

Edward J. Novotny, Jr.

CURRICULUM VITAE

Edward John Novotny, Jr., M.D.

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Marital Status: Married

Children: None

Citizenship: U.S.A.

EDUCATION:

Undergraduate Education:

B.S. University of California, Irvine
Irvine, CA 92717 Dates: 9/71 to 6/75
Majors: Biology (B.S.)
Chemistry (B.S.)
Cum Laude

Medical Education:

M.D. Saint Louis University Medical School
1402 S. Grand Ave.
Saint Louis, MO 63104 Dates: 8/75 to 5/79

POSTGRADUATE TRAINING:

Internship: 7/79 to 6/80 University of California, Davis Medical Ctr.
2315 Stockton Blvd.
Sacramento, CA 95817

POSTGRADUATE TRAINING (Cont.):

Residencies:

1. 7/80 to 6/81
Pediatrics (PL1 and PL2)
University of California, Davis Medical Ctr.
2315 Stockton Blvd.
Sacramento, CA 95817
2. 7/81 to 6/84
Neurology (Pediatric)
Stanford University Medical Center
Department of Neurology, Rm C338
Stanford, CA 94305

Fellowships:

1. 7/84 to 6/86
Neurology (EEG/Epilepsy)
Stanford University Medical Center
Department of Neurology, Rm C338
Stanford, CA 94305
2. 7/87 to 6/89
Neurology (NMR Spectroscopy)
Yale University, School of Medicine
Department of Neurology, LCI 710
333 Cedar Street
New Haven, CT 06510

ACADEMIC POSTS:

- Physician Specialist:
1984-1986
Stanford University,
Department of Neurology
- Acting Assistant Professor:
1986-1987
Stanford University,
Department of Neurology
- Associate Research Scientist:
1987-1990
Yale University,
Department of Neurology
- Assistant Professor:
1990-2000
Yale University,
Departments of Pediatrics and Neurology
- Associate Director,
Clinical Neurophysiology Lab
(Pediatrics) 1992 - Present
Yale University
Departments of Pediatrics and Neurology
- Director, Pediatric Epilepsy
1992 - Present
Yale University
Departments of Pediatrics and Neurology
- Associate Professor:
2000 to present
Director, Clinical Neurophysiology
Yale University,
Departments of Pediatrics and Neurology

Edward J. Novotny, Jr.

Training Program
2003 to present

Departments of Pediatrics and Neurology

Associate Professor
2003 – present

Yale University
Departments of Pediatrics, Neurology and
Neurosurgery

HOSPITAL APPOINTMENTS:

Attending, Neurology
1984-1987

Stanford University Medical Center

Attending, Neurology
1987-present

Yale-New Haven Hospital

Attending, Pediatrics
1990-present

Yale-New Haven Hospital

PROFESSIONAL AWARDS:

1. Awarded the William Gowers Fellowship in Clinical Epilepsy Research from the Epilepsy Foundation of America for the year 7/1/84 to 6/30/85.
2. Awarded the S. Weir Mitchell Award by the American Academy of Neurology in 1985.
3. Fellow in the Epilepsy Training Program sponsored by the National Institutes of Health awarded to the Department of Neurology at Stanford University, 5-T32-NS07280-01. (7/1/85 to 6/30/86).
4. National Research Service Award from National Institutes of Health for research in the area of biochemistry, "In vivo NMR spectroscopic investigations in epilepsy", at Yale University Department of Neurology. 1 F32 NS08252-01. (8/1/87 to 7/30/89)
5. FIRST Award NIH (NINDS), " In vivo $^1\text{H}/^{13}\text{C}$ NMR Studies of Neonatal seizures" (1R29 NS28790-01). 9/1/90 to 8/31/95.
6. *Best Doctors in America* – Northeast region – 1996, 1998, 1999, 2000
7. Teaching Attending of the year Department of Neurology Residents – 1997-1998

PROFESSIONAL ORGANIZATIONS:

American Academy of Neurology (1982)

S. Weir Mitchell Award (1985); Computers and Neurology Workshop Instructor (1995 – 1997); Epilepsy Section Member (2000 -); Child Neurology Section Member (2000 -).

American Epilepsy Society (1984) - Scientific Program Committee (1995-97), Investigator's Workshop Committee (1998-2000), Technology Committee (2001)

Edward J. Novotny, Jr.

