

Supplementary Table S1. NIH Quality Assessment

First Author	Year	Study	Quality Assessment											
			Case-Controls								Exposure prior to Outcome Measurement	Valid Exposure Assessment	Assessor Blinding	Analyses for Confounds
			Research Question	Study Population	Power Calculation	Recruited from Same Population	Inclusion/ Exclusion	Defined Case/ Control	Random Selection	Concurrent Controls				
Allendorfer	2019	FMRI response to acute psychological stress differentiates patients with psychogenic non-epileptic seizures from healthy controls – A biochemical and neuroimaging biomarker study.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Apazoglou	2017	Biological and perceived stress in motor functional neurological disorders.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Aydin	2011	Time-dependent changes in the serum levels of prolactin, nesfatin-1 and ghrelin as a marker of epileptic attacks young male patients.	✓	X	X	✓	✓	✓	NA	NR	✓	✓	NR	NR
Bakvis	2009	Trauma, stress, and preconscious threat processing in patients with psychogenic nonepileptic seizures.	✓	✓	X	X	✓	✓	X	X	✓	✓	NR	✓
Bakvis	2009	Basal cortisol is positively correlated to threat vigilance in patients with psychogenic nonepileptic seizures.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Bakvis	2010	Basal hypercortisolism and trauma in patients with psychogenic nonepileptic seizures.	✓	✓	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Bakvis	2011	Automatic avoidance tendencies in patients with psychogenic non-epileptic seizures.	✓	✓	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Büyükaslan	2019	Evaluation of mean platelet volume, red cell distributed width and neutrophil to lymphocyte ratio in conversion disorder.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Ceylan	2018	Serum NT-pro CNP levels in epileptic seizure, psychogenic non-epileptic seizure, and healthy subjects.	✓	✓	X	✓	✓	✓	NA	NR	✓	✓	NR	NR
De Oliveira	2009	Movement-induced heart rate changes in epileptic and non-epileptic seizures.	✓	X	X	✓	X	✓	X	✓	✓	✓	NR	NR
De Oliveira	2007	Heart rate analysis differentiates dialeptic complex partial temporal lobe seizures from auras and non-epileptic seizures.	✓	X	X	✓	X	✓	X	✓	✓	✓	NR	NR
Demartini	2016	Psychogenic non-epileptic seizures and functional motor symptoms: A common phenomenology?	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	✓

Deveci	2007	Serum brain-derived neurotrophic factor levels in conversion disorder: Comparative study with depression.	✓	X	X	✓	✓	✓	NA	NR	✓	✓	NR	NR
Dreissen	2017	Startle responses in functional jerky movement disorders are increased but have a normal pattern.	✓	X	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Gallagher	1987	Endocrine abnormalities in human temporal lobe epilepsy.	✓	X	X	✓	X	✓	NA	NR	✓	NR	NR	NR
Gallagher	1984	Pituitary and adrenal function in epileptic patients.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	NR
Herrero	2020	Skin conductance response and emotional response in women with psychogenic non-epileptic seizures.	✓	✓	X	✓	✓	✓	NA	✓	✓	✓	NR	✓
Heyer	2018	Signs of autonomic arousal precede tilt-induced psychogenic nonsyncopal collapse among youth.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	NR
Higgitt	1990	The prolonged benzodiazepine withdrawal syndrome: Anxiety or hysteria?	✓	X	X	X	X	✓	NA	NR	✓	NR	NR	✓
Holtkamp	2006	Diagnosis of psychogenic nonepileptic status epilepticus in the emergency settings.	✓	✓	X	✓	✓	✓	X	✓	✓	X	NR	✓
Jeppesen	2016	Comparing maximum autonomic activity of psychogenic non-epileptic seizures and epileptic seizures using heart rate variability.	✓	✓	X	✓	X	✓	X	✓	✓	✓	NR	NR
Khanam	2008	Serum immunoglobulin profiles of conversion disorder patients.	✓	X	X	NR	✓	✓	X	NR	✓	✓	NR	✓
Kotwas	2019	Subjective and physiological response to emotions in temporal lobe epilepsy and psychogenic non-epileptic seizures.	✓	X	X	✓	✓	✓	X	✓	✓	✓	NR	NR
Kozłowska	2015	Reduction of autonomic regulation in children and adolescents with conversion disorders.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Kozłowska	2017	The Respiratory Control of Carbon Dioxide in Children and Adolescents Referred for Treatment of Psychogenic Non-Epileptic Seizures.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	NR
Kozłowska	2018	"Motoring in idle": The default mode and somatomotor networks are overactive in children and adolescents with functional neurological symptoms.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Kugu	2004	Muscle enzymes, blood gases and quantitative EEG in differential diagnosis of generalized tonic-clonic seizures and conversive non-epileptic seizures.	✓	X	X	NR	✓	✓	NA	NR	✓	✓	NR	NR
Lader	1968	Anxiety in patients with hysterical conversion symptoms.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	NR
Lafrance Jr	2010	Decreased serum BDNF levels in patients with epileptic and psychogenic nonepileptic seizures.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Matz	2016	Lactate as a diagnostic marker in transient loss of consciousness.	✓	✓	X	✓	✓	✓	NA	✓	✓	✓	NR	NR

