaging of the brain: towards mapping neuronal activity by BOLD fMRI. *NMR in Biomedicine*, **2001**, 14, 413-31	4.4	172
207	Odor maps of aldehydes and esters revealed by functional MRI in the glomerular layer of the mouse olfactory bulb. *Proceedings of the National Academy of Sciences of the United States of America*, **2003**, 100, 11029-34	11.5	165
206	A model for the regulation of cerebral oxygen delivery. *Journal of Applied Physiology*, **1998**, 85, 554-64	3.7	162
205	Glutamate-glutamine cycling in the epileptic human hippocampus. *Epilepsia*, **2002**, 43, 703-10	6.4	160
204	Leptin reverses diabetes by suppression of the hypothalamic-pituitary-adrenal axis. *Nature Medicine*, **2014**, 20, 759-63	50.5	142
203	Dynamic fMRI and EEG recordings during spike-wave seizures and generalized tonic-clonic seizures in WAG/Rij rats. *Journal of Cerebral Blood Flow and Metabolism*, **2004**, 24, 589-99	7.3	139
202	Intramuscular glycogen and intramyocellular lipid utilization during prolonged exercise and recovery in man: a 13C and 1H nuclear magnetic resonance spectroscopy study. *Journal of Clinical Endocrinology and Metabolism*, **2000**, 85, 748-54	5.6	135
201	Glutamatergic neurotransmission and neuronal glucose oxidation are coupled during intense neuronal activation. *Journal of Cerebral Blood Flow and Metabolism*, **2004**, 24, 972-85	7.3	129
200	Direct evidence for activity-dependent glucose phosphorylation in neurons with implications for the astrocyte-to-neuron lactate shuttle. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 5385-90	11.5	128

199	Cortical energy demands of signaling and nonsignaling components in brain are conserved across mammalian species and activity levels. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 3549-54	11.5	127
198	Preliminary evidence of low cortical GABA levels in localized 1H-MR spectra of alcohol-dependent and hepatic encephalopathy patients. *American Journal of Psychiatry*, **1999**, 156, 952-4	11.9	122
197	Oxidative glucose metabolism in rat brain during single forepaw stimulation: a spatially localized 1H[13C] nuclear magnetic resonance study. *Journal of Cerebral Blood Flow and Metabolism*, **1997**, 17, 1040-7	7.3	116
196	Improvements on an in vivo automatic shimming method [FASTERMAP]. *Magnetic Resonance in Medicine*, **1997**, 38, 834-9	4.4	116
195	Baseline brain energy supports the state of consciousness. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 11096-101	11.5	113
194	Magnetic resonance spectroscopy of neurotransmitters in human brain. *Annals of Neurology*, **2003**, 54 Suppl 6, S25-31	9.4	111
193	Glutamate metabolism in major depressive disorder. *American Journal of Psychiatry*, **2014**, 171, 1320-7	11.9	109
192	Human brain beta-hydroxybutyrate and lactate increase in fasting-induced ketosis. *Journal of Cerebral Blood Flow and Metabolism*, **2000**, 20, 1502-7	7.3	106
191	Lactate efflux and the neuroenergetic basis of brain function. *NMR in Biomedicine*, **2001**, 14, 389-96	4.4	105
190	Increased brain monocarboxylic acid transport and utilization in type 1 diabetes. *Diabetes*, **2006**, 55, 929-34	3.9	103
189	Initial observations on effect of vigabatrin on in vivo 1H spectroscopic measurements of gamma-aminobutyric acid, glutamate, and glutamine in human brain. *Epilepsia*, **1995**, 36, 457-64	6.4	102
188	Validation of 13C NMR measurement of human skeletal muscle glycogen by direct biochemical assay of needle biopsy samples. *Magnetic Resonance in Medicine*, **1992**, 27, 13-20	4.4	101
187	13C NMR of intermediary metabolism: implications for systemic physiology. *Annual Review of Physiology*, **2001**, 63, 15-48	23.1	100
186	Dynamic multi-coil shimming of the human brain at 7 T. *Journal of Magnetic Resonance*, **2011**, 212, 280-8	3	99
185	Dynamic shim updating: a new approach towards optimized whole brain shimming. *Magnetic Resonance in Medicine*, **1996**, 36, 159-65	4.4	96