American Clinical Neurophysiology Society (1986) - Scientific Program Committee 1996-1997;
Fellow (1992).
Child Neurology Society (1984) - Junior membership committee 1986-1987;
Research Committee 1990 - 1993; Scientific Program Committee 1995-1999;2000-
2004, Electronic Communications Committee 1997- 2003.
International Society for Magnetic Resonance in Medicine (1987)
International Child Neurology Association (1988)
Society for Pediatric Research (1993) – Scientific Program Committee (Neurology) 2001 - 2004
Society for Neuroscience (1995)

BOARD CERTIFICATION:

American Board of Pediatrics (1/19/1986, #33114)
American Board of Psychiatry and Neurology (Neurology with special qualification in Child
Neurology) (2/1986, #567)
American Board of Clinical Neurophysiology (1989)
American Board of Psychiatry and Neurology (Neurology with special qualification in Clinical
Neurophysiology) (4/1994, #402)

LICENSES:

Physician and Surgeon's License (California, 7/80; Connecticut, 9/87)

RESEARCH EXPERIENCE:

William Gower's Fellowship – Epilepsy Foundation of America -“Investigation of Neonatal
seizures post hypoxic-ischemia” – 7/1/84 – 6/30/85
Fellow, Epilepsy Training Program Stanford University – T32-NS07280-01 (David Prince) 7/1/85
– 6/30/86
Fellow, NMR Spectroscopy – NRSA 1 F32 NS08252-01 “In vivo NMR spectroscopic
investigations in epilepsy”. Yale University 7/1/87 –6/30/89
Principal Investigator - FIRST Award NIH (NINDS), “In vivo ¹H/¹³C NMR Studies of Neonatal
seizures” (1R29 NS28790-01). 9/1/90 to 8/31/95
Principal Investigator - Juvenile Diabetes Foundation - “Brain Glucose Transport in Nondiabetic
and Insulin Dependent Diabetic Subjects Investigated by In Vivo NMR Spectroscopy”,
9/1/91 – 8/31/92.
Principal Investigator - P20NS32578-01 (Ment) “Basic mechanisms of cortical injury--relevance
to IVH”. Project 2 - NMR investigations of Hypoxic ischemic Injury. 9/30/93 – 8/31/96.
Principal Investigator – Epilepsy Foundation of America – “Multinuclear NMR studies of the
Ketogenic Diet in Children.” 7/1/96 – 6/30/97.
Collaborator - 1R01NS31146-01 (Berg, A) “Risk and predictors of intractable epilepsy in
children” – 1/15/93 –1/14/97.
Principal Investigator - M01RR06022-060781 Children's Clinical Research Center Grant -
“Intensive neurodiagnostic monitoring in Pediatric Epilepsy”. 12/1/89 – 11/30/2004.

Edward J. Novotny, Jr.

Investigator - 1 PO1-HD 32573-01 (Haddad) NIH/NCHHD “Hypoxia in Development: Injury and Adaptation Mechanisms” Project 4: Brain Metabolism and Function in Hypoxia. 2/1/95 - 1/31/2004

Investigator - RO1 NS 35918 (Haddad) NIH/NINDS
“Ionic and Metabolic Mechanisms in Hypoxic Neuronal Injury”. 2/1/97-1/31/2002

Principal Investigator - RO1-NS 38175 NIH/NINDS
“Cerebral GABA in Cryptogenic Generalized Epilepsy”. 1/4/99-11/30/2003

Principal Investigator - R21 DA015908 9/27/2002 – 6/30/2005
“NMR Studies of Brain Glutamate Turnover in Development”

Investigator - JDRF - (Rothman, P.I., Project 3) Juvenile Diabetes Research Foundation
6/01/00-5/31/04 “CNS Effects and Prevention of Hypoglycemia in Human Type 1 Diabetes”

Consultant - R01 HL070919 9/3/2002 – 7/31/2006
“Sleep Mechanisms in Children: Role of Metabolism”

Investigator – R01NS 044102 2/1/2003 – 1/31/2008
“Anticipating seizures in epileptic networks”

Investigator - RO1 NS045911 10/2003 – 11/2008
“Childhood Absence Epilepsy: Rx, PK-PD Pharmacogenetics”

PUBLICATIONS:

Abstracts (pre-1990):