Maurer	2016	Impaired resting vagal tone in patients with functional movement disorders.	✓	✓	X	X	✓	✓	X	X	✓	X	NR	✓
Maurer	2015	Biological measure of stress levels in patients with functional movement disorders.	✓	✓	X	X	✓	✓	NA	✓	✓	✓	NR	✓
Mehta	1994	Prolactin and cortisol levels in seizure disorders.	✓	X	X	X	X	✓	NA	NR	✓	✓	NR	NR
Miani	2019	Predicting psychogenic non-epileptic seizures from serum levels of neuropeptide Y and adrenocorticotrophic hormone.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Mungen	2010	Autonomic nervous system functions in interictal and postictal periods of nonepileptic psychogenic seizures and its comparison with epileptic seizures.	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	NR	✓
Novakova	2017	Diurnal patterns and relationships between physiological and self-reported stress in patients with epilepsy and psychogenic non-epileptic seizures.	✓	X	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Olaciregui	2018	The discriminative value of blood gas analysis parameters in the differential diagnosis of transient disorders of consciousness.	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	NR	NR
Opherk	2002	Ictal heart rate differentiates epileptic from non-epileptic seizures.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	NR
Pankova	1983	Autonomic-humoral regulation in neuroses and neurotic development of the personality.	✓	X	X	X	X	X	NA	NR	✓	✓	NR	NR
Pick	2020	Dissociation and interoception in functional neurological disorder.	✓	X	X	✓	✓	✓	NA	✓	✓	✓	NR	✓
Pick	2018	Autonomic and subjective responsivity to emotional images in people with dissociative seizures.	✓	X	X	✓	X	✓	X	✓	✓	✓	NR	✓
Pick	2016	Explicit Facial Emotion Processing in Patients With Dissociative Seizures.	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	NR	✓
Ponnusamy	2012	Comparison of heart rate variability parameters during complex partial seizures and psychogenic nonepileptic seizures.	✓	✓	X	✓	✓	✓	X	✓	✓	✓	NR	✓
Ponnusamy	2011	Heart rate variability measures as biomarkers in patients with psychogenic nonepileptic seizures: Potential and limitations.	✓	✓	X	X	✓	✓	X	X	✓	✓	NR	✓
Radmanesh	2020	Activation of Functional Brain Networks in Children With Psychogenic Non-epileptic Seizures.	✓	✓	X	✓	✓	✓	NA	✓	✓	✓	NR	✓
Redlich	1945	Organic and hysterical anesthesia; a method of differential diagnosis with the aid of the galvanic skin response.	✓	X	X	NR	X	X	NA	✓	✓	NR	NR	NR
Reinsberger	2012	Pre- and postictal, not ictal, heart rate distinguishes complex partial and psychogenic nonepileptic seizures.	✓	✓	X	✓	X	X	X	✓	✓	✓	✓	NR