184	NMR determination of intracerebral glucose concentration and transport kinetics in rat brain. *Journal of Cerebral Blood Flow and Metabolism*, **1992**, 12, 448-55	7.3	96
183	High-resolution CMR(O2) mapping in rat cortex: a multiparametric approach to calibration of BOLD image contrast at 7 Tesla. *Journal of Cerebral Blood Flow and Metabolism*, **2000**, 20, 847-60	7.3	95
182	□H-[□□C]-nuclear magnetic resonance spectroscopy measures of ketamine□ effect on amino acid neurotransmitter metabolism. *Biological Psychiatry*, **2012**, 71, 1022-5	7.9	94

181	The effects of ketamine on prefrontal glutamate neurotransmission in healthy and depressed subjects. *Neuropsychopharmacology*, **2018**, 43, 2154-2160	8.7	92
180	Glutamine is the major precursor for GABA synthesis in rat neocortex in vivo following acute GABA-transaminase inhibition. *Brain Research*, **2001**, 919, 207-20	3.7	92
179	Effects of gabapentin on brain GABA, homocarnosine, and pyrrolidinone in epilepsy patients. *Epilepsia*, **2000**, 41, 675-80	6.4	89
178	State of the art direct 13C and indirect 1H-[13C] NMR spectroscopy in vivo. A practical guide. *NMR in Biomedicine*, **2011**, 24, 958-72	4.4	87
177	Short echo time proton magnetic resonance spectroscopic imaging of macromolecule and metabolite signal intensities in the human brain. *Magnetic Resonance in Medicine*, **1996**, 35, 633-9	4.4	84
176	Homocarnosine and the measurement of neuronal pH in patients with epilepsy. *Magnetic Resonance in Medicine*, **1997**, 38, 924-9	4.4	83
175	Measuring human brain GABA in vivo: effects of GABA-transaminase inhibition with vigabatrin. *Molecular Neurobiology*, **1998**, 16, 97-121	6.2	83
174	Regional glucose metabolism and glutamatergic neurotransmission in rat brain in vivo. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 12700-5	11.5	83
173	Dependence of oxygen delivery on blood flow in rat brain: a 7 tesla nuclear magnetic resonance study. *Journal of Cerebral Blood Flow and Metabolism*, **2000**, 20, 485-98	7.3	83
172	Deuterium metabolic imaging (DMI) for MRI-based 3D mapping of metabolism in vivo. *Science Advances*, **2018**, 4, eaat7314	14.3	82
171	1H NMR studies of glucose transport in the human brain. *Journal of Cerebral Blood Flow and Metabolism*, **1996**, 16, 427-38	7.3	81
170	Detection of [1,6-13C2]-glucose metabolism in rat brain by in vivo 1H-[13C]-NMR spectroscopy. *Magnetic Resonance in Medicine*, **2003**, 49, 37-46	4.4	80
169	Glutamatergic function in the resting awake human brain is supported by uniformly high oxidative energy. *Journal of Cerebral Blood Flow and Metabolism*, **2013**, 33, 339-47	7.3	79
168	Differentiation of glucose transport in human brain gray and white matter. *Journal of Cerebral Blood Flow and Metabolism*, **2001**, 21, 483-92	7.3	79
167	Decrease in GABA synthesis rate in rat cortex following GABA-transaminase inhibition correlates with the decrease in GAD(67) protein. *Brain Research*, **2001**, 914, 81-91	3.7	79
166	Functional energy metabolism: in vivo 13C-NMR spectroscopy evidence for coupling of cerebral glucose consumption and glutamatergic neuronalactivity. *Developmental Neuroscience*, **1998**, 20, 321-30	2.2	76
165	Measurements of the anaplerotic rate in the human cerebral cortex using 13C magnetic resonance spectroscopy and [1-13C] and [2-13C] glucose. *Journal of Neurochemistry*, **2007**, 100, 73-86	6	73
164	Evaluation of cerebral acetate transport and metabolic rates in the rat brain in vivo using 1H-[13C]-NMR. *Journal of Cerebral Blood Flow and Metabolism*, **2010**, 30, 1200-13	7.3	70

163	Direct assessment of hepatic mitochondrial oxidative and anaplerotic fluxes in humans using dynamic 13C magnetic resonance spectroscopy. *Nature Medicine*, **2014**, 20, 98-102	50.5	69