1. Sogg RL, Steinman LS, **Novotny EJ**. Childhood Myasthenia. Presented at the meeting of the Fourth International Congress of Neuro-ophthalmology in Hamilton, Bermuda on June 14, 1982.
2. **Novotny EJ**, Sogg RL, Steinman LS. Myasthenia Gravis in Prepubertal Children. Read at the Child Neurology Society Meeting in Salt Lake City, Utah in October, 1982.
3. **Novotny EJ**, Tharp BR, Steinman LS, et al. A Myoencephalopathy associated with Leber's Optic Neuropathy with Nonmendelian Inheritance. Presented at the 36th annual meeting of the American Academy of Neurology in Boston, MA on April 12, 1984. Neurology 34 (Suppl 1):273, 1984.
4. Sogg RL, **Novotny EJ**. A Myoencephalopathy associated with Leber's Optic Neuropathy with Nonmendelian Inheritance (Neuro-ophthalmological features). Presented at the Meeting of the Fifth International Congress of Neuro-ophthalmology in Antwerp, Belgium on May 17, 1984.
5. Sogg RL, **Novotny EJ**. Congenital Arthrogyriposis Multiplex. Presented at the 17th Annual Frank B. Walsh Society Meeting in Baltimore, Maryland on February 23, 1985.
6. **Novotny EJ**, Wallace DC, Singh G, et al. A Neurodegenerative Disorder with Generalized Dystonia: A New Mitochondriopathy? Presented at the 37th annual meeting of the American Academy of Neurology in Dallas, TX on May 1, 1985. Neurology 1985;35 (Suppl 1):273.
7. Coen R, Bejar R, **Novotny EJ**, et al. A Characteristic EEG Pattern in Multifocal Cerebral White Matter Necrosis. Presented at the American Pediatric Society meeting in Washington, D.C. on May 17, 1985.
8. Wallace DC, Singh G, Hopkins LC, **Novotny EJ**. Maternally Inherited Diseases of Man. Presented in September, 1985 in Bandizzi, Italy.
9. **Novotny EJ**, Coen R, Tharp BR, Bejar R and Enzmann D. The Significance of Positive Sharp Sharp Waves in the Electroencephalogram of the Premature Infant. Presented at the 38th annual meeting of the Academy of Neurology in New Orleans on May 1, 1986. Neurology 1986;36(Suppl 1):279.
10. Young RSK, Cowan BE, **Novotny EJ**, and Sena M. How does hypoglycemia affect brain energy metabolism during prolonged neonatal seizures? Ann Neurol 1986;20:434.
11. **Novotny EJ**, Young RSK, Lotspeich L, and Smith D. Cerebellar infarction in childhood: clinical and neuropathological findings. Read at the 15th annual meeting of the Child Neurology Society in Boston, MA in October, 1986.
12. Weinstein S, **Novotny EJ**. Neonatal Metabolic disorders Masquerading As Structural Central Nervous System Anomalies. Ann Neurol 1987;22:406.
13. **Novotny EJ**, Ogino T, Petroff OAC, Prichard JW, Shulman RG. In vivo Metabolism of 2-13C-Ethanol in the Rabbit Brain by Combined Heteronuclear and Homonuclear Editing. Seventh Annual Meeting, Society of Magnetic Resonance in Medicine, August, 1988.
14. Ogino T, **Novotny EJ**, Petroff OAC, Prichard JW, Rothman DL, Shulman RG.

- Approaching perfection in an imperfect system: determination of relaxation times in vivo. Seventh Annual Meeting, Society of Magnetic Resonance in Medicine, August, 1988.
15. Hanstock C, Rothman DL, Shulman R, **Novotny E**, Petroff O, Prichard J. Ethanol observed in human brain by proton magnetic resonance spectroscopy. Seventh Annual Meeting, Society of Magnetic Resonance in Medicine, August, 1988.
 16. Avison MJ, Herskowitz N, **Novotny EJ**, Petroff OAC, Rothman DL, Shulman RG, Prichard JW. Measurement of Cerebral Phenylalanine Concentration in a Rabbit Model of Hyperphenylalanemia. Seventh Annual Meeting, Society of Magnetic Resonance in Medicine, August, 1988.
 17. **Novotny EJ**, Avison MJ, Rothman DL, Seashore MR, Petroff OAC, Herschkowitz N, Prichard JW, and Shulman RG. Detection of phenylalanine in the human brain. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 441.
 18. **Novotny EJ**, Rothman DL, Avison MJ, Petroff OAC, Lantos GL, Prichard JW, and Shulman RG. Determination of cerebral metabolic rates *in vivo* using 1-¹³C-glucose. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 336.
 19. Rothman DL, **Novotny EJ**, Howseman A, Petroff OAC, Lantos GL, Hanstock CC, Shulman GI, Prichard JW, and Shulman RG. ¹H NMR measurement of 4-¹³C-glutamate turnover in the human brain. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 1060.
 20. Rothman DL, Howseman A, **Novotny EJ**, Hanstock CC, Lantos GL, Petroff OACP, Prichard JW, and Shulman RG. Feasibility of proton-observe carbon-decouple editing of glutamate in the human brain. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 372.
 21. Hanstock CC, Rothman DL, Howseman A, **Novotny EJ**, Lantos GL, Petroff OACP, Prichard JW, and Shulman RG. In vivo determination of NAA concentration in the human brain using the proton aspartyl resonance. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 442.
 22. Petroff OAC, **Novotny EJ**, Rothman DL, Avison MJ, Prichard JW, and Shulman RG. Cerebral lactate turnover after electroshock by proton-observe carbon-decouple spectroscopy. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 332.
 23. Prichard JW, Rothman DL, **Novotny EJ**, Petroff OAC, Avison MJ, Howseman A, Hanstock CC, and Shulman RG. Photic stimulation raises lactate in human visual cortex. Eighth annual meeting of the Society of Magnetic Resonance in Medicine (1989), 1071.
 24. **Novotny EJ**, Rothman DL, Avison MJ, Petroff OAC, Lantos G, Prichard JW, Shulman RG. Determination of Cerebral Metabolic Rates *In Vivo* using Stable Isotopically Labeled Glucose. *Ann Neurol* 1989;26:43.
 25. **Novotny EJ**, Petroff OAC, Graham G, Shulman RG, Prichard JW. Quantification of Lactate in the Rabbit Brain in Situ. Abstracts of the Society of Magnetic Resonance in

PUBLICATIONS:

Abstracts:

