Curriculum Vitae

Robert P Turner MSCR

Name: **Robert ('Rusty') P Turner, MD, MSCR, BCN, QEEGD**

Network Neurology Health LLC, Charleston SC
Associate Professor of Clinical Pediatrics, Medical University of South Carolina, Charleston SC
Associate Professor of Clinical Pediatrics & Neurology, Univ. of South Carolina School of Medicine, Palmetto Health Prisma Health Children's Hospital, Columbia SC
Dept of Pediatrics Community Faculty, Bon Secours Roper-St Francis Hospital System, Charleston SC
Associate Researcher, MIND Research Institute, Irvine CA

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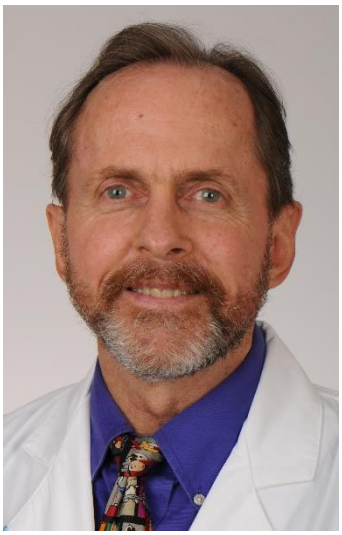

Citizenship and/or Visa Information: Citizen of the United States of America

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EDUCATION:

Institution/Location:	Dates:	Degree/Fields of Study:
Hastings College 710 Turner Avenue Hastings NE 68901 Phone: 402.463.2402; www.Hastings.edu	1976.08.01 1978.05.30	Emphasis: Music Theory; Piano Performance Emphasis: French, German, Spanish
University of Nebraska at Omaha (UNO) 6001 Dodge Street Omaha NE 68182 Phone: 402.554.2800; www.UNOmaha.edu	1978.08.01 1980.05.10	**Bachelor of Arts with Honors (BA)** Major: General Science Graduation Date: 1980.05.10
Univ of Nebr at Omaha College of Graduate Studies 6001 Dodge Street Omaha NE 68182 Phone: 402.554.2800; www.UNOmaha.edu/graduate-studies	1980.07.01 1984.06.30	Master of Music in Piano Performance (non-degree) Emphasis: Piano Performance and Music Theory
University of Nebraska Medical Center (UNMC) 42nd and Emile Omaha NE 68198 Phone: 402.559.4000; www.UNMC.edu	1980.07.01 – 1984.05.13	**Doctor of Medicine (MD)** Graduation Date: 1984.05.13
Medical University of South Carolina College of Graduate Studies (MUSC) 68 President Street, BE 101 Charleston SC 29425 Phone: 843.792.2300; www.GradStudies.MUSC.edu	2001.07.01 – 2003.05.16	**Master of Science in Clinical Research (MSCR)** Graduation Date: 2003.05.16
Columbia Biblical Seminary (CBS) 7435 Monticello Road Columbia SC 29203 Phone: 800.777.2227; www.Seminary.CIU.edu	2003.12.01 – 2005.12.31	Master of Divinity in Academic Studies (non-degree) Emphasis: Hebrew, Greek, Aramaic/Syriac

POST-GRADUATE TRAINING:

INTERNSHIP (Pediatrics):

Location:	Dates:	Field of Study:
University of Nebraska Medical Center (UNMC) 42nd and Emile Omaha NE 68198 Phone: 402.559.4000 Director: Robert Nelson MD www.UNMC.edu	1984.07.01 - 1985.06.30	Pediatrics (Internship)

RESIDENCY (Pediatrics):

Location:	Dates:	Field of Study:
University of Nebraska Medical Center (UNMC) 42nd and Emile Omaha NE 68198 Phone: 402.559.4000 Director: Robert Nelson MD www.UNMC.edu	1985.07.01 - 1986.06.30	Pediatrics (Residency)

FELLOWSHIP (Neurology):

Location:	Dates:	Fields of Study:
Medical College of Virginia Hospitals (MCV) 1250 East Marshall Street Richmond VA 23219 Phone: 804.828.0445 Director: Edwin Myer MD www.VCUHealth.org	1986.07.01 - 1989.06.30	Child and Adult Neurology EEG and Clinical Neurophysiology

FELLOWSHIP (Neurophysiology):

Location:	Dates:	Fields of Study:
Medical College of Virginia Hospitals (MCV) 1250 East Marshall Street Richmond VA 23219 Phone: 804.828.0445 Directors: William Campbell MD, Robert Leshner MD www.VCUHealth.org	1989.07.01 - 1990.06.30	EMG and Neuromuscular Diseases EEG and Evoked Potentials Clinical Neurophysiology

SPECIALTY / BOARD CERTIFICATIONS:	**Date Certified (Diplomate)**:
(1) National Board of Medical Examiners (NBME) (Certificate **220**)	**1985.07.01** (no expiration)
(2) American Board of Psychiatry and Neurology (ABPN) (Certificate **758**) With Special Qualification in **Child Neurology**	**1990.10.30** (no expiration) **MOC Current 2024.01.01**
(3) American Board of **Pediatrics** (ABP) (Certificate **45795**)	**1990.11.14** (Exp: 1997.11.14)
(4) American Board of **Electrodiagnostic Medicine** (ABEM) (Certificate **1532**)	**1991.04.14** (no expiration)
(5) American Board of **Clinical Neurophysiology** (ABCN)	**1991.12.16** (no expiration)
(6) American Society of **Neurorehabilitation** (Certified Member Certificate **220**)	**1992.09.04** (no expiration)
(7) American Board of Psychiatry and Neurology (ABPN) (Certificate **205**) With Added Qualification in **Clinical Neurophysiology**	**1992.03.31**; Recertified **2003**; (Exp: 2013.03.31)
(8) American Board of Psychiatry and Neurology (ABPN) (Certificate **24**) With Added Qualification in **Neurodevelopmental Disabilities**	**2001.04.03** (Exp: 2011.12.31)
(9) Biofeedback Certification International Alliance (BCIA) (Certificate **5639**) Certification in **Neurofeedback** (BCN)	**2013.06.08** (Exp: 2024.12.31)
(10) QEEG Certification Board (Certificate **D089**) Certification in **Quantitative Electroencephalography** (QEEG-D)	**2013.09.20** (Exp: 2024.01.01)
(11) American Board of Psychiatry and Neurology (ABPN) (Certificate **447**) With Added Qualification in **Epilepsy**	**2013.10.28** (Exp: 2023.10.28) **MOC Current 2024.01.01**

LICENSURE:	**Location**	**License Number:**	**Issue Date:**	**Expiration:**
	South Carolina	**19821**	**1997.11.19**	**2023.06.30** (active)
	Minnesota	67657	2020.06.25	2022.12.31 (active)
	Nebraska	16985	1985.06.03 / 2020.08.03	2023.10.01 (active)
	North Carolina	2021-03019	2021.10.08	2022.12.09 (active)
	Pennsylvania	469759	2020.02.10	2022.12.31 (active)
	Tennessee	60490	2020.05.28	2023.12.31 (active)
	Texas	T7067	2022.04.29	2023.12.31 (active)
	Virginia	44435	1989.09.01	2006.12.31 (inactive)
	Washington	61012819	2020.04.06	2022.12.09 (active)

CONTROLLED SUBSTANCE REGISTRATIONS

DEA:	**Location**	**Registration Number:**	**Schedule:**	**Issue Date:**	**Expiration:**
	SC	BT6839887	2,2N,3,3N,4,5	2001.02.07	2023.11.30
	NE	FT9615343	2,2N,3,3N,4,5	2020.08.11	2023.11.30
	WA	FT1197195	2,2N,3,3N,4,5	2022.02.02	2024.11.30

DHEC:	**Location**	**Registration #:**	**Schedule:**	**Issue Date:**	**Expiration:**
	SC	20-19821	2,2N,3,3N,4,5	2000.05.23	2022.10.01

MILITARY SERVICE: None

FACULTY APPOINTMENTS: 1990-Present

Years:	Rank:	Institution:	Departments:
1990.07.01 – 1993.06.30	Assistant Professor	Medical College of Virginia Hospitals 1250 East Marshall Street Richmond VA 23219; Phone: 804.762.6161	Neurology and Pediatrics
1993.07.01 – 1997.06.30	Clinical Assistant Professor	Medical College of Virginia Hospitals 1250 East Marshall Street Richmond VA 23219; Phone: 804.762.6161	Neurology and Pediatrics
1997.07.01 – 2000.06.30	Clinical Assistant Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurology and Pediatrics
2000.07.01 – 2004.06.30	Assistant Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurology, Pediatrics, & Neurosurgery
2004.07.01 – 2010.06.30	Associate Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences, Pediatrics, Biostatistics, Bioinformatics, & Epidemiology
2010.07.01 – 2012.06.30	Assoc. Professor with Tenure	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences, Pediatrics, and Biostatistics & Epidemiology
2012.07.01 – 2013.06.30	Assoc. Professor with Tenure	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences, Pediatrics, and Public Health Sciences
2003.07.01 – To Present	Associate Researcher	MIND Research Institute 111 Academy, Suite 100 Irvine CA 92617 Phone: 949.345.8700	Research Division, Irvine CA
2013.07.01 – 2014.06.30	Associate Clinical Professor	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Neurosciences
2014.02.01 – To **Present**	**Associate Professor of Clinical Pediatrics & Neurology**	**University of South Carolina School of Medicine (USC-SOM)** Department of Pediatrics 9 Medical Park, Suite 200A Columbia SC 29203 Phone: 803.434.7950	**Pediatrics and Neurosciences**
2020.03.01 – To **Present**	**Associate Professor of Clinical Pediatrics**	**Medical University of South Carolina** **Shawn Jenkins Children's Hospital** Department of Pediatrics Division of Pediatric Neurology 125 Doughty Street, Suite 550, MSC 561 Charleston SC 29425 Phone: 843.792-3307/6004	**Pediatrics** Pediatric Neurology Hospitalist

LOCUM TENENS / CONSULTING WORK EXPERIENCE (Inpatient Consulting Attending Pediatric Neurologist/Epileptologist):

2020:

2020.04.27 – 2020.05.04	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.05.18 – 2020.05.25	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.06.15 – 2020.06.22	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.07.13 – 2020.07.20	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.08.10 – 2020.08.17	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.08.31 – 2020.09.07	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.09.24 – 2020.10.02	Gillette Children's Hospital & Specialty Healthcare 200 University Avenue E, St Paul MN 55101
2020.10.05 – 2020.10.12	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.10.26 – 2020.11.02	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.11.23 – 2020.11.25	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.11.30 – 2020.12.07	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2020.12.28 – 2020.12.30	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425