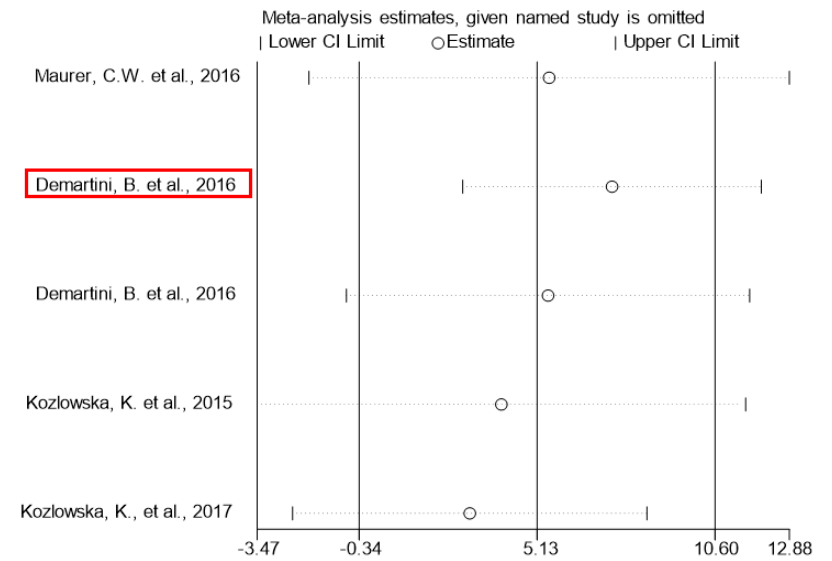
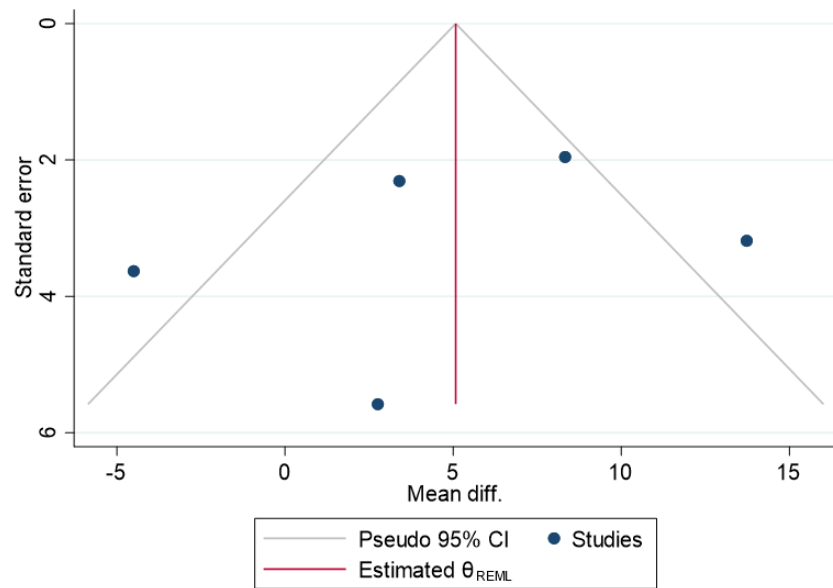
Reinsberger	2015	Autonomic changes in psychogenic nonepileptic seizures: toward a potential diagnostic biomarker?	✓	X	X	✓	NR	✓	X	✓	✓	✓	NR	NR
Rice	1969	Psychophysiological correlates of la belle indifference.	✓	X	X	✓	✓	X	NA	✓	✓	NR	NR	NR
Roberts	2012	Emotion in psychogenic nonepileptic seizures: Responses to affective pictures.	✓	X	X	X	✓	✓	NA	✓	✓	✓	NR	✓
Roberts	2019	Emotional Reactivity as a Vulnerability for Psychogenic Nonepileptic Seizures? Responses While Reliving Specific Emotions.	✓	✓	X	✓	NR	✓	X	✓	✓	✓	NR	✓
Romigi	2020	Heart Rate Variability Parameters During Psychogenic Non-epileptic Seizures: Comparison Between Patients With Pure PNES and Comorbid Epilepsy.	✓	✓	X	✓	✓	✓	X	✓	✓	NR	NR	✓
Sanyal	1998	Electro-dermal arousal and self-appraisal in patients with somatization disorder.	✓	X	X	NR	NR	✓	NR	✓	✓	✓	NR	NR
Seignourel	2007	Abnormal affective startle modulation in individuals with psychogenic [corrected] movement disorder.	✓	X	X	X	✓	✓	X	NR	✓	✓	NR	NR
Shah	2001	Peripheral WBC Count and Serum Prolactin Level in Various Seizure Types and Nonepileptic Events.	✓	X	X	NR	✓	NA	NA	NR	✓	✓	NR	✓
Tiyekli	2013	Proinflammatory cytokine levels in patients with conversion disorder.	✓	✓	X	NR	✓	✓	X	✓	✓	✓	NR	✓
Tunca	1996	Is conversion disorder biologically related with depression?: A DST study.	✓	X	X	✓	✓	✓	NA	NR	✓	NR	NR	✓
Wyllie	1985	Postictal Serum Creatine Kinase in the Diagnosis of Seizure Disorders.	✓	X	X	X	X	X	NA	✓	✓	NR	NR	NR
Zhang	2008	Changes of serum adrenocorticotrophic hormone and cortisol levels during sleep seizures.	✓	X	X	X	X	✓	NA	NR	✓	✓	NR	NR
Zito	2019	Abnormal postural behavior in patients with functional movement disorders during exposure to stress.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	✓
Winterdahl	2017	Vulnerability to psychogenic non-epileptic seizures is linked to low neuropeptide Y levels.	✓	X	X	X	✓	✓	NA	NR	✓	✓	NR	✓