1. **Novotny EJ**, R. Gruetter, D. L. Rothman, S. Boulware, W.V. Tamborlane, R.G. Shulman. CHRONIC HYPERGLYCEMIA DOES NOT ALTER STEADY-STATE HUMAN BRAIN GLUCOSE CONCENTRATIONS. A ^{13}C NMR STUDY. Abstracts Child Neurology Society Meeting, **Ann Neurol**, 1993;34;467.
2. **Novotny EJ**, Graeme F. Mason, Rolf Gruetter, Douglas Rothman, Kevin L Behar, Robert G. Shulman. DETERMINATION OF THE KREBS CYCLE RATE IN HUMAN BRAIN IN VIVO BY ^{13}C NMR SPECTROSCOPY. Abstracts Child Neurology Society Meeting, **Ann Neurol**, 1993;34;467.
3. **Novotny EJ**, Chen W, Rothman DL, Shulman RG. LOCALIZED ^1H NMR MEASUREMENT OF GLUCOSE CONSUMPTION IN THE HUMAN BRAIN DURING VISUAL STIMULATION. Abstracts Child Neurology Society Meeting, **Ann Neurol**, 1993;34;448.
4. Masuoka LK, Anderson AW, Gore JC, McCarthy G, **Novotny EJ**. Activation of visual cortex in occipital lobe epilepsy using functional magnetic resonance imaging. Abstracts American Epilepsy Society, **Epilepsia** 35 (Suppl 8):86, 1994
5. **Novotny EJ**, Masuoka LK, Anderson AW, Gore JC, McCarthy G, Spencer D. Functional magnetic resonance imaging (fMRI) in Pediatric Epilepsy. Abstracts American Epilepsy Society, **Epilepsia** 35 (Suppl 8):36, 1994.
6. Berg AT, Shinnar S, **Novotny EJ**. Intractable Epilepsy in Childhood. Abstracts American Epilepsy Society, 1994.
7. Levy S, Testa F, Chiappa KH, **Novotny EJ**, Berg AT. Comparison of Digital and conventional Electroencephalogram (EEG) Interpretation. Abstracts American Epilepsy Society, 1994.
8. Chen W, **Novotny EJ**, Boulware SD, Rothman DL, Mason GF, Zhu X.-H, Blamire A, Prichard JW, Shulman RG. Quantitative measurements of regional TCA cycle flux in visual cortex of human brain using ^1H - $\{^{13}\text{C}\}$ NMR spectroscopy. Abstracts Society of Magnetic Resonance, 1994.
9. Chen W, **Novotny EJ**, Rothman DL, Shulman RG. Simultaneous measurements of regional C4 glutamate from two localized volumes in human brain using ^1H - $\{^{13}\text{C}\}$ NMR spectroscopy. Abstracts Society of Magnetic Resonance, 1994.
10. **Novotny EJ**, Ariyan C, Rothman DL, Haddad GG, Mason G, Lai JC, Behar KL. NMR Spectroscopic Studies of the Ontogeny of Cerebral Glucose Metabolism in the Rat. SMR Workshop on Advances in Physiological Chemistry by In Vivo NMR. Woods Hole, MA, March, 1995.
11. **Novotny EJ**, Mason GF, Gruetter R, Rothman D, Chen W, Behar KL, Prichard J, Boulware S, Zhu X-H, Shulman RG. Determination of Krebs cycle, glutamine synthesis and amino acid turnover in vivo by ^{13}C NMR spectroscopy. International Society for Neurochemistry, **J Neurochem** 1995;65(Suppl):S206.
12. **Novotny EJ**, Ariyan C, Rothman DL, Haddad GG, Mason G, Lai JC, Behar KL. NMR Spectroscopic Studies of the Ontogeny of Cerebral Glucose Metabolism in the Rat. Society of Magnetic Resonance, 1995.