LOCUM TENENS / CONSULTING WORK EXPERIENCE (Inpatient Consulting Attending Pediatric Neurologist/Neurologist):

2021:

2021.01.04 – 2021.01.11	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.01.22 – 2021.01.29	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2021.02.01 – 2021.02.08	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.02.19 – 2021.02.26	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2021.03.01 – 2021.03.08	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.03.19 – 2021.03.26	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2021.03.39 – 2021.04.05	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.04.09 – 2021.04.16	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2021.05.03 – 2021.05.10	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.05.14 – 2021.05.17	Gillette Children's Hospital & Specialty Healthcare (Remote VEEG/EEG) 200 University Avenue E, St Paul MN 55101
2021.05.21 – 2021.05.28	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2021.06.07 – 2021.06.14	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.06.11 – 2021.06.14	Gillette Children's Hospital & Specialty Healthcare (Remote VEEG/EEG) 200 University Avenue E, St Paul MN 55101
2021.06.25 – 2021.07.02	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2021.07.05 – 2021.07.12	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.07.09 – 2021.07.12	Gillette Children's Hospital & Specialty Healthcare (Remote VEEG/EEG) 200 University Avenue E, St Paul MN 55101
2021.08.02 – 2021.08.09	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.08.06 – 2021.08.09	Gillette Children's Hospital & Specialty Healthcare (Remote VEEG/EEG) 200 University Avenue E, St Paul MN 55101
2021.08.30 – 2021.09.06	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.09.03 – 2021.09.06	Gillette Children's Hospital & Specialty Healthcare (Remote VEEG/EEG) 200 University Avenue E, St Paul MN 55101
2021.09.27 – 2021.10.04	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.10.01 – 2021.10.04	Gillette Children's Hospital & Specialty Healthcare (Remote VEEG/EEG) 200 University Avenue E, St Paul MN 55101
2021.11.01 – 2021.11.08	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2021.11.29 – 2021.12.06	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425

LOCUM TENENS / CONSULTING WORK EXPERIENCE (Inpatient Consulting Attending Neurologist):

2022:

2022.01.03 – 2022.01.10	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2022.01.28 – 2022.02.04	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2022.02.18 – 2022.02.21	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2022.02.25 – 2022.03.04	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2022.03.28 – 2022.04.04	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2022.04.25 – 2022.05.02	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2022.05.13 – 2022.05.20	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2022.05.27 – 2022.05.30	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2022.06.13 – 2022.06.17	Children's Hospital & Medical Center & Hubbard Center for Children 8200 Dodge Street, Omaha NE 68114
2022.08.19 – 2022.08.26	Gillette Children's Hospital & Specialty Healthcare 200 University Avenue E, St Paul MN 55101
2022.09.09 – 2022.09.12	MUSC/Medical University of South Carolina - Shawn Jenkins Children's Hospital 10 McClennan Banks Drive, Charleston SC 29425
2022.09.30 – 2022.10.07	Gillette Children's Hospital & Specialty Healthcare 200 University Avenue E, St Paul MN 55101
2022.10.28 – 2022.11.04	Gillette Children's Hospital & Specialty Healthcare 200 University Avenue E, St Paul MN 55101
2022.12.02 – 2022.12.09	Gillette Children's Hospital & Specialty Healthcare 200 University Avenue E, St Paul MN 55101
2022.12.16 – 2022.12.23	UH Rainbow Babies & Children's Hospital 11100 Euclid Avenue, Cleveland OH 44106

ADMINISTRATIVE APPOINTMENTS: 1990-2013

Years:	Rank:	Institution/Department:
1990.07.01- 1993.06.30	Director, Pediatric Neurology	Children's Hospital 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818
1990.07.01- 1994.06.30	Associate Director, Muscular Dystrophy Association (MDA) Clinics	Children's Hospital 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818
1994.07.01- 1997.06.30	Director, Clinical Neurophysiology	Children's Hospital 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818
2002.07.01- 2004.06.30	Medical Director, MUSC Clinical Neurophysiology Laboratory	MUSC Neurology and Neurosurgery 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221
2002.07.01- 2006.06.30	Director, MUSC Pediatric Epilepsy Program	MUSC Neurosciences 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221
2006.07.01- 2008.06.30	Medical Director, MUSC Clinical Neurophysiology Laboratory	MUSC Neurosciences 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221
2011-2013	Gold Humanism Honor Society, MUSC Chapter Faculty Advisor	MUSC College of Medicine Dean's Office Clinical Sciences Building, Suite 601 Charleston SC 29403 Phone: 843.792.2081

1990-1997 HOSPITAL APPOINTMENTS / PRIVILEGES: 1990-1997

Years:	Rank:	Institution:	Location:
1990.07.01- 1993.06.30	Active	Medical College of Virginia Hospitals 1250 East Marshall Street Richmond VA 23219 Phone: 804.828.0445	Richmond VA
1993.07.01- 1997.06.30	Active	St Mary's Hospital (Bon Secours) 5801 Bremo Road Richmond VA 23226 Phone: 800.762.6161	Richmond VA
1993.07.01- 1997.06.30	Active	Henrico Doctor's Hospital 1602 Skipwith Road Richmond VA 23229 Phone: 804-289-4500	Richmond VA
1993.07.01- 1997.06.30	Active	Johnston-Willis Hospital 1401 Johnston Willis Drive Richmond VA 23235 Phone: 804.483.5000	Richmond VA
1993.07.01- 1997.06.30	Active	Chippenham Medical Center 7101 Jahnke Road Richmond VA 23225 Phone: 804.483.0000	Richmond VA
1993.07.01- 1997.06.30	Active	Children's Hospital of Richmond 2924 Brook Road Richmond VA 23220 Phone: 804.228.5818	Richmond VA
1993.07.01- 1997.06.30	Consulting	Richmond Memorial Hospital 1300 Westwood Avenue Richmond VA 23227 Phone: 804.254.6000	Richmond VA
1993.07.01- 1997.06.30	Consulting	Charter Westbrook Hospital 1500 Westbrook Avenue Richmond VA 23227 Phone: 804.266.9671	Richmond VA
1993.07.01- 1997.06.30	Consulting	Tucker Psychiatric Pavilion	Richmond VA
1993.07.01- 1997.06.30	Consulting	West End Behavioral Care (Psychiatric Institute)	Richmond VA
1993.07.01- 1997.06.30	Consulting	Cumberland Hospital for Children & Adolescents New Kent VA 23124	Cumberland VA
1993.07.01- 1997.06.30	Consulting	Medical College of Virginia Hospitals 1000 East Broad Street Richmond VA 23219 Phone: 804.828.0445	Richmond VA

HOSPITAL APPOINTMENTS / PRIVILEGES: 1997-Present

Years:	Rank:	Institution:	Location:
1997.07.01- 2014.06.30	Faculty	Medical University of South Carolina 135 Rutledge Avenue Charleston SC 29403 Phone: 843.792.3221	Charleston SC
2014.06.14 – Present	Community Faculty (non-admitting)	Bon Secours St Francis Hospital 2095 Henry Tecklenburg Drive Charleston SC 29414 Phone: 843.402.1000	Charleston SC
2014.05.28 – Present	Community Faculty (non-admitting)	Roper Hospital 316 Calhoun Street Charleston SC 29401 Phone: 843.724.2000	Charleston SC
2018.04.21 – Present	Community Faculty (non-admitting)	Mount Pleasant Hospital 3500 Highway 17 North Mt Pleasant SC 29644 Phone: 843.606.7000	Mt Pleasant SC
2020.04.01 – Present	**Associate Professor of Clinical Pediatrics (non-admitting)**	**Medical University of South Carolina Shawn Jenkins Children's Hospital Department of Pediatrics Division of Pediatric Neurology 125 Doughty Street, Suite 550, MSC 561 Charleston SC 29425 Phone: 843.792-3307/6004**	**Charleston SC**

PRACTICE EXPERIENCE:

Years:	Rank:	Institution:	Specialty:
1993.07.01– 1997.06.30	Private Practice	Pediatric Neurology Associates PC 5875 Bremo Road, Suite 310 Richmond VA 23226 Phone: 804-287-7080	Pediatric Neurology, Epilepsy, and Neurophysiology
1997.10.01– 1999.12.31	Private Practice	Pediatric Neurology Consultants LLC P.O. Box Charleston SC 29464	Pediatric Neurology
2013.07.01- 2020.01.31	Private Practice	Network Neurology LLC 1941 Savage Road, Suite 100-E Charleston SC 29407 Phone: 843-735-5920	Pediatric Neurology, Epilepsy, EEG/qEEG, Neurophysiology, Neurofeedback, and Neuromodulation
2020.02.01- **Present**	Consulting Practice	Network Neurology Health LLC 2245-C Ashley Crossing Drive PMB 163 Charleston SC 29414 Phone: 843-670-1705	Inpatient Pediatric Neurology Consultant, Remote EEG/QEEG/Neurophysiology

Membership in Professional & Scientific Societies; Editorial Positions:

National-International Affiliations:

AACPDM:	American Academy for Cerebral Palsy and Developmental Medicine
AAN:	American Academy of Neurology, Associate Clinical Member
AAP:	American Academy of Pediatrics, Fellow
AAEM:	American Association of Electrodiagnostic Medicine, Fellow
ASAM:	American Society of Addiction Medicine
ABCN:	American Board of Clinical Neurophysiology, Associate Examiner
ABRET:	American Board of Registration of EEG and EP Technologists, Inc., Examiner
ACNS:	American Clinical Neurophysiology Society, Fellow
AES:	American Epilepsy Society
AAPB:	Association for Applied Psychophysiology and Biofeedback
BCIA:	Biofeedback Certification International Alliance
CNS:	Child Neurology Society
ECNS:	EEG and Clinical Neurophysiology Society
IHF:	Innovative Health Foundation, Member of the Board
IBQE:	International Board of Quantitative Electrophysiology, Member of the Board
ISNR:	International Society for Neuroregulation and Research, Board Member-At-Large
IQCB:	International QEEG Certification Board, Member of the Board
SBCNA:	Southeast Biofeedback and Clinical Neurophysiology Association
SBMT:	Society for Brain Mapping and Therapeutics, Member

Local & State Affiliations:

Medical Campus Outreach, MUSC, Charleston SC
(1997-2013)
Robert Wilson Medical History Club, MUSC, Charleston SC
(1997-2013)
Waring Library Society, MUSC, Charleston SC
(1997-2013)
Quality Assurance/Medical Care Committee, Children's Hospital, Richmond VA
(1994-1997)
Physician Sub-Committee of the Corporate Planning Committee, Board of Trustees of Children's Hospital
(1994-1997)
Physician's Advocacy and Advisory Committee (PAAC) of the South Carolina Medical Association (SCMA)
(2000-**Present**)
South Carolina Recovering Professionals Program (SCRPP)
(2000-2021)
South Carolina Society of Addiction Medicine (SCSAM)
(2000-**Present**)

Editorial Positions: *Epilepsia* (Invited Reviewer)

Epilepsia	Invited Reviewer 2005-Present
Journal of Child Neurology	Invited Reviewer 2010-Present
Clinical EEG and Neuroscience	Invited Reviewer 2019-Present

Extramural Research (ACTIVE and INACTIVE):

Funding Organization: Dr Caroline Leaf (www.DrLeaf.com) Co-PI
PI: Robert P Turner MD MSCR ($12,000) 01/2019-12/2020
eIRB: Sterling IRB ID# 7281-RPTurner; Protocol #NN-2019-01; UDAK: MUCU 2258000 27511 7125 00
Location: Network Neurology LLC, Charleston SC
Title: Psychological and Neurophysiological effects of a non-pharmacological intervention in subjects with mental health and neurological symptoms

Funding Organization: MIND Research Institute and MUSC Neurosciences (renewal) PI
PI: Robert P. Turner, MD, MSCR ($54000) 03/2012-02/2014
eIRB: Pro00007683; UDAK: MUCU 2258000 27511 7125 00 Location: MUSC, Charleston, SC
Title: Prevention of photoparoxysmal abnormalities through patterned auditory stimulation

Funding Organization: MIND Research Institute and MUSC Neurosciences PI
PI: Robert P. Turner, MD, MSCR ($60000) 01/2010-02/2012
eIRB: Pro00007683; UDAK: MUCU 2258000 27511 7125 00, MUSC, Charleston, SC
Title: Prevention of photoparoxysmal abnormalities through patterned auditory stimulation

RO1 NS 052448 Co-Investigator
PI: Dorothea Jenkins, MD 2007– 2012
Safety of N-Acetylcysteine in Maternal Chorioamnionitis
Role: Co-Investigator (EEG Interpretation) (Pediatric Epileptologist/Clinical Neurophysiologist)

Epilepsy Protocol #K826-05-3001 Co-Investigator
PI: Jonathan J. Halford, MD; King Pharmaceuticals, Inc.
Title: A Phase 3, Randomized, Double-Blind, Parallel, Placebo-Controlled, Multicenter Study, with Optional Open-Label Continuation, of the Efficacy and Safety of Vanquix™ Auto-Injector (Diazepam Injection) for the Management of Selected, Refractory, Pts w Epilepsy who Require Intermittent Medical Intervention to Control
Episodes of Acute Repetitive Seizures. Epilepsy Protocol #E2007-G000-304 Co-Investigator
PI: Jonathan J. Halford, MD; EISAI Medical Research, Inc.
Title: A Double-Blind, Placebo-Controlled, Dose-Escalation, Parallel-Group Study to Evaluate the Efficacy and Safety of E2007 (perampanel) Given as Adjunctive Therapy in Subjects with Refractory Partial Seizures

Epilepsy Protocol #E2007-G000-307 Co-Investigator
PI: Jonathan J. Halford, MD; EISAI Medical Research, Inc.
Title: A 14-Month Open-Label Extension Phase of the Double-Blind, Placebo-Controlled, Dose-Escalation, Parallel-Group Studies to Evaluate the Efficacy and Safety of E2007 (perampanel) Given as Adjunctive Therapy in Subjects with Refractory Partial Seizures

Epilepsy Protocol #CARIS-EPY-3013/3014 Co-Investigator
PI: Jonathan J. Halford, MD; Johnson & Johnson Pharmaceutical Research & Development, LLC Title: Carisepy in Epilepsy

Neuroradiology Protocol #MH 110 (HR# 16540) Co-Investigator PI: Zoran Rumboldt; Bracco Diagnostics Inc
Title: A Phase III, Multi-Center, Open-Label Study to Evaluate Safety And Efficacy Of Multihance at the Dose of 0.10 Mmol/Kg In Magnetic Resonance Imaging In The Central Nervous System in Pediatric Patients

Funding Organization: MUSC University Research Committee, Fundable Score 1.47 (11/18/03)
PI: Robert P. Turner, MD, MSCR ($6500) 12/2003-10/2006
Data Analysis Location: MUSC Inpatient GCRC
Title: The effect of music periodicity on interictal epileptiform discharges (IEDs)

Extramural Research (ACTIVE and INACTIVE):

Funding Organization: M.I.N.D. Research Institute and MUSC Neurosciences — Data analysis
PI: Robert P. Turner, MD, MSCR ($47500) — 09/2005-08/2007
Location: Thad E. Saleeby Center, Hartsville, SC
Title: The generalized Mozart effect in reducing seizures in individuals with special needs

RO1 CA 78-957-01A1 — Ronald T. Brown, PhD (PI) — 1999 – 2004 — Co-Investigator
NIH/NCI (National Cancer Institute) Learning Impairments Among Survivors of Childhood Cancer
MEMFX2 (Long-Term Effectiveness of MPH in Survivors of Childhood Brain Tumors & Leukemia)
Multi-site investigation: St. Jude Children's Research Hospital; Duke University Medical Center
Role: Co-Investigator (Pediatric Neurologist)

U17/CCU421926-01 — Anbesaw W. Selassie, DrPH (PI) — 8/1/02 - 7/31/05 — Co-Investigator
CDC/NCIPC (National Center for Injury Prevention and Control)
SC TBIFR (The South Carolina Traumatic Brain Injury Follow-up Registry)
Role: Co-Investigator (Neurologist/Epileptologist)

U17/CCU421926-01 — Anbesaw W. Selassie, DrPH (PI) — 8/1/02 - 7/31/05 — Co-Investigator
CDC/NCIPC (National Center for Injury Prevention and Control
SC TBIFR – SSA Subproject (Subproject of the SSA assessment of SSI/SSDI assistance after TBI)
Role: Co-Investigator (Neurologist/Epileptologist)

MM-0304-03/03 — Anbesaw W. Selassie, DrPH (PI) — 2004-2008 — Consultant
CDC/NCIPC (National Center for Injury Prevention and Control)
SC ESESD (South Carolina Epidemiological Studies of Epilepsy and Seizure Disorders
Role: Co-Investigator (Neurologist/Epileptologist)

MM-0685-04/04 — Anbesaw W. Selassie, DrPH (PI) — 2004-2008 — Consultant
CDC/NCIPC
SC HOPE (South Carolina Health Outcome Project on Epilepsy
Role: Co-Investigator (Neurologist/Epileptologist)

Awards, Honors, Memberships in Honorary Societies:

Years:	Honor/Award:
1973-1976	National Honor Society, Westside High School
1973-1976	Junior Davis Cup Tennis Team, United States Central Region
1974	National Honor Award for Piano Performance, National Federation of Music Clubs
1975	National Honor Award for Piano Performance, National Federation of Music Clubs
1975-1976	Golden Jubilee National Music Award for Piano Performance, College of St Mary
1975-1976	National Merit Scholar, Westside High School
1976-1978	Academic, Science, and Music Scholarships, Hastings College
1976-1978	Dean's List, Hastings College
1977-1978	Outstanding Sophomore, National Honorary Society, Chapter of Alpha Chi, Hastings College
1978-1980	University of Nebraska Honors Program, Full Member
1979-1980	Who's Who Among Students in American Colleges & Universities
1976-1980	**Magna Cum Laude**, Bachelor of Arts **With Honors**, University of Nebraska at Omaha
1984-1985	**UNMC Clerkship Committee Award** for Outstanding Contributions to Medical Student Education
1989-1990	Who's Who in American Christian Leadership – American Christian Leadership Council
1990-1991	Who's Who Among Rising Young Americans - Citation
1992-1993	Who's Who in Health and Medical Services - West
1992-1993	Who's Who Among Rising Young Americans - Citation
1992-Present	**Examiner, American Board of Clinical Neurophysiology**
1994-1995	Who's Who Worldwide - Who's Who Worldwide Registry, Inc.
1996-1997	Best Doctors in America, Southeast Region - Richmond VA
2000-2001	2001 **Faculty Excellence Award**, Outstanding Attending, 1st runner up, MUSC Class of 2001
2002-2003	2003 **Faculty Excellence Award**, Outstanding Attending Finalist, MUSC Class of 2003
2002-2003	Honored Member, Strathmore's Who's Who
2004	2004 **Faculty Excellence Award**, Outstanding Attending Finalist, MUSC Class of 2004
2004	2004 **Oath Address**, 2004 College of Medicine Oath Ceremony, May 20, 2004
2004	**AREA Award (**Accountability/Respect/Excellence/Adaptability**)**, 2004, UMA-MUHA Ambulatory Services
2005	2005 **Faculty Excellence Award**, Outstanding Attending Finalist, MUSC Class of 2005, 2006, and 2007
2005	2005 **Golden Apple Award Nominee** – MUSC AMSA and College Of Medicine
2006	2006 **Faculty Excellence Award**, Faculty Excellence Committee, MUSC Class of 2007
2008	MUSC-MUHA **Physician of the Month**, February 2008
2008	Candidate Marshall, MUSC 179th Commencement, 16 May 2008
2008	MUSC College of Medicine **Teacher of the Month**, November 2008
2008	MUSC College of Medicine **Teacher of the Month**, December 2008
2009	2009 **Golden Apple Award Winner** – MUSC AMSA and College Of Medicine, MUSC Classes of 2010 & 2011
2009	2009 **AAMC Humanism in Medicine Award** - MUSC COM Nominee: 1st – 4th year classes
2009	2009 **Faculty Excellence Award**, Faculty Excellence Committee, MUSC Classes of 2009-2010
2009	MUSC College of Medicine **Teacher of the Month**, September 2009
2009	**Tenure** granted by MUSC Board of Trustees (December 2009)
2010	2010 **Faculty Excellence Award**, Nominee/Finalist, Faculty Excellence Committee, MUSC Classes of 2010-2011
2010	2010 **Leonard Tow Humanism in Medicine Award** (Arnold P. Gold Foundation)
2011-Present	**Chapter Advisor, Paul B. Underwood MUSC Gold Humanism Honor Society**
2012	MUSC College of Medicine **Teacher of the Month**, January 2012
2012	MUSC College of Medicine **Teacher of the Month**, February 2012
2012	White Coat Ceremony, MUSC COM Class of 2016
2013	MUSC College of Medicine **Teacher of the Month**, January 2013
2013	**2013 Compassionate Doctor Award** (Patients' Choice Registry)