162	Topiramate rapidly raises brain GABA in epilepsy patients. *Epilepsia*, **2001**, 42, 543-8	6.4	69
161	Glutamatergic and GABAergic neurotransmitter cycling and energy metabolism in rat cerebral cortex during postnatal development. *Journal of Cerebral Blood Flow and Metabolism*, **2007**, 27, 1895-907	7.3	66
160	Dynamic shim updating (DSU) for multislice signal acquisition. *Magnetic Resonance in Medicine*, **2003**, 49, 409-16	4.4	66
159	Lactate preserves neuronal metabolism and function following antecedent recurrent hypoglycemia. *Journal of Clinical Investigation*, **2013**, 123, 1988-98	15.9	66
158	Evaluating the gray and white matter energy budgets of human brain function. *Journal of Cerebral Blood Flow and Metabolism*, **2018**, 38, 1339-1353	7.3	64
157	A BOLD search for baseline. *NeuroImage*, **2007**, 36, 277-81	7.9	64
156	[2,4-13 C2]-beta-Hydroxybutyrate metabolism in human brain. *Journal of Cerebral Blood Flow and Metabolism*, **2002**, 22, 890-8	7.3	64
155	Biophysical basis of brain activity: implications for neuroimaging. *Quarterly Reviews of Biophysics*, **2002**, 35, 287-325	7	64
154	Quantitative fMRI and oxidative neuroenergetics. *NeuroImage*, **2012**, 62, 985-94	7.9	63
153	A comparison of (13)C NMR measurements of the rates of glutamine synthesis and the tricarboxylic acid cycle during oral and intravenous administration of [1-(13)C]glucose. *Brain Research Protocols*, **2003**, 10, 181-90		60
152	Validation of 13C NMR measurements of liver glycogen in vivo. *Magnetic Resonance in Medicine*, **1994**, 31, 583-8	4.4	60
151	Utility of Imaging-Based Biomarkers for Glutamate-Targeted Drug Development in Psychotic Disorders: A Randomized Clinical Trial. *JAMA Psychiatry*, **2018**, 75, 11-19	14.5	60
150	15N-NMR spectroscopy studies of ammonia transport and glutamine synthesis in the hyperammonemic rat brain. *Developmental Neuroscience*, **1998**, 20, 434-43	2.2	58
149	Dynamic Shimming of the Human Brain at 7 Tesla. *Concepts in Magnetic Resonance Part B*, **2010**, 37B, 116-128	2.3	57
148	Vigabatrin: effects on human brain GABA levels by nuclear magnetic resonance spectroscopy. *Epilepsia*, **1994**, 35 Suppl 5, S29-32	6.4	57
147	13C NMR relaxation times of hepatic glycogen in vitro and in vivo. *Biochemistry*, **1990**, 29, 6815-20	3.2	57
146	Uniform distributions of glucose oxidation and oxygen extraction in gray matter of normal human brain: No evidence of regional differences of aerobic glycolysis. *Journal of Cerebral Blood Flow and Metabolism*, **2016**, 36, 903-16	7.3	53

145	The contribution of ketone bodies to basal and activity-dependent neuronal oxidation in vivo. *Journal of Cerebral Blood Flow and Metabolism*, **2014**, 34, 1233-42	7.3	53
144	In vivo GABA editing using a novel doubly selective multiple quantum filter. *Magnetic Resonance in Medicine*, **2002**, 47, 447-54	4.4	53
143	In vivo chemical shift imaging of gamma-aminobutyric acid in the human brain. *Magnetic Resonance in Medicine*, **1999**, 41, 35-42	4.4	53
142	Glymphatic System Function in Relation to Anesthesia and Sleep States. *Anesthesia and Analgesia*, **2019**, 128, 747-758	3.9	51
141	In vivo detection and quantification of scalar coupled 1H NMR resonances. *Concepts in Magnetic Resonance*, **2001**, 13, 32-76		49
140	A ketogenic diet increases transport and oxidation of ketone bodies in RG2 and 9L gliomas without affecting tumor growth. *Neuro-Oncology*, **2016**, 18, 1079-87	1	49
139	Cerebral lactate turnover after electroshock: in vivo measurements by 1H/13C magnetic resonance spectroscopy. *Journal of Cerebral Blood Flow and Metabolism*, **1992**, 12, 1022-9	7.3	47
138	Detection and assignment of the glucose signal in 1H NMR difference spectra of the human brain. *Magnetic Resonance in Medicine*, **1992**, 27, 183-8	4.4	47
137	Is there in vivo evidence for amino acid shuttles carrying ammonia from neurons to astrocytes?. *Neurochemical Research*, **2012**, 37, 2597-612	4.6	46