13. **Novotny EJ**, Ariyan C, Behar KL. Adaptive mechanisms in developing brain: III. Metabolism. *Ann Neurol* 1995;38:533.
14. Ment LR, Haddad GG, Madri JA, **Novotny EJ**, Schwartz ML, Stewart WB. Adaptive mechanisms in developing brain: I. Neuropathology. *Ann Neurol* 1995;38:521.
15. **Novotny EJ**, Ariyan C, Akiyama*Y, O'Reilly J P, Behar KL, Haddad GG. Comparison of the ontogeny of brain oxidative metabolism *in vivo* vs *in vitro*: an NMR spectroscopic study. Society for Neuroscience, 25th Annual Meeting, San Diego, CA 1995.
16. **Novotny EJ**, Rothman DL, Assaf B. Cerebral amino acid levels in childhood genetic epilepsies. *Neurology* 46(2 (Suppl)): A166, 1996.
17. Assaf BA, Rothman DL, **Novotny EJ**. Cerebral amino acid levels in juvenile myoclonic epilepsy. *Neurology* 46(2 (Suppl)): A446, 1996.
18. **Novotny EJ**, Rothman DL. Altered amino acid levels in pediatric epilepsies. International Society for Magnetic Resonance in Medicine. Fourth Scientific Meeting. New York, NY. April, 1996. p. 132.
19. Rothman DL, Behar KL, Mattson RH, Prichard JW, **Novotny EJ**, Petroff OAC. Homocarnosine levels are elevated in epileptic patients taking vigabatrin: a novel measure of cortical pH. International Society for Magnetic Resonance in Medicine. Fourth Scientific Meeting. New York, NY. April, 1996. p. 130.
20. **Novotny EJ**, Matalon R, Hwang J-H, Rothman DL. Brain amino acids in aspartoacylase II deficiency. International Society for Magnetic Resonance in Medicine. Fourth Scientific Meeting. New York, NY. April, 1996. p. 311.
21. Assaf B, Rothman DL, Mattson RH, **Novotny EJ**. Cerebral GABA levels in sporadic and familial juvenile myoclonic epilepsy. International Society for Magnetic Resonance in Medicine. Fourth Scientific Meeting. New York, NY. April, 1996. p. 963
22. **Novotny EJ**, Rothman DL. Observation of Cerebral Ketone Bodies by Proton NMR Spectroscopy. *Ann Neurol*, 40:285, 1996.
23. **Epstein RW**, Anderson AW, Novotny EJ, Skudlarski P, Gore JC. Asymmetries in visual function in occipital lobe epilepsy: Detection with functional MR imaging. *RADIOLOGY* 201: 24-24, Suppl. S NOV 1996
24. **Novotny EJ**, Rothman DL. Cerebral Glutamate and γ -aminobutyric Acid in Pediatric Epilepsy.
25. **Novotny EJ**, Chen J, Rothman DL. Alterations in cerebral metabolism with the ketogenic diet. *Epilepsia*, 38:147, 1997.
26. Hyder F, Rothman DL, Shevell M, **Novotny EJ**. Cerebral GABA in pediatric epilepsy. *Epilepsia*, 38:127-8, 1997.
27. Varelas P, Cardoza C, **Novotny EJ**, Levy SL, Testa F. Diagnostic utility of long-term video/EEG monitoring in children. *Epilepsia*, 38: 220, 1997.
28. Bronen RA, Fulbright RK, Spencer SS, Kim JH, Spencer DD, Novotny EJ Balloon cell focal cortical dysplasia of Taylor: A forme fruste of tuberous sclerosis? *Radiology* 205: 773-773, Suppl. 1997
29. Pavlakis SG, **Novotny EJ**, Hyder F, Rothman D Brain gamma-aminobutyric acid glutamate in pyridoxine-dependent seizures *Ann Neurol*, 44:B19, 1998
30. **Novotny EJ**, Hyder F, Behar KL, Petroff OAC, Rothman DL. Alterations in Cerebral

- GABA and Glutamate in Human epilepsy. Society for Neuroscience Abstracts, 23:816, 1997.
31. **Novotny EJ**, Hyder F, Mason G, Rothman DL. Cerebral GABA in Childhood Generalized Epilepsy. Society for Neuroscience Abstracts, 25:602, 1999.
 32. **Novotny EJ**, Hyder F, Mason G, Rothman DL. Cerebral GABA in Childhood Generalized Epilepsy. American Epilepsy Society Proceedings. Epilepsia 1999 40 (Suppl 7): 125
 33. **Buerstette CR, Behar KL, Novotny EJ, White BK, Lai JCK** Chronic postnatal hypoxia selectively decreases KGDHC activities in rat brain regions. FASEB J. 13: (5) A1100-A1100, Part 2, Suppl. S MAR 15 1999
 34. **Novotny EJ**, Hyder F, Mason G, Rothman DL. Cerebral GABA in Pediatric Epilepsy. Abstracts of Pediatric Academic Society Meeting May 2000.
 35. Studholme C, **Novotny E**, Stokking R, Duncan JS, Zubal IG, Spencer D. Alignment of Functional Data Acquired Before And After Intra-Cranial Electrode Implantation Using Non-Rigid Anatomical MRI Registration. International Society for Magnetic Resonance in Medicine. Eighth Scientific Meeting. Denver Apr 2000 p585.
 36. **Novotny EJ**, Hyder F, Mason G, Rothman DL. **Observation of valproic acid in human brain by proton MRS.** Epilepsia 2000 41 (Suppl).
 37. Teague B, Wilson KG, **Novotny EJ**. Behavioral training in a mock scanner improves success of diagnostic imaging in pediatric epilepsy patients. Epilepsia 2000 41 (Suppl)
 38. I. Kida; F. Hyder; **E.J. Novotny**, W. Abi-Saab; K.L. Behar. Voltage-gated sodium channels and glutamate release underlie bold functional MRI response to forepaw stimulation in the rat. Society for Neuroscience Abstracts, 136.1, 2000
 39. **Novotny EJ**, Bara-Jiminez W, Hallett M, Pagan F, Boudreau F, Mason G, and Rothman DL **Cerebral GABA in Lafora disease** Society for Neuroscience Abstracts, 2001.
 40. White BK, Buerstette CR, Behar KL, **Novotny EJ**. Differential effects of chronic hypoxia on glycolytic and tricarboxylic acid cycle enzymes in developing brain FASEB J 15 (4): A562-A562 Part 1 MAR 7 2001
 41. Singh SP, **Novotny EJ**, Nguyen DK, Thompson J, Spencer D, Spencer S. Surgical outcome in frontal lobe epilepsy: On the basis of pathology and region NEUROLOGY 58 (7): A51-A51 Suppl. 3 APR 9 2002
 42. Hal Blumenfeld MD, PhD, Susan Vanderhill, LeBron Paige MD, Maria Corsi, Edward J. Novotny, Jr. MD, I. George Zubal PhD and Susan S. Spencer MD. IMAGING CORTICAL AND SUBCORTICAL NETWORKS IN HUMAN TEMPORAL LOBE SEIZURES. Epilepsia 43 (Suppl 7) 310, 2002
 43. Gibson KM, Gupta M, Callan M, Senephansiri H, Polinsky M, Grompe M, **Novotny EJ**, Pearl P, Jansen EEW, Bakkali A, Jakobs C. Abnormal GABA/glutamine metabolism in succinic semialdehyde dehydrogenase (SSADH) deficiency, an epilepsy syndrome with elevated CNS. AMERICAN JOURNAL OF HUMAN GENETICS 2002; 71 Suppl. S (4): 52
 44. Trübel H, Herman P, Maciejewski P, Novotny EJ, Hyder F. Selective brain cooling: temperature changes during hypercapnia and seizure activity. Brain 03 XXIst Meeting International Society for Cerebral Blood Flow and Metabolism 7/1/2003, Calgary, CA
 45. Pearl PL, **Novotny EJ**, Acosta MT, Jakobs C, Gibson KM. Clinical and Metabolic Investigations Offer New Insights into Pathophysiology of SSADH Deficiency. Child