Community Service:

Physician Advocacy and Assistance Committee (PAAC) of the South Carolina Medical Association (SCMA)

Caduceus Groups, South Carolina Recovering Professional Program (SCRPP)

Charleston Running Club

Area 62 South Carolina Alcoholics Anonymous - Area 62 Archivist

Area 62 South Carolina Alcoholics Anonymous - District 70 Alternate Treasurer

Character Training Seminars, Institute for Basic Life Principles, Dorchester County Jail

Palmetto Medical Initiative, Macindi, Uganda

Mayor's Charleston Youth Summit, Mayor Joe Riley

Interdenominational Medical Missionary Work, Tegucigalpa, Honduras

Board of Directors, Rainbow Games, Inc, Richmond VA (1987-1997)

Medical Advisory Board, Family Policy Council, Inc. (1987-1997)

Major Clinical Interests:

Clinical Research and Trials for non-invasive neuromodulation therapies for persons with intractable epilepsy and other neurological dysfunctions

Clinical, Teaching, and Research in Quantitative Electroencephalography Functional Neuroimaging in Clinical Practice

Clinical Research in Pediatric Epilepsy

Clinical Teaching in Neurology and Dynamic Neuroanatomy, Neurophysiology, Neuro-Dynamics, and Neuro-Connectomics

Clinical Research in Theology, Spirituality, and Health

Mechanisms and Novel Non-Invasive Treatments of Pediatric Epilepsy and Epileptogenesis

Clinical Neurophysiology and Monitoring of the Nervous System and Clinical Neurophysiology the Human EEG

Extramural Professional Activities:

Examiner, American Board of Clinical Neurophysiology, Inc. (ABCN)

Examiner, American Board of Registration of Electroencephalographic & Evoked Potential Technologists, Inc. (ABRET)

Member, Physician Advocacy and Assistance Committee (PAAC) of the South Carolina Medical

Member, Association Family Health Scientific Research Board, Growing Families International

Member Medical Advisory Board, Crafty K-9 (seizure-alert, protection, and therapy dogs)

UNIVERSITY, RESIDENCY, and FELLOWSHIP ACADEMIC ACHIEVEMENTS (1976-1990):

University of Nebraska Honors Program (1976-1980)

Senior Thesis (Dr Rosalie Saltzman):	Medicine of the Whole Person
Honors Program Thesis (Dr Rosalie Saltzman):	Biblical and Talmudic Medicine: Medical and Ethical Aspects
Senior Project (Dr Gordon Mundell):	Polyglot Aphasia: Clinical and Rehabilitative Aspects
International Economics Project (Dr Donald Joy):	Business and Ethics
Senior Piano Recital (Dr Clarke Mullen):	Baroque, Romantic, and Classical 90-minute Program

Department of Pediatrics, University of Nebraska Medical Center, Non-Published Clinical Studies (1984-1986)

Immunology (Dr Roger Kobiashi):	Clinical Aspects Rubella Vaccination and Immunity
Ambulatory Pediatrics (Dr Carol Angle):	Standardization of Routine Health Care, Birth – 20 Years
Neonatology (Dr Robert Nelson):	Standardization of Normal Newborn Care

Department of Neurology, Medical College of Virginia, Areas of Clinical Interest / Research (1986-1990)

Experimental Protocol Drug Study in Dialysis Patients (Co-PI: Drs Dominca Sica and Robert Leshner)

Cooperative Aneurysm Study of Nicardipine in Subarachnoid Hemorrhage (PI: Dr Paul Muizelaar)

Safety of Intravenous Valproate in Children (PI: Dr John “Jack” M Pellock)

Epidemiology and Outcome of Febrile Status Epilepticus in Twins (PI: Drs John “Jack” M Pellock and Robert DeLorenzo)

Use of Lioresal Intrathecal in the Management of Spastic Cerebral Palsy (PI: Dr John Ward)

Selective Dorsal Rootlet Rhizotomy in the Management of Spasticity (PI: Drs John Ward and Robert Leshner)

Abstract: Pseudo-pseudo-ulnar Clawing: A Presentation of C8 Radiculopathies, presented at the American Academy of Neurology Annual Meeting, April 1990, Poster Session (Mentor: Dr William Campbell)

Medical Student Mentoring/Advisor/Instructor: 3rd - 4th year COM Students:

2003 Benjamin B. Elder **(Class of 2004: Faculty Advisor)**
2003 J. Michael Stone **(Class of 2004: Faculty Advisor)**
2005-2006 Christopher Bowers (Epilepsy Research Assistant)
2005 Eboni I. Lance (Class of 2007: Pediatric Epilepsy Rotation)
2005 Laura Taylor (Class of 2007: Pediatric Epilepsy Rotation)
2005 Lara C. Lambert (Class of 2007: Pediatric Epilepsy Rotation)
2006 Erin Bailey (Class of 2008: Pediatric Epilepsy Rotation)
2006 Elisabeth Bowden (Class of 2008: Pediatric Epilepsy Rotation)
2006-2008 Caroline Norment (Epilepsy Research Assistant)
2007 Joshua M. Henry (Class of 2009: Pediatric Epilepsy Rotation)
2007 Sarah Coker (Class of 2009: Pediatric Epilepsy Rotation)
2007 Matthew Kappus (Class of 2009: Pediatric Epilepsy Rotation)
2008 Maggie R. Pierson (Class of 2009: Pediatric Epilepsy Rotation)
2008 Ashley L. Kuklentz (Class of 2010: Pediatric Epilepsy Rotation)
2008 Laura Martin (Class of 2012: Epilepsy/Music Research)
2008 Jennifer L. Zurosky **(Class of 2010: Faculty Advisor)**
2008 Joshua L. Fuller **(Class of 2010: Faculty Advisor)**
2009-2010 Sarah Beth Hughes (Epilepsy Research Assistant)
2009 Neal Goodbar (Class of 2010: Pediatric Epilepsy Rotation)
2009 Annie Chen (Class of 2010: Pediatric Epilepsy Rotation)
2009 Tamara Johnson (Class of 2010: Pediatric Epilepsy Rotation)
2009 Stuart Saunders (Class of 2010: Pediatric Epilepsy Rotation)
2009 Megan A. White (Class of 2010: Pediatric Epilepsy Rotation)
2009 Ashley Kaiser-Rickey (Class of 2010: Pediatric Epilepsy Rotation)
2009 Stetson Bickley (Class of 2010: Pediatric Epilepsy Rotation)
2009 Annie Chen (Class of 2010: Pediatric Epilepsy Research Elective – Poster & Paper)
2009 Joshua L. Fuller (Class of 2010: Pediatric Epilepsy Rotation)
2009 Jennifer L. Zurosky (Class of 2010: Pediatric Epilepsy Rotation)
2009 Blakely Andrews (Class of 2011: Pediatric Epilepsy Rotation)
2009 Charles "Chas" Peyton (Class of 2011: Pediatric Epilepsy Rotation)
2010-2011 Lee Anne Tetrick (Epilepsy Research Assistant)
2010 Sarah Bishop (Class of 2010: Pediatric Epilepsy Rotation)
2010 William "Billy" Grimes (Class of 2011: Pediatric Epilepsy Rotation)
2010 Morgan Glass (Class of 2010: Pediatric Epilepsy Rotation)
2010 Erek Majek (Class of 2011: Pediatric Epilepsy Rotation)
2010 Jefferson "Naylor" Brownell (Class of 2011: Pediatric Epilepsy Rotation)
2010 John Hungerford (Class of 2011: Pediatric Epilepsy Rotation)
2010 Robert Bolen (Class of 2011: Pediatric Epilepsy Rotation)
2010 Wade Reardon (Class of 2011: Pediatric Epilepsy Rotation)
2010 Day Burruss (Class of 2011: Pediatric Epilepsy Rotation)
2010 Day Burruss **(Class of 2011: Faculty Advisor)**
2010 William Berglind **(Class of 2012: Faculty Advisor)**
2011 Letitia Bolds (Class of 2011: Pediatric Epilepsy/Neurology Rotation)
2011 Nadia Roessler (Class of 2012: Pediatric Epilepsy Rotation – Visiting Student, France)
2012 Fernando Nicholas "Nick" Galan **(Class of 2013: Faculty Advisor)**
2012 David Matthew Braddy **(Class of 2013: Faculty Advisor)**
2012 Bobbi Jean Dulcie **(Class of 2013: Faculty Advisor)**
2012 Jonathan William Brock **(Class of 2013: Faculty Advisor & GHHS Mentor)**
2012 Justin Douglas Moody **(Class of 2013: Faculty Advisor & GHHS Mentor, Hooding Ceremony)**
2012 Leah Danielle Fryml **(Class of 2013: Faculty Advisor; Hooding Ceremony)**
2013 Catherine "Catie" Haar **(Class of 2014: Faculty Advisor)**
2013 Armina T Omole **(Class of 2014: Faculty Advisor)**
2013 Jason Jamier Bethea **(Class of 2014: Faculty Advisor)**
2014 Greg Franklin **(Class of 2016: Faculty Advisor)**

Publications/Posters/Abstracts

Peer-Reviewed Journal Articles, Abstracts, Reviews, and Letters to the Editor:

Turner, R.P. (2022) Unrecognized adverse effects of environmental EMR (electromagnetic radiation) on pre/postnatal neurodevelopment, genetic/reproductive health, and propensity toward early-onset seizures/epilepsy.
14th Annual ILAE European Epilepsy Congress, July 9-13, 2022, Geneva Switzerland. *Epilepsia*.