136	Magnetic field homogenization of the human prefrontal cortex with a set of localized electrical coils. *Magnetic Resonance in Medicine*, **2010**, 63, 171-80	4.4	46
135	Hypophosphatemia promotes lower rates of muscle ATP synthesis. *FASEB Journal*, **2016**, 30, 3378-3387	0.9	45
134	In vivo carbon-edited detection with proton echo-planar spectroscopic imaging (ICED PEPSI): [3,4-(13)CH(2)]glutamate/glutamine tomography in rat brain. *Magnetic Resonance in Medicine*, **1999**, 42, 997-1003	4.4	45
133	Blunted rise in brain glucose levels during hyperglycemia in adults with obesity and T2DM. *JCI Insight*, **2017**, 2,	9.9	44
132	Basic principles of metabolic modeling of NMR (13)C isotopic turnover to determine rates of brain metabolism in vivo. *Metabolic Engineering*, **2004**, 6, 75-84	9.7	44
131	Decreased occipital cortical glutamate levels in response to successful cognitive-behavioral therapy and pharmacotherapy for major depressive disorder. *Psychotherapy and Psychosomatics*, **2014**, 83, 298-307	8.4	43
130	Acute effects of vigabatrin on brain GABA and homocarnosine in patients with complex partial seizures. *Epilepsia*, **1999**, 40, 958-64	6.4	43
129	Cerebral metabolism and consciousness. *Comptes Rendus - Biologies*, **2003**, 326, 253-73	1.4	42
128	Linear projection method for automatic slice shimming. *Magnetic Resonance in Medicine*, **1999**, 42, 1082-8	4.4	41

127	Propionate Increases Hepatic Pyruvate Cycling and Anaplerosis and Alters Mitochondrial Metabolism. *Journal of Biological Chemistry*, **2016**, 291, 12161-70	5.4	40
126	Delivery of mesenchymal stem cells in biomimetic engineered scaffolds promotes healing of diabetic ulcers. *Regenerative Medicine*, **2016**, 11, 245-60	2.5	40
125	Caloric restriction impedes age-related decline of mitochondrial function and neuronal activity. *Journal of Cerebral Blood Flow and Metabolism*, **2014**, 34, 1440-3	7.3	40
124	Assessment of Hepatic Mitochondrial Oxidation and Pyruvate Cycling in NAFLD by (13)C Magnetic Resonance Spectroscopy. *Cell Metabolism*, **2016**, 24, 167-71	24.6	40
123	Chronic riluzole treatment increases glucose metabolism in rat prefrontal cortex and hippocampus. *Journal of Cerebral Blood Flow and Metabolism*, **2008**, 28, 1892-7	7.3	38
122	Dynamically shimmed multivoxel 1H magnetic resonance spectroscopy and multislice magnetic resonance spectroscopic imaging of the human brain. *Magnetic Resonance in Medicine*, **2007**, 57, 587-91	4.4	38
121	Neurophysiology of functional imaging. *NeuroImage*, **2009**, 45, 1047-54	7.9	37
120	Proposed cycles for functional glutamate trafficking in synaptic neurotransmission. *Neurochemistry International*, **2008**, 52, 809-25	4.4	37
119	Cerebral pyruvate carboxylase flux is unaltered during bicuculline-seizures. *Journal of Neuroscience Research*, **2005**, 79, 128-38	4.4	37
118	Carbon-13 nuclear magnetic resonance studies of myocardial glycogen metabolism in live guinea pigs. *Biochemistry*, **1984**, 23, 5029-35	3.2	35
117	The human brain produces fructose from glucose. *JCI Insight*, **2017**, 2, e90508	9.9	34
116	Glucose, Lactate, β-Hydroxybutyrate, Acetate, GABA, and Succinate as Substrates for Synthesis of Glutamate and GABA in the Glutamine-Glutamate/GABA Cycle. *Advances in Neurobiology*, **2016**, 13, 9-42	2.1	34
115	Recurrent antecedent hypoglycemia alters neuronal oxidative metabolism in vivo. *Diabetes*, **2009**, 58, 1266-74	0.9	34
114	Increased brain lactate concentrations without increased lactate oxidation during hypoglycemia in type 1 diabetic individuals. *Diabetes*, **2013**, 62, 3075-80	0.9	33
113	Neuronal correlate of BOLD signal fluctuations at rest: err on the side of the baseline. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 10773-4	11.5	32
112	Turnover of human muscle glycogen with low-intensity exercise. *Medicine and Science in Sports and Exercise*, **1994**, 26, 983???991	1.2	32