- Neurology Society 10/4/2003, Miami, FL, ANN NEUROL 2003;54(Suppl. 7): S107-S107.
46. **Novotny EJ**, de Graaf R, Mason G, Appel M, Gibson KM, Pearl P, and Rothman DL. Brain GABA in SSADH deficiency Child Neurology Society 10/4/2003, Miami, FL, ANN NEUROL 2003;54(Suppl. 7): S106-S107
 47. McNally, KA, Vanderhill, S, Paige AL, Doernberg S, Chung R, Adamiak K, **Novotny EJ**, Zubal, IJ, Spencer S, Blumenfeld H. EXCITATORY AND INHIBITORY NETWORK INTERACTIONS DURING LOSS OF CONSCIOUSNESS IN TEMPORAL LOBE EPILEPSY. American Epilepsy Society, Boston, MA 12/2003

Book Chapters:

1. Wallace DC, Singh, Hopkins LC, **Novotny EJ**. Maternally Inherited Diseases in Man. In: Achievements and Perspectives of Mitochondrial Research Vol. II: Biogenesis. Quagliariello E et al. (eds) Elsevier Science Publishers, Amsterdam. 1985:427-436.
2. **Novotny EJ**. Hypoxic-Ischemic Encephalopathy. In: Fetal and Neonatal Brain Injury: Mechanisms, Management, and the Risk of Malpractice. Stevenson, DK and Sunshine, P. (eds) B. C. Decker, Inc. Philadelphia (1989) Chapt 10, 113-122.
3. **Novotny EJ**. Hereditary Secondary Dystonias. In: Handbook of Clinical Neurology, Vol 15 (59): Diseases of the Motor System. Vinken PJ, Gruyn GW, Klawans HL, de Jong JMBV (eds). Elsevier Science Publishers B.V., Amsterdam, (1991) Chapt 20, 339-349.
4. Laxer KD, Rowley HA, **Novotny EJ**, Gates JR, Sato S, Sutherling W, Elger CE, Ebersole JS, Stefan H. Experimental Technologies. In: Surgical Treatment of Epilepsies. Engel J (ed). Raven Press, New York, (1993) Chapt 23, 291-308.
5. Kain Z, **Novotny EJ**, Lister G. Case 4. In: Case Studies in Pediatric Intensive Care. Rogers 888MC, Helfaer MA. (eds). Williams and Wilkens, Baltimore. (1993) 21-28.
6. Gruetter R, **Novotny EJ**, Boulware SD, Rothman DL, Mason GF, Shulman GI, Tamborlane WV, Shulman RG. Non-invasive Measurements of the Cerebral Steady State Glucose Concentration and Transport in Humans by ¹³C Nuclear Magnetic Resonance. In: Frontiers in Cerebral Vascular Biology: Transport and its Regulation. Drewes LR, Betz AL (eds) Plenum Press, New York. 1993, 35-40.
7. **Novotny EJ**. Neonatal Seizures. In: Principles and Practice of Pediatrics. Oski FA, DeAngelis CD, Feigin RD, McMillan JA, Warshaw JB (eds). Second Edition. J. B. Lippincott, Inc. Philadelphia 1994, 357-362.
8. **Novotny EJ**. Cerebral Blood Flow and Metabolism in Hypoxia. In: Tissue Oxygen Deprivation: From Molecular to Integrated function. Haddad GG, Lister G, L'Enfant C (eds) Marcel Dekker, New York 1996, 653-668.
9. Anderson GM, **Novotny EJ**, Shaywitz BA. Evaluation of Seizures. In: The Clinical Evaluation of a Food Additive: Assessment of Aspartame. Tschanz C, Butchko HH, Stargel WW, Kotsonis FN (eds). CRC Press, New York 1996, 205-216.
10. **Novotny EJ**. Neonatal Seizures. In: Principles and Practice of Pediatrics. Oski FA, DeAngelis CD, Feigin RD, McMillan JA, Warshaw JB (eds). Second Edition. J. B. Lippincott, Inc. Philadelphia 1999, 240-245.