***Purpose**: To review the extensive 70+ year scientific literature assessing the relationship between EMR and epilepsy: increasing EMR exposure of the developing brain may result in increased risk of seizures/epilepsy and related comorbidities, neurodevelopmental disorders, and genetic abnormalities.*
***Method**: Literature review from 1950-2022 using search criteria of EMF, seizure(s), epilepsy, radio-frequency radiation (RFR), EEG, genetic, reproductive, and electromagnetic frequency/radiation.*
***Results**: Exponentially increasing EMR exposure of humans worldwide is essentially unrecognized despite its pervasive, albeit invisible, presence throughout the world. The relationship of seizures/epileptogenesis with EMR exposure from increasingly pervasive wireless networks, cell phones/towers, etc. is demonstrated in numerous publications, also demonstrating adverse effects on genetic/reproductive health. Some neurobiological mechanisms are known, and animal studies are published. The developing nervous system is more susceptible to EMR, and, given that the nervous system functions electromagnetically, neurodevelopmental anomalies and seizures/epilepsy are increasingly associated with such exposures both pre- and postnatally, and throughout the lifespan. Publications also document apparent lack of adverse effects from EMR and warrant further investigation. However, scientists and clinicians should follow the precautionary principle (taking preventative action in the face of uncertain and/or conflicting scientific evidence) given the substantial literature involving human/animal studies and worldwide deployment of wireless technology. Evidence exists that worldwide, pervasive, increasing EMR exposure may result in progressive manifestation of seizures/epilepsy and other disorders of the developing nervous system.*
***Conclusion**: A comprehensive review of adverse effects of EMR confirms that resultant CNS dysfunction may lead to early-onset seizures/epilepsy and associated comorbidities of the developing nervous system, as well as other disorders of pre- and postnatal brain development and genetic/reproductive health. Educational endeavors are needed to raise awareness of the potential harms of daily and cumulative EMR exposure. Simple lifestyle changes are encouraged to diminish daily and cumulative lifetime EMR exposure to the developing child and maturing human.*

Turner, R.P. (2022) Adjunctive neuromodulation/neurofeedback (NFB) training in children with seizures/epilepsy: Review of the literature, clinical experience, and case samples.
14th Annual ILAE European Epilepsy Congress, July 9-13, 2022, Geneva Switzerland. *Epilepsia*.

***Purpose**: To assess the validity and reliability of NFB for children with seizures/epilepsy within a comprehensive management paradigm. Given knowledge of epilepsy as a network disease and inefficacy of some pharmaceutical and surgical interventions, the benefit of using quantitative-EEG-guided NFB (QEEG-NFB) to identify and train abnormal network dynamics and epilepsy-associated comorbidities in children is demonstrated.*
***Method**: A comprehensive literature review (130 articles from 1968-2022) was performed to evaluate the historical precedent and neuroscientific foundations of NFB. This was combined with clinical practice experience of 10-years with QEEG-NFB as adjunctive therapy in children with seizures and epilepsy.*
***Results**: Literature review demonstrated consistent clinical benefits with NFB in people with epilepsy (PWE). Some studies are limited by the individualized techniques of NFB, and large-scale, double-blinded placebo-controlled randomized clinical trials (RCTs) are not available. However, extensive experience of clinicians and researchers over six decades of literature review, coupled with collective experience of clinical practice using adjunctive QEEG-NFB, demonstrates favorable benefits of this method within a comprehensive epilepsy management program. When guided by QEEG and functional mapping/low-resolution electromagnetic tomographic analysis (LORETA), individualized NFB training in PWE demonstrates the ability to decrease seizures and seizure-susceptibility, provide insights toward improving anti-seizure medication choices and side effects, and result in improvements in CNS functioning correlating with improved health-related quality-of-life (HRQOL).*
***Conclusion**: Cumulative clinical experience with EEG, QEEG, and NFB for PWE, combined with extensive literature review, demonstrated that NFB is a clinically valid, viable, time-tested, and evidence-based modality to be considered in epilepsy management of many PWE, achieving improved seizure control, guiding medication decisions, and improving overall brain network dynamics. With proper training and experience, NFB is shown to be easily implemented into a comprehensive epilepsy management paradigm guiding precision treatments, providing improved clinical outcomes, and improving HRQOL.*

White, R. D., **Turner, R. P.**, Arnold, N., Bernica, A., Lewis, B. N., & Swatzyna, R. J. (2021). Treating Severe Traumatic Brain Injury: Combining Neurofeedback and Hyperbaric Oxygen Therapy in a Single Case Study. *Clinical EEG and Neuroscience*, 15500594211068255. https://doi.org/10.1177/15500594211068255

Abstract: In 2014, a 26-year-old male was involved in a motor vehicle accident resulting in a severe traumatic brain injury (TBI). The patient sustained a closed-head left temporal injury with coup contrecoup impact to the frontal region. The patient underwent a left side craniotomy and was comatose for 26 days. After gaining consciousness, he was discharged to a brain injury treatment center that worked with physical, speech, and occupational issues. He was discharged after eight months with significant speech, ambulation, spasticity, and cognitive issues as well as the onset of posttraumatic epilepsy. His parents sought hyperbaric oxygen treatment (HBOT) from a doctor in Louisiana. After 165 dives, the HBOT doctor recommended an addition of neurofeedback (NFB) therapy. In March 2019 the patient started NFB therapy intermixed with HBOT. The combination of NFB and HBOT improved plasticity and functionality in the areas of injury and the correlated symptoms including short-term memory, personality, language, and executive function, as well as significantly reducing the incidence of seizures. Severe brain injuries often leave lasting deficits with little hope for major recovery and there is a need for further research into long-term, effective neurological treatments for severe brain injuries. These results suggest that HBOT combined with NFB may be a viable option in treating severe brain injuries and should be investigated.

Turner R. P. (2021). Clinical Application of Combined EEG-qEEG Functional Neuroimaging in the Practice of Pediatric Neuroscience: A Personal Perspective. *Clinical EEG and Neuroscience*, *52*(2), 126–135. https://doi.org/10.1177/1550059420982419

Abstract: *This brief article is an overview of my personal experience over the past almost 10 years of the clinical use of EEG and quantitative EEG (qEEG) functional neuroimaging in a busy pediatric neurology practice. The concomitant use of surface EEG and functional electromagnetic EEG neuroimaging/qEEG in clinical practice provides significant additional clinical and neurophysiologic information. The qEEG is a noninvasive, inexpensive, portable technique with high temporal resolution (milliseconds) and improving spatial resolution (down to 3 mm^3) and is an appropriate and validated tool for investigation of abnormal brain dynamics and connectivity of neuronal networks in clinical disorders of the brain. This article describes the daily applicability and utility of this modality in assisting diagnosis and clinical management of patients with a wide variety of presenting symptoms, including headaches, tics, autism spectrum disorder, inattention, sleep dysregulation, anxiety, and depression. The ease of data acquisition and analysis in clinical practices, coupled with skilled interpretation and clinical application, makes this tool one of the most valuable clinical tools to complement a thorough history and examination process.*

Swatzyna, R. J., Arns, M., Tarnow, J. D., **Turner, R. P.**, Barr, E., MacInerney, E. K., Hoffman, A. M., & Boutros, N. N. (2020). Isolated epileptiform activity in children and adolescents: prevalence, relevance, and implications for treatment. *European Child & Adolescent Psychiatry*, 10.1007/s00787-020-01597-2. https://doi.org/10.1007/s00787-020-01597-2

Abstract: In the field of psychiatry diagnoses are primarily based on the report of symptoms from either the patient, parents, or both, and a psychiatrist's observations. A psychiatric diagnosis is currently the most widely used basis for medication selection and the brain is seldom investigated directly as a source of those symptoms. This study addresses the request from the National Institute of Mental Health (NIMH) Research Domain Criteria Project (RDoC) for scientific research into neurological abnormalities that can be linked to psychiatric symptoms for the purpose of predicting medication response. One such neurological abnormality that has been the focus of many studies over the last three decades is isolated epileptiform discharges (IEDs) in children and adolescents without seizures. We conducted a systematic review of the literature to determine prevalence rates of IEDs within diagnostic categories. We then compared the prevalence of IEDs in the selected literature to our IRB-approved data archive. Our study found a consistent high prevalence of IEDs specifically for ADHD (majority > 25%) and ASD (majority > 59%), and consistent low prevalence rates were found for Depression (3%). If children and adolescents have failed multiple medication attempts, and more than one-third of them have IEDs, then an EEG would be justified within the RDoC paradigm.

Swatzyna RJ, Tarnow JD, **Turner RP**, et al. (2019). The Treatment of Children and Adolescents with Interictal Epileptiform Discharges: A Pharmaco-EEG Model.

Cronjé, F. J., Sommers, L. S., Faulkner, J. K., Meintjes, W. A., Van Wijk, C. H., & **Turner, R. P.** (2017). Effect of a Faith-Based Education Program on Self-Assessed Physical, Mental and Spiritual (Religious) Health Parameters. *Journal of Religion and Health*, *56*(1), 89–108. https://doi.org/10.1007/s10943-015-0129-z

ABSTRACT*:* ***Introduction:*** *This study measured the effect of faith-based education on self-assessed physical, mental & spiritual health.*
Methods*: While pre-registering for a 5-day, faith-based education seminar, individuals without prior exposure were invited to complete an on-line survey made up of the Duke University Religion Index (DUREL); Negative Religious Coping (RCOPE); Perceived Stress Scale (PSS); Center for Epidemiology and Statistics - Depression Scale (CES-D); Brief Illness Perception Questionnaire (BIPQ); and State Trait Anxiety Inventory (STAI).*
The survey was repeated after ± 10 days on-site on the last day of the seminar and off-site after 30 & 90 days respectively. Of the 655 invited, 139 declined; 431 responded but failed to meet all inclusion criteria; 85 (47♂; 38♀; range: 18-75 yrs) were eligible and their data analyzed: 49 (4 surveys); 23 (3 surveys) & 13 (2 surveys). There was no solicitation other than a single e-mail remainder. The study was approved by the Human Research Ethics Committee of the Univ of Stellenbosch, South Africa.
Results*: Median values of all indices dropped significantly immediately following the seminar (STAI for State p<0.0001 & Trait Anxiety p<0.0001; PSS p<0.0001; BIPQ p<0.0001; and CES-D p<0.0001). Changes were sustained over 3 months. No significant changes occurred after the 2nd survey. Differential changes in RCOPE reflected the seminar content. DUREL did not change significantly.*
Discussion*: The study supports the hypothesis that this faith-based seminar has a lasting statistically & clinically significant effect on self-assessed spiritual, mental and physical health parameters. Keywords: religion, mental health.*

Swatzyna, R. J., Tarnow, J. D., Turner, R. P., Roark, A. J., MacInerney, E. K., & Kozlowski, G. P. (2017). Integration of EEG Into Psychiatric Practice: A Step Toward Precision Medicine for Autism Spectrum Disorder. *Journal of Clinical Neurophysiology*, *34*(3), 230–235. https://doi.org/10.1097/WNP.0000000000000365