111	Non-invasive assessment of hepatic mitochondrial metabolism by positional isotopomer NMR tracer analysis (PINTA). *Nature Communications*, **2017**, 8, 798	17.4	31
110	Insights from neuroenergetics into the interpretation of functional neuroimaging: an alternative empirical model for studying the brain support of behavior. *Journal of Cerebral Blood Flow and Metabolism*, **2014**, 34, 1721-35	7.3	30

109	Advances in Imaging Brain Metabolism. *Annual Review of Biomedical Engineering*, **2017**, 19, 485-515	12	29
108	Localized 1H NMR measurements of 2-pyrrolidinone in human brain in vivo. *Magnetic Resonance in Medicine*, **1999**, 41, 889-96	4.4	29
107	Direct carbon versus proton heteronuclear editing of 2-13C ethanol in rabbit brain in vivo: a sensitivity comparison. *Magnetic Resonance in Medicine*, **1990**, 16, 431-43	4.4	28
106	Glutamine-Glutamate Cycle Flux Is Similar in Cultured Astrocytes and Brain and Both Glutamate Production and Oxidation Are Mainly Catalyzed by Aspartate Aminotransferase. *Biology*, **2017**, 6,	4.9	27
105	GABA changes with vigabatrin in the developing human brain. *Epilepsia*, **1999**, 40, 462-6	6.4	27
104	Hippocampal Pathology in Clinical High-Risk Patients and the Onset of Schizophrenia. *Biological Psychiatry*, **2020**, 87, 234-242	7.9	27
103	What have novel imaging techniques revealed about metabolism in the aging brain?. *Future Neurology*, **2014**, 9, 341-354	1.5	26
102	Determination of the glutamate-glutamine cycling flux using two-compartment dynamic metabolic modeling is sensitive to astroglial dilution. *Journal of Cerebral Blood Flow and Metabolism*, **2009**, 29, 108-18	7.3	26
101	The Glycogen Shunt Maintains Glycolytic Homeostasis and the Warburg Effect in Cancer. *Trends in Cancer*, **2017**, 3, 761-767	12.5	24
100	Characterization of cerebral glutamine uptake from blood in the mouse brain: implications for metabolic modeling of 13C NMR data. *Journal of Cerebral Blood Flow and Metabolism*, **2014**, 34, 1666-72	7.3	24
99	Detection of cerebral NAD in humans at 7T. *Magnetic Resonance in Medicine*, **2017**, 78, 828-835	4.4	23
98	In vivo lactate and beta-hydroxybutyrate editing using a pure-phase refocusing pulse train. *Magnetic Resonance in Medicine*, **1998**, 40, 783-8	4.4	23
97	Metabolic control analysis of hepatic glycogen synthesis in vivo. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 8166-8176	11.5	22
96	Cortical substrate oxidation during hyperketonemia in the fasted anesthetized rat in vivo. *Journal of Cerebral Blood Flow and Metabolism*, **2011**, 31, 2313-23	7.3	22
95	Quantitative □mapping for calibrated fMRI. *NeuroImage*, **2016**, 126, 219-28	7.9	21
94	Brain region and activity-dependent properties of M for calibrated fMRI. *NeuroImage*, **2016**, 125, 848-856	7.9	21
93	Neurovascular and Neurometabolic Couplings in Dynamic Calibrated fMRI: Transient Oxidative Neuroenergetics for Block-Design and Event-Related Paradigms. *Frontiers in Neuroenergetics*, **2010**, 2,		21
92	NMR of glycogen in exercise. *Proceedings of the Nutrition Society*, **1999**, 58, 851-9	2.9	21

91	Extracellular pH mapping of liver cancer on a clinical 3T MRI scanner. *Magnetic Resonance in Medicine*, **2020**, 83, 1553-1564	4.4	21
90	Increased brain transport and metabolism of acetate in hypoglycemia unawareness. *Journal of Clinical Endocrinology and Metabolism*, **2013**, 98, 3811-20	5.6	20
89	Protein phosphorylation can regulate metabolite concentrations rather than control flux: the example of glycogen synthase. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 1485-90	11.5	20
88	Homeostasis and the glycogen shunt explains aerobic ethanol production in yeast. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 10902-7	11.5	19