11. **Novotny EJ**, Rothman D, Tamborlane W Hypoglycaemia and the child's brain In: Genetic Insights in Paediatric Endocrinology and Metabolism. O'Rahilly S and Dunger DB (eds). BioScientifica, Ltd. Bristol, UK 1999, 31-39.
12. Spencer SS, **Novotny E**, de Lanerolle N, Kim J. Mesial temporal sclerosis: electroclinical and pathological correlations and applications to limbic epilepsy in childhood. In Limbic Seizures in Children, G. Avanzini, A. Beaumanoir & L. Mira (eds.) John Libbey & Company, Ltd. London, UK. 2001 pp 41-54

Electronic Publications:

1. Rothman DL, **Novotny EJ**. MRS Studies of the role of the glutamate neurotransmitter cycle in the cerebral cortex response to hypoglycemia <http://www.jdrf.org/research/workshop090800.pdf>. 2001 p 23.
2. **Novotny EJ**, Rothman DL, Tamborlane WV. Relation of hypoglycemia to epileptogenesis. <http://www.jdrf.org/research/workshop090800.pdf>. 2001 p 30.

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3. **Novotny EJ**, Urich H. The Coincidence of Encephalofacial Angiomatosis and Neurocutaneous Melanosis. **Clin Neuropathol** 1986;5:246-251.
4. **Novotny EJ**, Urich H. The Brain in Partial Trisomy 18(18q+). A case report. **J Child Neurol** 1987;2:1944.
5. **Novotny EJ**, Tharp BR, Coen RW, Bejar R, Enzmann D, Vaucher YE. The Significance of Positive Rolandic Sharp Waves in the Electroencephalogram of the Premature Neonate. **Neurology** 1987;37:1481-1486.
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7. Young RSK, Cowan BE, Petroff OAC, **Novotny EJ**, Dunham SL, Briggs RW. In Vivo ³¹P and in Vitro ¹H Nuclear Magnetic Resonance Study of Hypoglycemia during neonatal seizures. **Ann Neurol** 1987;22:622-628.
8. Petroff OAC, Young RSK, Cowan BE, **Novotny EJ**. ¹H Nuclear Magnetic Resonance Spectroscopy Study of Neonatal Hypoglycemia. **Pediatr Neurol** 1988;4:31-4.
9. **Novotny EJ**. Arthrogryposis Associated with Connatal Pelizaeus-Merzbacher Disease: Case Report. **Neuropediatr** 1988;19:221-223.
10. Young RSK, Chen B, Petroff OAC, Cowan BE, **Novotny EJ**, Gore JC, Wong M, Zuckerman K. The effect of diazepam on neonatal seizure: In vivo ³¹P and ¹H NMR Study. **Pediatr Research** 1989;25:27-31.
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12. Petroff OAC, **Novotny EJ**, Ogino T, Avison M, Prichard JW. In Vivo measurements of ethanol concentration in rabbit brain by H-1 magnetic resonance spectroscopy. **J of Neurochem** 1990;54;1188-1195.
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 15. **Novotny EJ**. Epileptic Syndromes and Seizures in Infants. **Seminars in Neurology** 1990;10;366-379.
 16. **Novotny EJ**. Seizures and other Abnormal Behaviors in the Newborn. **Resident and Housestaff Physician** 1990;36;71-74.
 17. **Novotny EJ**, Ogino T, Rothman DL, Petroff OAC, Prichard JW, Shulman RG. Direct carbon versus proton heteronuclear editing of 2-¹³C ethanol in rabbit brain in vivo: A sensitivity comparison. **Magnetic Resonance in Medicine** 1990;16;431-443.
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Manuscripts in preparation:

1. **Novotny EJ**, R. Gruetter, D. L. Rothman, S. Boulware, W.V. Tamborlane, R.G. Shulman. Chronic hyperglycemia does not alter steady-state human brain glucose concentrations. A ^{13}C NMR study.
2. **Novotny EJ**, Prichard JW, Petroff OAC, Shulman RG, Ogino T, Rothman DL. In vivo determination of glucose oxidation and turnover of the brain glutamate pool in the rabbit brain using 1- ^{13}C -glucose.
3. **Novotny EJ**, D. L. Rothman. Cerebral GABA in Pediatric Epilepsy
4. **Novotny EJ**, D. L. Rothman. Elevated Cerebral Glutamate in Human Epilepsy
5. **Novotny EJ**, Bronen R., D. L. Rothman. Proton NMR Spectroscopy in Hemimegalencephaly