***Abstract**: **Introduction:** Data from an EEG is not commonly used by psychiatrists to plan treatment and medication. However, EEG abnormalities such as isolated epileptiform discharges are found to be more prevalent in psychiatric patients, particularly those diagnosed with autism spectrum disorder (ASD). Most medications prescribed for ASD lower seizure threshold and increase side effects. Therefore, it may be prudent to order an EEG for ASD cases, especially those categorized as refractory.*
***Methods:** The data set was obtained from a multidisciplinary practice that treats a wide variety of neuroatypical children and adolescent refractory patients. This study investigated 140 nonepileptic subjects diagnosed with ASD, aged 4 to 25 years. Visual inspection of the EEG was performed to search for paroxysmal, focal, or lateralizing patterns.*
***Results:** Of the 140 subjects, the EEG data identified 36% with isolated epileptiform discharges. The χ analysis found no significant difference between genders among the three age groups. Findings indicated a high prevalence of isolated epileptiform discharges among individuals with ASD.*
***Conclusions:** Our results find that compared with the healthy population, a large number of patients with ASD have isolated epileptiform discharges despite never having a seizure. Our findings support the use of EEG in children, adolescents, and young adults with ASD, regardless of gender or age. This is particularly true for those who exhibit aggressive behaviors or those who have failed previous medication attempts with stimulants, antidepressants, and/or antipsychotics.*

Jenkins, D. D., Wiest, D. B., Mulvihill, D. M., Hlavacek, A. M., Majstoravich, S. J., Brown, T. R., Taylor, J. J., Buckley, J. R., **Turner, R. P.**, Rollins, L. G., Bentzley, J. P., Hope, K. E., Barbour, A. B., Lowe, D. W., Martin, R. H., & Chang, E. Y. (2016). Fetal and Neonatal Effects of N-Acetylcysteine When Used for Neuroprotection in Maternal Chorioamnionitis. *The Journal of Pediatrics* (www.JPeds.com), *168*, 67–76.e6. https://doi.org/10.1016/j.jpeds.2015.09.076

***Abstract**: **Objective:** To evaluate the clinical safety of antenatal and postnatal N-acetylcysteine (NAC) as a neuroprotective agent in maternal chorioamnionitis in a randomized, controlled, double-blinded trial.*
***Study design:** Twenty-two mothers >24 weeks gestation presenting within 4 hours of diagnosis of clinical chorioamnionitis were randomized with their 24 infants to NAC or saline treatment. Antenatal NAC (100 mg/kg/dose) or saline was given intravenously every 6 hours until delivery. Postnatally, NAC (12.5-25 mg/kg/dose, n = 12) or saline (n = 12) was given every 12 hours for 5 doses. Doppler studies of fetal umbilical and fetal and infant cerebral blood flow, cranial ultrasounds, echocardiograms, cerebral oxygenation, electroencephalograms, and serum cytokines were evaluated before and after treatment, and 12, 24, and 48 hours after birth. Magnetic resonance spectroscopy and diffusion imaging were performed at term age equivalent. Development was followed for cerebral palsy or autism to 4 years of age.*
***Results:** Cardiovascular measures, cerebral blood flow velocity and vascular resistance, and cerebral oxygenation did not differ between treatment groups. Cerebrovascular coupling was disrupted in infants with chorioamnionitis treated with saline but preserved in infants treated with NAC, suggesting improved vascular regulation in the presence of neuroinflammation. Infants treated with NAC had higher serum anti-inflammatory interleukin-1 receptor antagonist and lower proinflammatory vascular endothelial growth factor over time vs controls. No adverse events related to NAC administration were noted.*
***Conclusions:** In this cohort of newborns exposed to chorioamnionitis, antenatal and postnatal NAC was safe, preserved cerebrovascular regulation, and increased an anti-inflammatory neuroprotective protein.*

Turner, R.P. (2016). Review of Michael and Lynda Thompson, *The Neurofeedback Book: An Introduction to Basic Concepts in Applied Psychophysiology***,** Michael and Lynda Thompson (2015), Wheat Ridge, CO: Association for Applied Psychophysiology and Biofeedback. (858 p.)**,** *Biofeedback* (2016) 44 (1): 50–52. https://doi.org/10.5298/1081-5937-44.1.09

Halford, J. J., Schalkoff, R. J., Zhou, J., Benbadis, S. R., Tatum, W. O., **Turner, R. P.**, Sinha, S. R., Fountain, N. B., Arain, A., Pritchard, P. B., Kutluay, E., Martz, G., Edwards, J. C., Waters, C., & Dean, B. C. (2013). Standardized database development for EEG epileptiform transient detection: EEGnet scoring system and machine learning analysis. *Journal of Neuroscience Methods*, 212(2), 308–316. https://doi.org/10.1016/j.jneumeth.2012.11.005

***ABSTRACT**: The routine scalp electroencephalogram (rsEEG) is the most common clinical neurophysiology procedure. The most important role of rsEEG is to detect evidence of epilepsy, in the form of epileptiform transients (ETs), also known as spike or sharp wave discharges. Due to the wide variety of morphologies of ETs and their similarity to artifacts and waves that are part of the normal background activity, the task of ET detection is difficult and mistakes are frequently made. The development of reliable computerized detection of ETs in the EEG could assist physicians in interpreting rsEEGs. We report progress in developing a standardized database for testing and training ET detection algorithms. We describe a new version of our EEGnet software system for collecting expert opinion on EEG datasets, a completely web-browser based system. We report results of EEG scoring from a group of 11 board-certified academic clinical neurophysiologists who annotated 30-s excepts from rsEEG recordings from 100 different patients. The scorers had moderate inter-scorer reliability and low to moderate intra-scorer reliability. In order to measure the optimal size of this standardized rsEEG database, we used machine learning models to classify paroxysmal EEG activity in our database into ET and non- ET classes. Based on our results, it appears that our database will need to be larger than its current size. Also, our non-parametric classifier, an artificial neural network, performed better than our parametric Bayesian classifier. Of our feature sets, the wavelet feature set proved most useful for classification.*

Bodner, M., **Turner, R. P.**, Schwacke, J., Bowers, C., & Norment, C. (2012). Reduction of seizure occurrence from exposure to auditory stimulation in individuals with neurological handicaps: a randomized controlled trial. *PloS One*, 7(10), e45303. https://doi.org/10.1371/journal.pone.0045303

***ABSTRACT**: **Background:** The purpose of this work was to determine in a clinical trial the efficacy of reducing or preventing seizures in patients with neurological handicaps through sustained cortical activation evoked by passive exposure to a specific auditory stimulus (particular music). The specific type of stimulation had been determined in previous studies to evoke anti-epileptiform/anti-seizure brain activity.*

***Methods:** The study was conducted at the Thad E. Saleeby Center in Harstville, South Carolina, which is a permanent residence for individuals with heterogeneous neurological impairments, many with epilepsy. We investigated the ability to reduce or prevent seizures in subjects through cortical stimulation from sustained passive nightly exposure to a specific auditory stimulus (music) in a three-year randomized controlled study. In year 1, baseline seizure rates were established. In year 2, subjects were randomly assigned to treatment and control groups. Treatment group subjects were exposed during sleeping hours to specific music at regular intervals. Control subjects received no music exposure and were maintained on regular anti-seizure medication. In year 3, music treatment was terminated and seizure rates followed. We found a significant treatment effect (p = 0.024) during the treatment phase persisting through the follow-up phase (p = 0.002). Subjects exposed to treatment exhibited a significant 24% decrease in seizures during the treatment phase, and a 33% decrease persisting through the follow-up phase. Twenty-four percent of treatment subjects exhibited a complete absence of seizures during treatment.*

***Conclusion/Significance:** Exposure to specific auditory stimuli (i.e. music) can significantly reduce seizures in subjects with a range of epilepsy and seizure types, in some cases achieving a complete cessation of seizures. These results are consistent with previous work showing reductions in epileptiform activity from particular music exposure and offers potential for achieving a non-invasive, non-pharmacologic treatment of epilepsy. **Trial Registration:** www.Clinicaltrials.gov NCT01459692.*

Halford, J., Waters, C.G., Wolfe, B.J., Benbadis, S.R., Tatum, W.O., **Turner, R.P.**, Arain, A., Fountain, N., Sinha, S.R., et al. (2012), Comparison of Binary & Ordinal Scoring for Epileptiform Transient Detection. *American Epilepsy Society* 2012 Annual Meeting Abstract

***ABSTRACT: RATIONALE:** Reliable computerized detection of epileptiform transients (ETs), characterized by interictal spikes and sharp waves in the electroencephalogram (EEG), is a useful goal since this would assist physicians in reviewing scalp EEG recordings. It is our goal to create standardized datasets to help train automated ET detection algorithms. In this study, we used EEGnet, a distributed web-based platform for the analysis of scalp EEG recordings to compare the inter-rater reliability for marking ETs. Two different methods of scoring were compared. The first method involved labeling paroxysmal activity as either epileptiform or non-epileptiform (binary scoring). The second method involved labeling paroxysmal activity on a scale of 0-4, depending on the degree of epileptiform appearance (ordinal scoring).*

***METHODS:** One hundred 30-second routine scalp EEG segments from 100 different patients were selected for analysis. Fifty of these segments were selected because they contained ETs from patients with known epilepsy and the other fifty were selected because they contained benign paroxysmal activity (exaggerated alpha activity, wicket spikes, and small sharp spikes) which could easily be misinterpreted by an inexperienced reviewer. Scoring was performed in three phases by ACNS board certified academic neurophysiologists. In the first phase, seven scorers marked all of the paroxysmal activity in the segments (including epileptiform activity, other EEG activity, and artifacts). In the second phase, eleven scorers marked each paroxysmal event as either artifact, epileptiform activity, or non- epileptiform EEG activity. In the third phase, the eleven scorers categorized all of the events marked by at least one scorer (in phase two) as epileptiform as well as some randomly-selected non-epileptiform events as either non-epileptiform, or epileptiform on a scale of 1-4. For inter-rater analysis, we examined all pair-wise rater agreement scores using the kappa statistic and generated a composite score based on the average agreement score across all pairs for both the binary and the ordinal data. using Cicchetti-Allison weights. We also calculated the reliability coefficient described in Wilson et. al (1996) using the Spearman correlation.*

***RESULTS:** The average kappa value for the data with binary scores was 0.40 +/- 0.12 with correlations with a range of 0.12-0.59. The average kappa value for the data with ordinal scores was 0.42 +/- 0.078 with a range of 0.30-0.62. The kappa values were not significantly different between the binary and ordinal scoring, but the variability of the kappa values were greater for the binary in comparison to the ordinal scoring data. The reliability coefficient was not significantly different for the binary scoring method (0.89) compared to the ordinal scoring method (0.91).*

***CONCLUSIONS:** Inter-rater agreement for categorizing paroxysmal activity as epileptiform activity was moderate. The inter-rater agreement for binary and ordinal scoring were not significantly different, although there was decreased variability for the ordinal scoring.*