87	In vivo C and H-[C] MRS studies of neuroenergetics and neurotransmitter cycling, applications to neurological and psychiatric disease and brain cancer. *NMR in Biomedicine*, **2019**, 32, e4172	4.4	19
86	Glycemic Variability and Brain Glucose Levels in Type 1 Diabetes. *Diabetes*, **2019**, 68, 163-171	0.9	18
85	Selective proton-observed, carbon-edited (selPOCE) MRS method for measurement of glutamate and glutamine C-labeling in the human frontal cortex. *Magnetic Resonance in Medicine*, **2018**, 80, 11-20	4.4	17
84	Evidence for the importance of measuring total brain activity in neuroimaging. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 5475-6	11.5	16
83	Metabolic demands of neural-hemodynamic associated and disassociated areas in brain. *Journal of Cerebral Blood Flow and Metabolism*, **2016**, 36, 1695-1707	7.3	16
82	Graded image segmentation of brain tissue in the presence of inhomogeneous radio frequency fields. *Magnetic Resonance Imaging*, **2002**, 20, 431-6	3.3	15
81	Studies of metabolic compartmentation and glucose transport using in vivo MRS. *NMR in Biomedicine*, **2001**, 14, 149-60	4.4	15
80	Microdialysate concentration changes do not provide sufficient information to evaluate metabolic effects of lactate supplementation in brain-injured patients. *Journal of Cerebral Blood Flow and Metabolism*, **2016**, 36, 1844-1864	7.3	14
79	High-sensitivity, broadband-decoupled (13) C MR spectroscopy in humans at 7T using two-dimensional heteronuclear single-quantum coherence. *Magnetic Resonance in Medicine*, **2015**, 74, 903-14	4.4	14
78	Brain metabolomic profiles of lung cancer patients prior to treatment characterized by proton magnetic resonance spectroscopy. *International Journal of Clinical and Experimental Medicine*, **2012**, 5, 154-64		14
77	Glycogenolysis in Cerebral Cortex During Sensory Stimulation, Acute Hypoglycemia, and Exercise: Impact on Astrocytic Energetics, Aerobic Glycolysis, and Astrocyte-Neuron Interactions. *Advances in Neurobiology*, **2019**, 23, 209-267	2.1	14
76	Effects of □-Aminobutyric acid transporter 1 inhibition by tiagabine on brain glutamate and □-Aminobutyric acid metabolism in the anesthetized rat In vivo. *Journal of Neuroscience Research*, **2015**, 93, 1101-8	4.4	13
75	Role of ongoing, intrinsic activity of neuronal populations for quantitative neuroimaging of functional magnetic resonance imaging-based networks. *Brain Connectivity*, **2011**, 1, 185-93	2.7	12
74	Dissociation of Muscle Insulin Resistance from Alterations in Mitochondrial Substrate Preference. *Cell Metabolism*, **2020**, 32, 726-735.e5	24.6	10

73	Reevaluation of Astrocyte-Neuron Energy Metabolism with Astrocyte Volume Fraction Correction: Impact on Cellular Glucose Oxidation Rates, Glutamate-Glutamine Cycle Energetics, Glycogen Levels and Utilization Rates vs. Exercising Muscle, and Na/K Pumping Rates. *Neurochemical Research*, **2020**, 45, 2607-2630	4.6	10
72	Functional MRS with J-edited lactate in human motor cortex at 4 T. *NeuroImage*, **2019**, 184, 101-108	7.9	10
71	Neurochemistry Predicts Convergence of Written and Spoken Language: A Proton Magnetic Resonance Spectroscopy Study of Cross-Modal Language Integration. *Frontiers in Psychology*, **2018**, 9, 1507	3.4	10
70	Cellular Origin of [F]FDG-PET Imaging Signals During Ceftriaxone-Stimulated Glutamate Uptake: Astrocytes and Neurons. *Neuroscientist*, **2018**, 24, 316-328	7.6	9
69	N.m.r. studies of muscle glycogen synthesis in normal and non-insulin-dependent diabetic subjects. *Biochemical Society Transactions*, **1991**, 19, 992-4	5.1	9
68	Trajectories of Brain Lactate and Re-visited Oxygen-Glucose Index Calculations Do Not Support Elevated Non-oxidative Metabolism of Glucose Across Childhood. *Frontiers in Neuroscience*, **2018**, 12, 631	5.1	9
67	Response to burgess. *Nature Medicine*, **2015**, 21, 109-10	50.5	7
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