			Cohort Studies													
			Research question	Study population	Participation rate at least 50%	Groups recruited from the same population? Uniform criteria?	Sample size justification	Exposure of interest measured prior to outcome	Timeframe sufficient to expect outcome	For exposures that vary in amount - was the exposure stratified?	Exposure measures clearly defined	Exposure assessed more than once	Valid outcome measures	Outcome assessors blind	Follow-up after baseline 20% or less?	Confounding variables measured and adjusted?
Claffey	2020	Near-infrared spectroscopy in evaluating psychogenic pseudosyncope - A novel diagnostic approach.	✓	X	NA	NA	X	✓	NA	NA	✓	X	✓	NR	NA	X
Kozłowska	2019	Blood CRP levels are elevated in children and adolescents with functional neurological symptom disorder.	✓	✓	✓	NA	X	✓	NA	NA	✓	NR	✓	NR	X	✓
Rabavilas	1989	Clinical significance of the electrodermal habituation rate in anxiety disorders.	✓	X	NA	NA	X	✓	NA	NA	✓	X	✓	NR	NA	X
Sawchuk	2020	Psychogenic non-epileptic seizures in children - psychophysiology & dissociative characteristics.	✓	✓	✓	NA	X	✓	NA	NA	✓	X	✓	NR	✓	✓
van der Kruijs	2016	Autonomic nervous system functioning associated with psychogenic nonepileptic seizures: Analysis of heart rate variability	✓	✓	NA	NA	X	✓	NA	NA	✓	✓	✓	NR	NA	X

Abbreviations: NR: Not reported; NA: Not applicable.

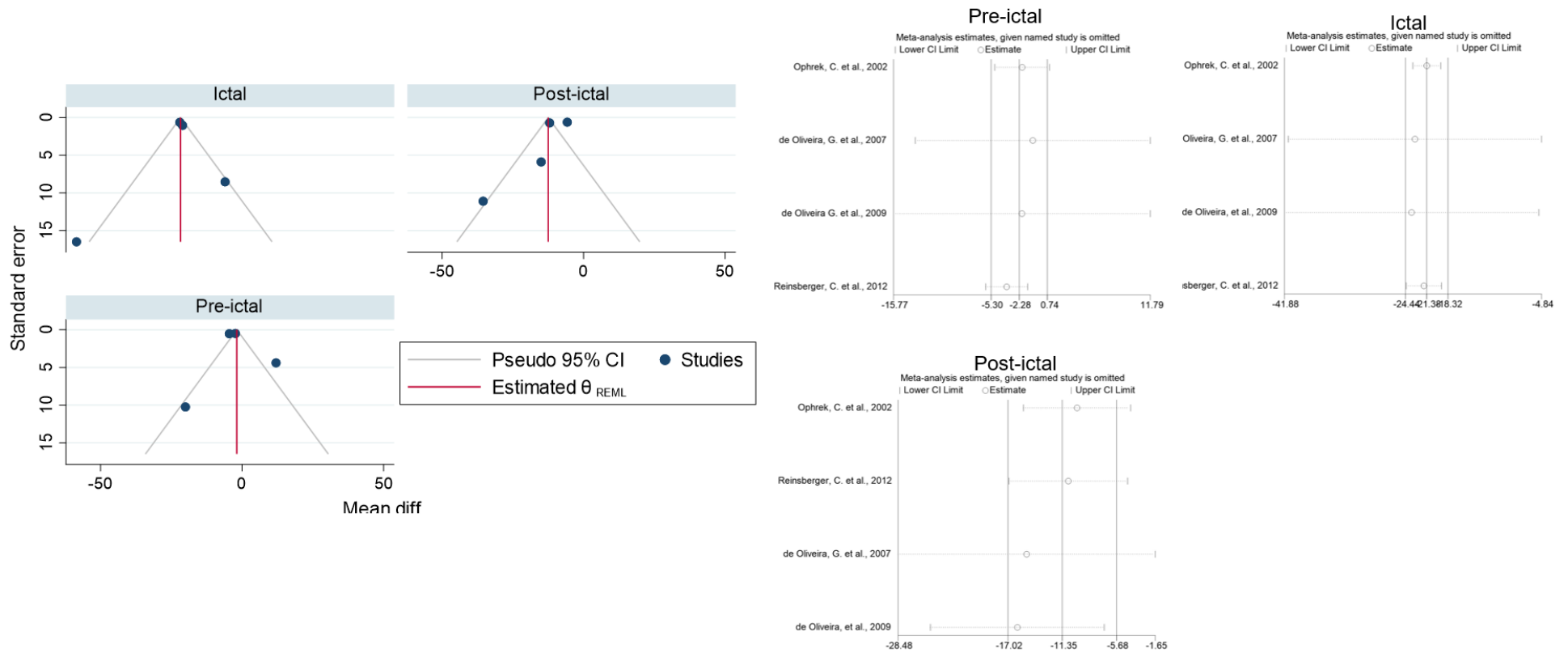
Supplementary Figure 1

Funnel Plot and Sensitivity Analysis of Baseline Heart Rate between Functional Neurological Disorder Patients vs. Healthy Controls