Hudspeth, M., Brown, E., Ragucci, D., Dixon, T., & **Turner, R.** (2012). Severe pruritus and hypothermia as the primary manifestations of human herpes virus-6 encephalitis after pediatric cord blood transplantation. *Bone Marrow Transplantation*, *47*(1), 153–154. https://doi.org/10.1038/bmt.2011.25

Halford, J. J., Pressly, W. B., Benbadis, S. R., Tatum, W. O., 4th, **Turner, R. P.**, Arain, A., Pritchard, P. B., Edwards, J. C., & Dean, B. C. (2011). Web-based collection of expert opinion on routine scalp EEG: software development and interrater reliability. *Journal of Clinical Neurophysiology*, 28(2), 178–184. https://doi.org/10.1097/WNP.0b013e31821215e3

***ABSTRACT:** Computerized detection of epileptiform transients (ETs), characterized by interictal spikes and sharp waves in the EEG, has been a research goal for the last 40 years. A reliable method for detecting ETs would assist physicians in interpretation and improve efficiency in reviewing long-term EEG recordings. Computer algorithms developed thus far for detecting ETs are not as reliable as human experts, primarily due to the large number of false-positive detections. Comparing the performance of different algorithms is difficult because each study uses individual EEG test datasets. In this article, we present EEGnet, a distributed web-based platform for the acquisition and analysis of large-scale training datasets for comparison of different EEG ET detection algorithms. This software allows EEG scorers to log in through the web, mark EEG segments of interest, and categorize segments of interest using a conventional clinical EEG user interface. This software platform was used by seven board-certified academic epileptologists to score 40 short 30-second EEG segments from 40 patients, half containing ETs and half containing artifacts and normal variants. The software performance was adequate. Interrater reliability for marking the location of paroxysmal activity was low. Interrater reliability of marking artifacts and ETs was high and moderate, respectively.*

Barley, J. L., Mooney, J. F., Glazier, S. S., Johnson, T., Kornegay, A. L., **Turner, R. P.**, & Edwards, J. C. (2010). Sudden appearance of new upper extremity motor function while performing neurophysiologic intraoperative monitoring during tethered cord release: a case report. *Journal of Pediatric Orthopedics*, 30(6), 624–628. https://doi.org/10.1097/BPO.0b013e3181e79041

ABSTRACT: *Tethered cord syndrome occurs when the distal spinal cord or filum adheres to adjacent structures resulting in progressive sensorimotor deficits in the lower extremities, fecal and/or urinary incontinence, and musculoskeletal deformities. Tethering of the distal cord may be idiopathic, may be associated with an intraspinal abnormality such as a lipoma, but most commonly the distal spinal cord remnant is adherent to the area of the original dysraphism repair in patients with myelodysplasia. Surgery to untether the cord is indicated in patients with worsening pain symptoms, progressive limb deformity or spasticity, or before any acute correction of an associated spinal deformity. Neurophysiologic intraoperative monitoring is used to minimize the risk of inadvertent nerve root or spinal cord injury during the untethering procedure and to assess any changes in cord function at the time of an associated spinal deformity correction. We present a patient with a lumbar level myelodysplasia, Chiari II malformation, severe scoliosis, and tethered cord that underwent concurrent scoliosis correction and tethered cord syndrome surgery, who demonstrated immediate intraoperative improvement in neurophysiologic responses in a previously flaccid upper extremity after untethering. These monitoring changes correlated with clinical improvements noted by physicians and family postoperatively.*

Turner R. P. (2009). Neurophysiologic intraoperative monitoring during selective dorsal rhizotomy. *Journal of Clinical Neurophysiology*, 26(2), 82–84. *https://doi.org/10.1097/WNP.0b013e31819f9077*

ABSTRACT: *Selective dorsal rootlet rhizotomy (SDR) is a neurosurgical procedure designed to reduce spasticity in the legs, although preserving motor and sensory function, of appropriately selected children with spastic quadraparesis. This is accomplished by neurophysiologically guided (e.g., selective) severing of specific dorsal rootlets in the cauda equina. This decreases facilitatory input to spinal anterior motor neurons, thereby reducing spasticity in the legs. This first portion of this article discusses the neurophysiologic intraoperative monitoring techniques during SDR, with the understanding that there are no universally agreed upon protocols nor standards of care. The second portion of the article reviews supporting data for the utility of SDR and long-term outcomes. With major benefits attributed to the selective nature of the procedure, SDR was increasingly used in the 1980-1990's after its introduction by Fasano et al. (Neurochirurgie. 1976;22:23-34; Acta Neurochir. 1977;suppl 24:53-57; Child's Brain. 1978;4:289-305) and revision by Peacock and colleagues (S Afr Med J. 1981;60:849-850; S Afr Med J. 1982;62:119- 124). More extensive SDR discussions of its history, theoretical and physiological bases, patient selection criteria, neurosurgical techniques, and postoperative and long-term management, may be found elsewhere.*

Bahadori, H. R., Williams, V. C., **Turner, R. P.**, Rumboldt, Z., Reigart, J. R., Fowler, S. L., Chavis, P. S., & Maria, B. L. (2007). Acute disseminated encephalomyelitis following infectious mononucleosis. *Journal of Child Neurology*, 22(3), 324–328. https://doi.org/10.1177/0883073807300534

ABSTRACT: *Two months following an Epstein-Barr virus infection, a 17-year-old white female presented with seizures, intermittent visual changes, and altered mental status. Magnetic resonance imaging showed white matter changes of acute disseminated encephalomyelitis with a predilection for posterior cerebral artery distributions but without radiological evidence of arteritis. Epstein-Barr virus titers and polymerase chain reaction analysis results for the virus were consistent with postinfectious acute disseminated encephalomyelitis. The symptoms and signs improved following treatment with high-dose corticosteroids and intravenous immunoglobulin. Although Epstein-Barr virus can cause acute viral encephalomyelitis, the authors report a case of acute disseminated encephalomyelitis months after acute Epstein-Barr virus infection.*

Selassie. A, Wannamaker, B., Pickelsimer, E., **Turner, R.P.,** Smith, G., Bailey, W., & Tyrell, M. (2007). The South Carolina Epidemiological Studies of Epilepsy & Seizure Disorders (SCESESD) – Final Report. Department of HHS, Centers for Disease Control and Prevention, 2007. http://people.musc.edu/~selassie/Epilepsy/SCESESD_Surveillance_Report.pdf

Li, Z., **Turner, R. P.**, & Smith, G. (2005). Childhood paroxysmal kinesigenic dyskinesia: report of seven cases with onset at an early age. *Epilepsy & Behavior*, 6(3), 435–439. https://doi.org/10.1016/j.yebeh.2005.01.011

ABSTRACT: *We report on seven children who developed abnormal involuntary movements as early as 11½ years after unremarkable term births. The paroxysmal episodes of abnormal movements were typically precipitated by sudden, voluntary movements, or a startle. The clinical features in each case were consistent with the diagnosis of paroxysmal kinesigenic dyskinesia (PKD). The episodes of abnormal movements are described. EEG was obtained in all cases, and video/electroencephalography (VEEG) monitoring was performed to exclude the possibility of epilepsy in six patients. VEEG studies revealed multiple events consistent with PKD; no ictal epileptiform discharges were recorded. The apparent benign nature of the disorder, as well as treatment options with antiepileptic drugs, was discussed with the parents, and most chose no pharmacologic treatment. We discuss clinical characteristics of PKD, treatment with anticonvulsant therapy, and recent insights into its possible pathophysiology.*

Turner R. P. (2004). The acute effect of music on interictal epileptiform discharges. *Epilepsy & Behavior*, *5*(5), 662–668. https://doi.org/10.1016/j.yebeh.2004.07.003

ABSTRACT: *This study was a prospective, randomized, single-blinded, crossover, placebo-controlled, pilot clinical trial investigating the effect of Mozart's Sonata for Two Pianos (K448) on the frequency of interictal epileptiform discharges (IEDs) from the EEGs of children with benign childhood epilepsy with centrotemporal spikes, or "rolandic" epilepsy. The goal was to demonstrate decreased frequency of IEDs with exposure to K448. Four subjects were recruited and 4-hour awake EEG recordings performed. IED frequency per minute was averaged over each of three epochs per hour. Mean IED count per epoch, standard deviations, and variance were calculated. Only complete waking epochs were analyzed. Two subjects demonstrated sufficient waking IEDs for statistical analysis, consisting of three epochs of K448-related effects. Significant decreases in IEDs per minute (33.7, 50.6, and 33.9%) were demonstrated comparing baseline with exposure to K448, but not to control music (Beethoven's Für Elise).*

Li, Z., & **Turner, R. P.** (2004). Pediatric tick paralysis: discussion of two cases and literature review. *Pediatric Neurology*, *31*(4), 304–307. https://doi.org/10.1016/j.pediatrneurol.2004.05.005

ABSTRACT*: This report describes two cases of tick paralysis in children diagnosed within a 3-month period (May-July 2002) in rural South Carolina. Differing presenting symptoms consisted of acute onset of ataxia in one patient and acute ascending paralysis in the other. Ticks were present on the scalp of both patients and were removed immediately. Both girls demonstrated improvement of signs and symptoms within hours and complete recovery within 24 hours of tick removal. The diagnosis of tick paralysis must be considered in any patient, particularly children, who present with either acute ataxia or acute ascending paralysis. As in any clinical encounter, careful history and thorough general and neurologic examinations must be performed to exclude the possibility of tick attachment.*

Turner RP. (2004). Can a Piano Sonata Help Children with Epilepsy? *Neurology Reviews*; Mar; 12(3):13.

Wildi, S. M., Cox, M. H., Clark, L. L., **Turner, R.**, Hawes, R. H., Hoffman, B. J., & Wallace, M. B. (2004). Assessment of health state utilities and quality of life in patients with malignant esophageal Dysphagia. *The American Journal of Gastroenterology*, 99(6), 1044–1049. https://doi.org/10.1111/j.1572-0241.2004.30166.x

ABSTRACT*: **OBJECTIVES**: Palliation of terminal conditions such as malignant dysphagia must take into account individual preferences for aggressive or nonaggressive care, with a focus on quality of life. Despite this, there are very few data on patients' preferences for palliative therapy. This study is designed to quantitatively determine individual preferences for palliation of malignant dysphagia using health state utilities (HSU).*
METHODS*: HSU were measured using three methods: time trade-off (TTO), visual analog scale (VAS), and the EQ-5D. Patients with esophageal cancer were asked to rate their own state of health and of three standardized scenarios of local, regional, and metastatic disease.*
RESULTS*: Fifty patients with esophageal cancer were enrolled. Using the TTO method, the utilities of their own health state were 0.80 (95% CI 0.59–0.99) for localized, 0.54 (0.37–0.70) for regional, and 0.52 (0.32–0.71) for metastatic cancer showing no significant difference in mean utility scores for the three staging groups. VAS and EQ5D gave statistically similar values to TTO. Patients consistently rated their own utility better than the utility of standardized scenarios with similar stage and prognosis. Independent of their staging, patients with high dysphagia scores rated their utility worse than patients with low dysphagia scores.*
CONCLUSIONS*: These results confirm the perceived poor state of health of patients with esophageal cancer and are substantially lower than previous estimates in operated patients. Cost-effectiveness models must take into account significant differences between patients' assessment of their own state of health, and that of a "societal" perspective of others with a similar disease. All three methods provided similar estimates. Given the ease of use of VAS and EQ-5D, these methods may be preferable to TTO.*

Turner RP. (2003). The acute effect of music periodicity on Rolandic spikes. *Epilepsia*; 44 (Suppl. 9):S58 (Abst. 1.159).