Invited Lectures:

1. Genetic Control of Mitochondrial Function in Human Disease -- Presented at the Child Neurology Society Meeting in Memphis, TN on October 11, 1985.
2. Normal Development of the Human Electroencephalogram -- Presented at the annual meeting of the Western Society of EEG Technologists on November 7, 1985.
3. NIMH, Investigation of Cerebral Metabolism with NMR Spectroscopy. Oct, 1991
4. Society of Pediatric Research /American Pediatric Society -- Featured Speaker Presentation Metabolism and Diabetes May, 4, 1992.
5. Houston Epilepsy Association - Functional Imaging in the Evaluation of Epilepsy - May 16, 1992.
6. Boston Children's Hospital - Cerebral amino acid turnover studied by NMR spectroscopy March 1993.
7. Montreal Neurological Institute - Killiam Lecture - 12/14/93
8. Montreal Children's Hospital -- Applications of Multinuclear magnetic resonance spectroscopy to investigations of cerebral metabolism -- 12/14/93
9. American EEG Society Annual Meeting - Moderator - Quest for the Source: Multidisciplinary Approaches to Functional Imaging - Chicago, IL 9/20/94.
10. International Society for Neurochemistry - Kyoto, Japan - 7/7/95

11. International Symposium on Neonatal Hypoglycemia - Kobe, Japan - 11/18/95.
12. Will Foundation Conference on Glucose Transporter Deficiency - 11/8-9/96.
13. United Leukodystrophy Foundation - Scientific Session - 7/11/97.
14. ADA Symposium on Hypoglycemia - Albuquerque, NM - 9/21/97.
15. International Symposium on Hypoglycemia in Infancy and Childhood - London, England - 11/14/97.
16. Child Neurology Society – Symposium on Non-invasive Neuroimaging - Montreal, Canada 10/23/98.
17. Symposium on Genetic Insights in Paediatric Endocrinology & Metabolism – Cambridge, England. 12/13-15/1998.
18. American Epilepsy Society – Brain Imaging Techniques in Children with Epilepsy – Orlando, FL. 12/3/99.
19. NIH workshop NINDS - NIRS as a Cerebral Function Monitor in the neonate. Washington, DC. 5/5/1999.
20. NIH workshop NIAAA Ketone bodies as therapy for brain disorders Washington, DC. 5/5/2000.
21. International Conference on Developmental Cerebral Blood Flow and Metabolism, Hershey, PA. 6/8 –6/11/2000.
22. NIH workshop NIDDK/JDF – Hypoglycemia and the Brain. Washington, DC. 9/7/2000. <http://www.jdrf.org/research/workshop090800.pdf>.
23. Second International Conference on Neuroimaging in Epilepsy, Birmingham, AL. 10/2000.
24. 17th International Diabetes Federation Congress – Mexico City, Mexico 11/5 –10/2000.
25. THIRTY-FOURTH ANNUAL WINTER CONFERENCE ON BRAIN RESEARCH, Steamboat Springs, CO. January 20-27, 2001
26. Ketogenic diet Workshop – Pediatric Epilepsy Research Center Seattle WA Feb 2001
27. New England Regional Genetics Group, November 27, 2001, New Hampshire. Neurological manifestation of Mitochondrial Disorders
28. 3rd Annual Rett Syndrome Symposium, Baltimore MD June 17-19, 2002. Magnetic Resonance Spectroscopy of neurotransmitters in the developing nervous system.
29. Pediatric Epilepsy Advances- Cleveland Clinic Foundation, “MRS in Pediatric Epilepsy”, May 2002, Cleveland, OH.
30. Developmental Brain Metabolism by C13 MRS - C13 NMR Society of Japan – Tokyo University, Tokyo, Japan 11/15/2002
31. MRS in Pediatric Neurological Disorders – National Center of Neurology and Psychiatry, Tokyo, Japan, 11/17/2002
32. Advances in Pediatric Epileptology – Dokkyo University, Tochigi, Japan, 11/19/2002
33. MRS in Pediatric Neurological Disorders – Japanese Child Neurology Society Osaka, Japan, 11/21/2002
34. Neuroimaging Insights on Normal Development and Neurologic Disease: Principles and Applications “MR Spectroscopy” - **Symposium IV 31st Annual Meeting of the Child Neurology Society** – Washington DC, 10/10/2002
35. Developmental Neuroimaging – Neurology Grand Rounds - Children’s Hospital of Boston/Longwood Neurology – Boston, MA, 12/11/2002

36. Developmental Neuroimaging – Neurology Grand Rounds – UTSW Medical Center
Dallas, TX – 4/9/2003

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Ref Type : Thesis/Dissertation

Ref ID : 3414

Title : Processing strategies for functional magnetic resonance imaging of the visual system in occipital lobe epilepsy

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Dipole localization of the human epileptic focus
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Dipole localization of the human temporal lobe focus
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Clinical neurophysiological evaluation of Diabetes
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Localization of slow wave potentials in human neurological disorders
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