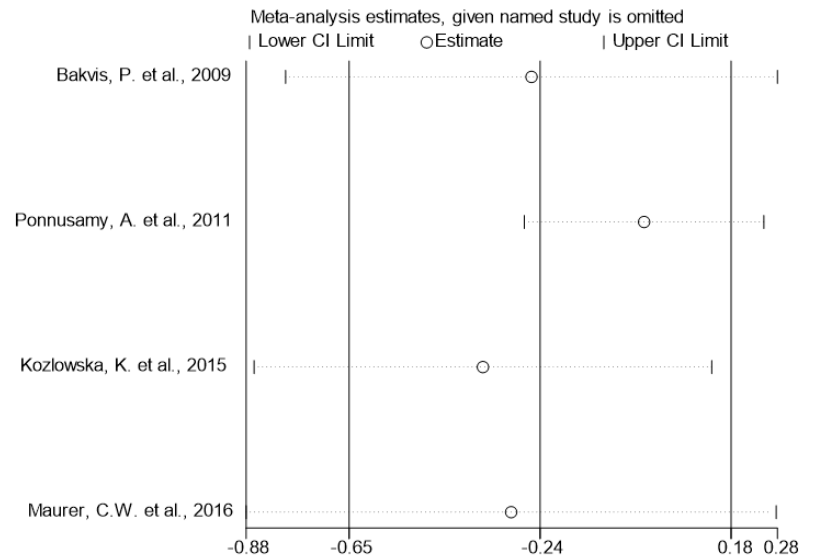
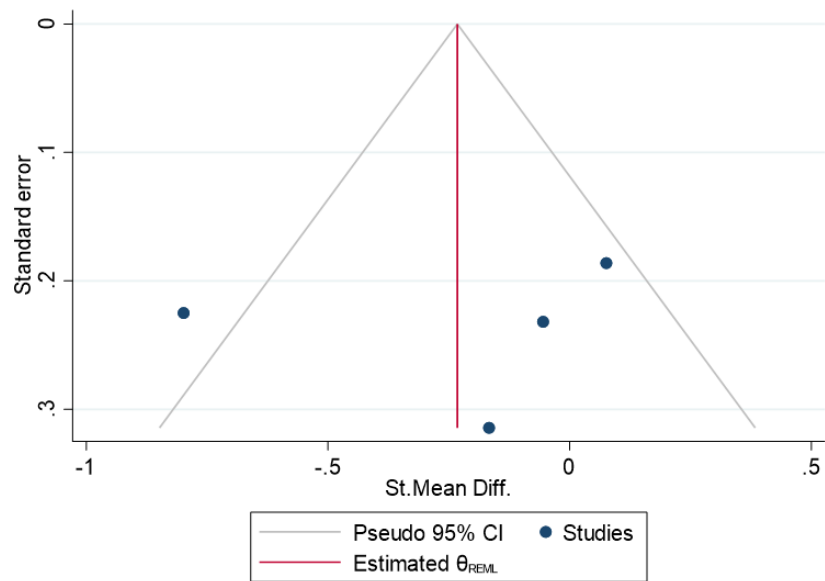
Supplementary Figure 2

Funnel Plot and Sensitivity Analysis of Peri-Ictal Heart Rate between Functional Neurological Disorder vs. Epilepsy Patients