ABSTRACT*: 1.159 THE ACUTE EFFECT OF MUSIC PERIODICITY ON ROLANDIC SPIKES: A RANDOMIZED, SINGLE-BLINDED, CROSSOVER, PILOT CLINICAL TRIAL OF THE ACUTE EFFECT OF MUSIC WITH LONG-TERM PERIODICITY AND REPEATED MELODIC LINE (M-LTP/RML) ON INTERICTAL SPIKE DISCHARGES (ISD) IN CHILDREN WITH BENIGN CHILDHOOD EPILEPSY WITH CENTROTEMPORAL SPIKES (BCECTS).*
Rationale*: To investigate the effect of exposure to music with longterm periodicity and repeated melodic line (M-LTP/RML) on frequency of interictal spike discharges (ISDs) in children with benign childhood epilepsy with centrotemporal spikes (BCECTS). The goal of this pilot study was to demonstrate decreased ISDs due to exposure to MLTP/RML. Exposure to M-LTP/RML (Mozart's Sonata for Two Pianos, K448) has been shown to enhance spatial–temporal functioning. Both antiepileptiform and antiseizure properties of M-LTP/RLM have been demonstrated by the seminal work of John Hughes, without validation by clinical trial (Gates JR. Letter to the editor: the Mozart effect. Epilepsy Behav 2002;3:483; Hughes JR. Review: the Mozart effect. Epilepsy Behav 2002;2:396–417).*
A mechanism of this effect, not due to relaxation or enjoyment of the music, has been proposed based on the trion model of Mountcastle's columnar organization of the neocortex (Rauscher FH, Shaw GL. Key components of the Mozart effect. Percept Mot Skills 1998;86:835–41; ShawGL, Bodner M. Music enhances spatial- temporal reasoning: towards a neurophysiological basis using EEG. Clin Electroencephalogr 1999;30:151–5).
Methods*: Four subjects with BCECTS, aged 5–9 years, were recruited for this prospective, randomized, single-blinded, crossover, pilot clinical study. ISD frequency/minute was averaged over each of three periods/hour, over 4 h of continuous EEG monitoring: (a) Silence, 15 min; (b) Exposure, M-LTP/RML or control (placebo) music (Beethoven's Fur Elise) (18 min); and (c) Wash-out period, 27 min. Mean ISD count/epoch, standard deviations, variance, and correlation data were calculated.*
Results*: A significant (>30%) decrease in mean ISDs was demonstrated comparing baseline with exposure to M-LTP/RML, but not to control music, in two subjects demonstrating sufficient ISDs for data collection and statistical analysis.*
Conclusions*: Demonstration of decreased ISDs from exposure to MLTP/RML indicates an effect on mechanisms of spike generation. If reproducible in a sufficiently powered prospective, randomized clinical trial, this effect would contribute to understanding epileptogenesis and new treatment strategies for aborting and preventing seizures. A larger clinical trial is proposed to study this effect on spikes as well as seizures, with subsequent studies of mechanisms indicated. [Supported by Outpatient General Clinical Research Center (GCRC), Medical University of South Carolina.]*

Turner R.P. (2003). The effect of music periodicity on Rolandic spikes: A randomized, single-blinded, crossover, clinical trial. *Annals of Neurology*; 54(Suppl. 7):S134.

Turner R.P. (2003). Letter to the Editor. *Epilepsy & Behavior* 2003;4(5):592-93.

Turner R.P., Campbell, W.W., Pridgeon, R.M. (1990). The Pseudo-pseudo-ulnar Claw Hand. *Neurology*; 40(Suppl. 1):341.

Scholarly Chapters, Books, and Monographs:

1) Turner, R.P. (2022). Lifestyle and Environmental Influences on EEG, QEEG, and Neurofeedback. In: Chartier D, Dellinger MB, & Evans J, Ed: **Introduction to Quantitative EEG and Neurofeedback**, 3rd Edition. Elsevier.

2) **Turner RP**. (2020). Chapter 59: Realization of Neurofeedback-Based Healthcare in a Neurology Practice. In: Evans JR & Dellinger MB, Ed: ***Neurofeedback: The First 50 Years***. Elsevier, 2020.

3) Evans JR & **Turner RP** Editors. (2017). ***Rhythmic Stimulation Procedures in Neuromodulation***. Elsevier Academic Press 2017.

4) **Turner RP**. (2009). Chapter 28: Paroxysmal, Nonepileptic Disorders of Childhood. In: Maria BL, Ed: *Current Management in Child Neurology*, 4th ed. Hamilton, BC Decker, 2009

5) **Turner RP**. (2009). Chapter 31: Pediatric Epilepsy: Co-morbidity and Quality of Life. In: Maria BL, Ed: *Current Management in Child Neurology*, 4th ed. Hamilton, BC Decker, 2009

6) **Turner RP**. (2009). Hemimegalencephaly. In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2009, 2008, 2007,

7) **Turner RP**. (2009). Megalencephaly. In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2009, 2008, 2007,

8) **Turner RP**. (2009). Breath-holding spells. In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2009, 2008, 2007,

9) Selassie A (PI), Wannamaker B, Pickelsimer E, **Turner RP,** Smith G, Bailey W, Tyrell M. (2007). The South Carolina Epidemiological Studies of Epilepsy & Seizure Disorders (SCESESD)–Final Report. Department of HHS, Centers for Disease Control and Prevention, 2007. http://people.musc.edu/~selassie/Epilepsy/SCESESD_Surveillance_Report.pdf

10) **Turner RP**. (2005). Chapter 26: Paroxysmal, Nonepileptic Disorders of Childhood. In: Maria BL, Ed: *Current Management in Child Neurology*, 3rd ed. Hamilton, BC Decker, 2005

11) **Turner RP**. (2005). Chapter 29: Pediatric Epilepsy: Co-morbidity and Quality of Life. In: Maria BL, Ed: *Current Management in Child Neurology*, 3rd ed. Hamilton, BC Decker, 2005

12) **Turner RP** & Griesemer DA. (2005). Hemimegalencephaly. In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2001, 2005

13) **Turner RP** & Elder BB. (2003). Megalencephaly. In: Gilman S: *MedLink Neurology*. San Diego: MedLink Corp, 2003

Posters/Abstracts:

1) Paroxysmal Electroencephalographic Event Labeling and Categorization Using Distributed Clinical Research Software
Halford JJ. Pressly WBS. Benbadis SR. Tatum WO. Edwards JC. Pritchard PB. **Turner RP**.
American Clinical Neurophysiology Society Annual Meeting, Orlando, FL, March 2009
2) Importance of Long-term Video EEG to Differentiate Epilepsy from Non-Epileptic Events in Children: MUSC Four-Year Experience
Turner RP, Chen A; MUSC Student Research Day, November 2009
3) A clinical trial of the acute effect of music on human interictal epileptiform discharges
Turner RP 2nd International Congress for the Interdisciplinary Research on the Effects and the Experience of Music (Mozart & Science 2008), Vienna, Austria, November 2008
4) Long-Term Music Exposure Significantly Decreases Seizure Frequency in Neurologically-Impaired Individuals
Turner RP, Bodner M, Norment C; MUSC Student Research Day, November 2008
5) *Neurosomatic Outcomes of Traumatic Brain Injury: A Population-Based Study*.
Turner RP, Selassie AW, Ferguson PL, Wagner J, Lineberry L, Gu J.
58th Annual Meeting of the American Academy of Neurology, March, 2006
6) *Use of seizure and epilepsy codes in emergency department and inpatient discharges – SC, USA*.
Ferguson PL, Smith G, Selassie AW, **Turner RP**, Wannamaker BB, Tyrell M, Pope A, Cavins KA
26th International Epilepsy Congress, Aug 28–Sep 1, 2005, Paris, France
7) Predictors of new onset of epilepsy within 2 years following TBI: Population-based follow-up study.
Selassie AW, Ferguson PL, Pickelsimer EE, **Turner RP**, Thurman DJ
26th International Epilepsy Congress, Aug 28–Sep 1, 2005, Paris, France
8) *The frequency of epilepsy and seizure disorders among persons with TBI: A population-based evaluation of hospital discharges and emergency department visits in South Carolina, 1996-2001*.
AW Selassie, PL Ferguson, G Smith, E Pickelsimer, BB Wannamaker, **RP Turner**
American Epilepsy Society Annual Meeting, Platform Session, 2004
9) *Use of a statewide administrative dataset to determine number of seizure and epilepsy cases*.
PL Ferguson, G Smith, AW Selassie, **RP Turner**, BB Wannamaker
American Epilepsy Society Annual Meeting, 2004
10) *The acute effect of M-LTP-RML on IEDs in BCECTS*.
Robert P. Turner
American Epilepsy Society Annual Meeting, Dec 1-10, 2003, Boston, MA
11) *The effect of music periodicity on Rolandic spikes*.
Robert P. Turner
Child Neurology Society Annual Meeting, Oct 1-4, 2003, Miami Beach, Florida
12) *The Pseudo-pseudoulnar Claw Hand: A Presentation of C8 Radiculopathies*.
Robert P. Turner, William W. Campbell, Rhonda M. Pridegeon, Alan Freeman
Amer. Acad. of Neurology Annual Meeting, Fountainbleau Hilton, May, 1990; Poster Session

Peer-Reviewed Articles Submitted:

Problems in the Prenatal Diagnosis of Microcephaly: Fetal Microcephaly due to Fetal Micro-lissencephaly.
Paddy Jim Baggot, **Robert P. Turner**, James T. Christmas, and Thomas C. Markello
Submitted for publication, 7 February 1996, ***American Journal of Human Genetics***