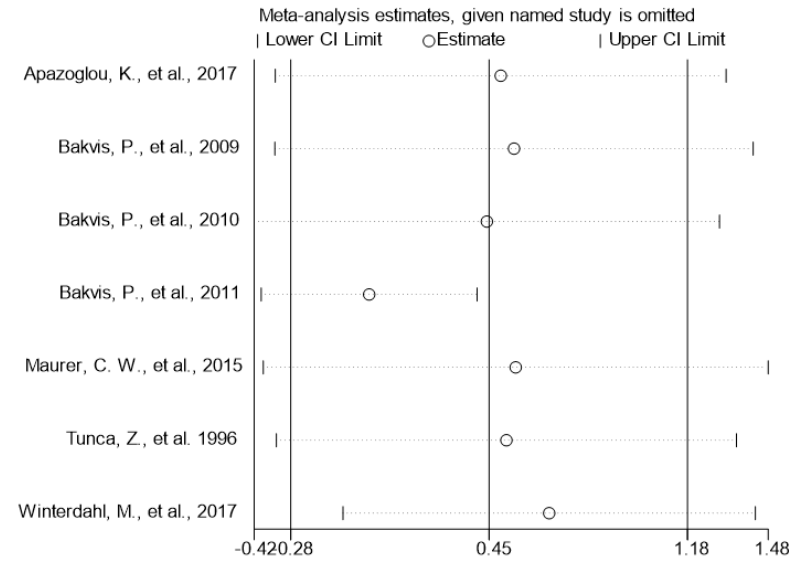
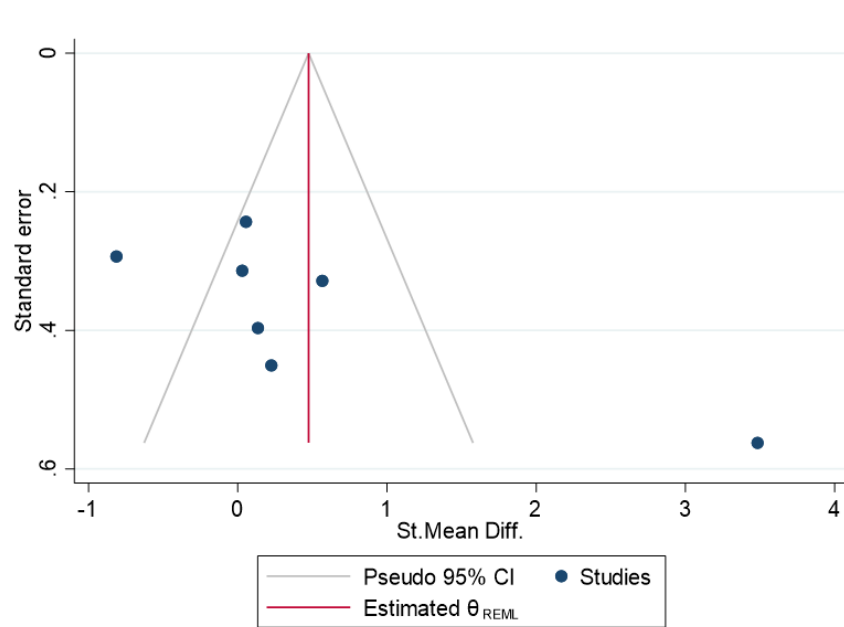
Supplementary Figure 3

Funnel Plot and Sensitivity Analysis of Baseline Heart Rate Variability between Functional Neurological Disorder Patients vs. Healthy Controls



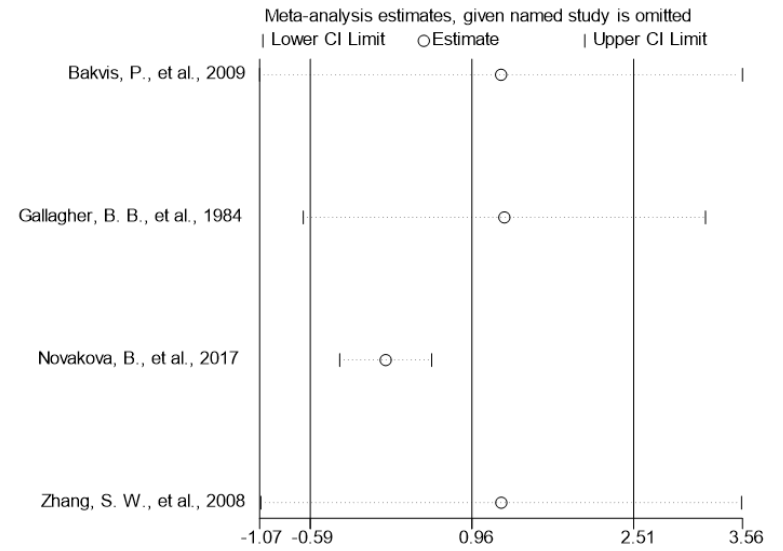
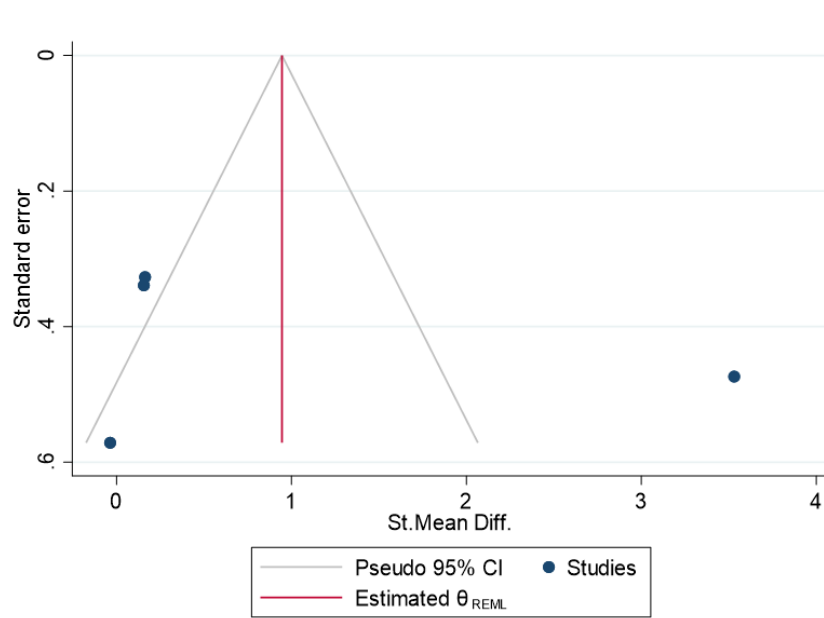
Supplementary Figure 4

Funnel Plot and Sensitivity Analysis of Baseline Cortisol between Functional Neurological Disorder Patients vs. Healthy Controls



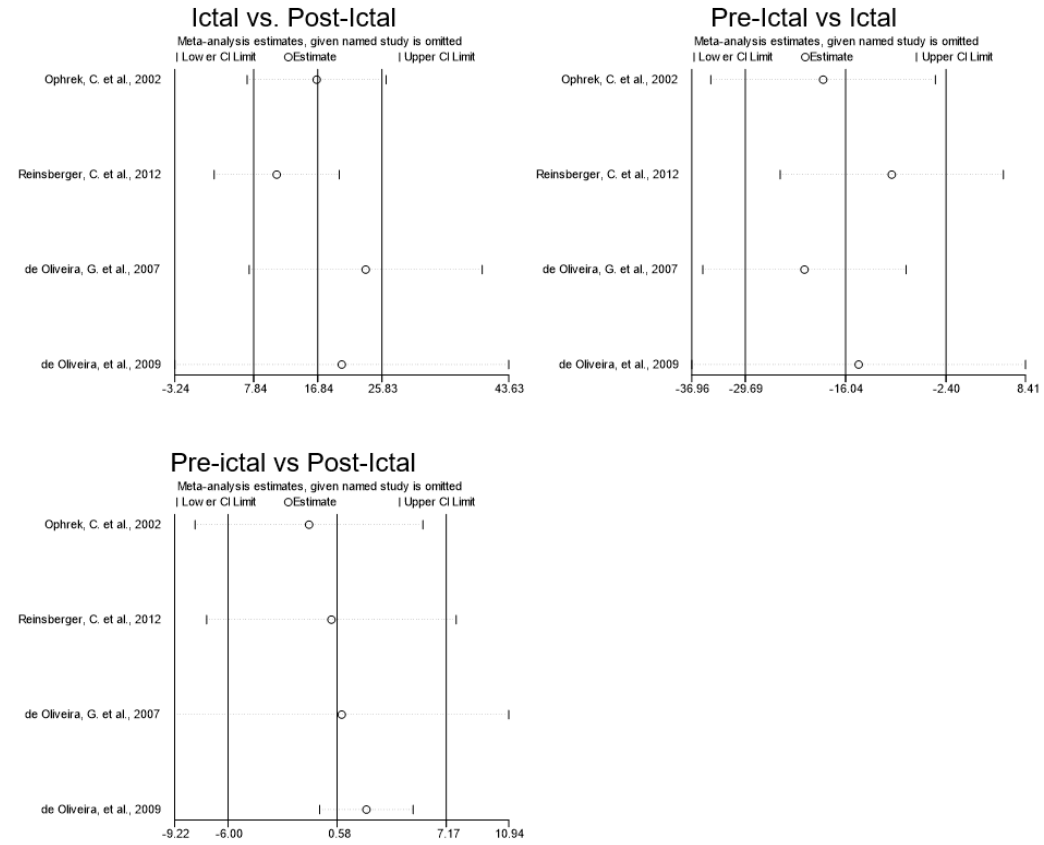
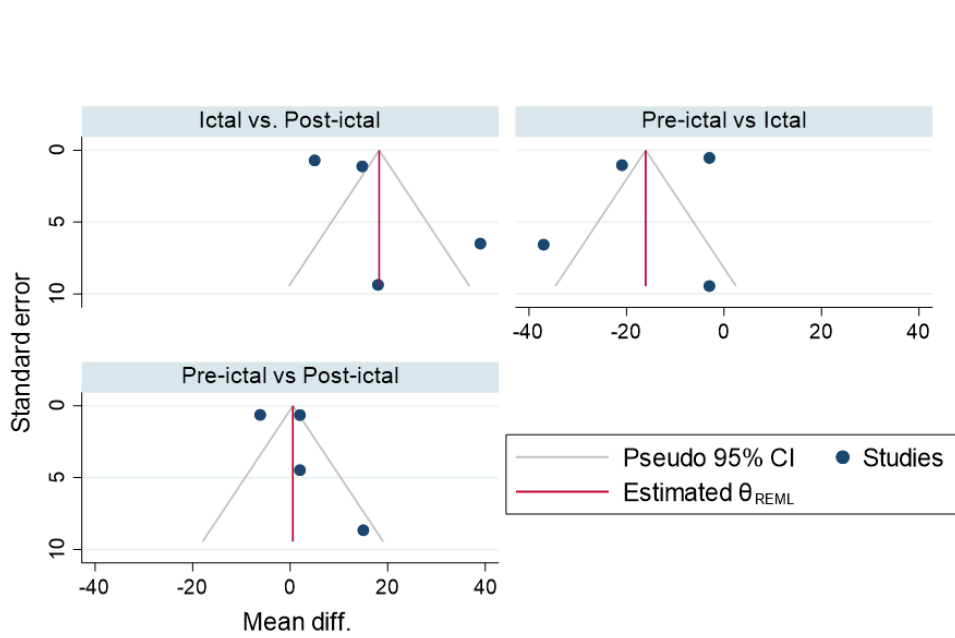
Supplementary Figure 5

Funnel Plot and Sensitivity Analysis of Baseline Cortisol between Functional Neurological Disorder vs. Epilepsy Patients



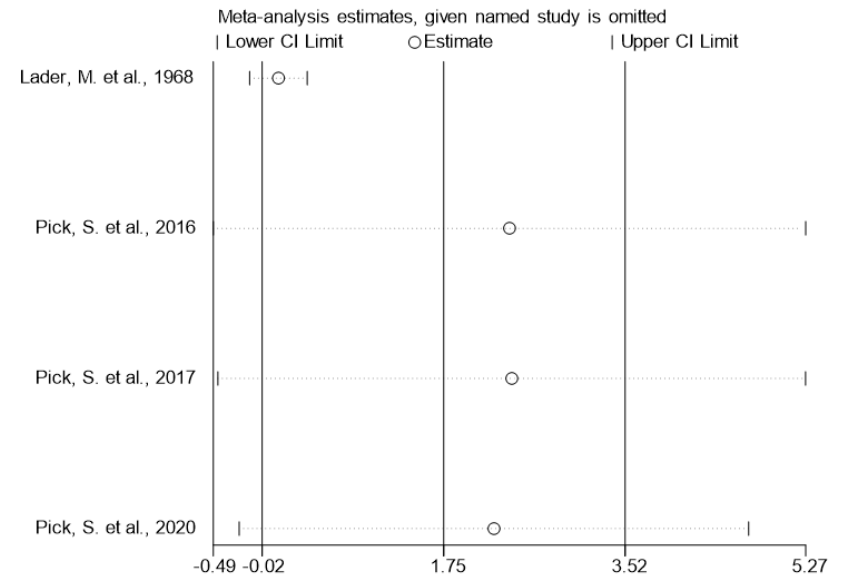
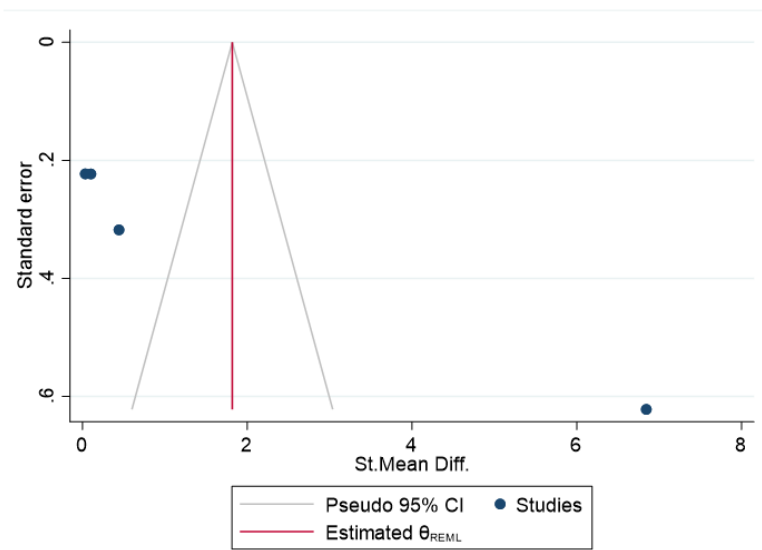
Supplementary Figure 6

Funnel Plot and Sensitivity Analysis of Within-Group Comparison of Functional Neurological Disorder Peri-Ictal Heart Rate



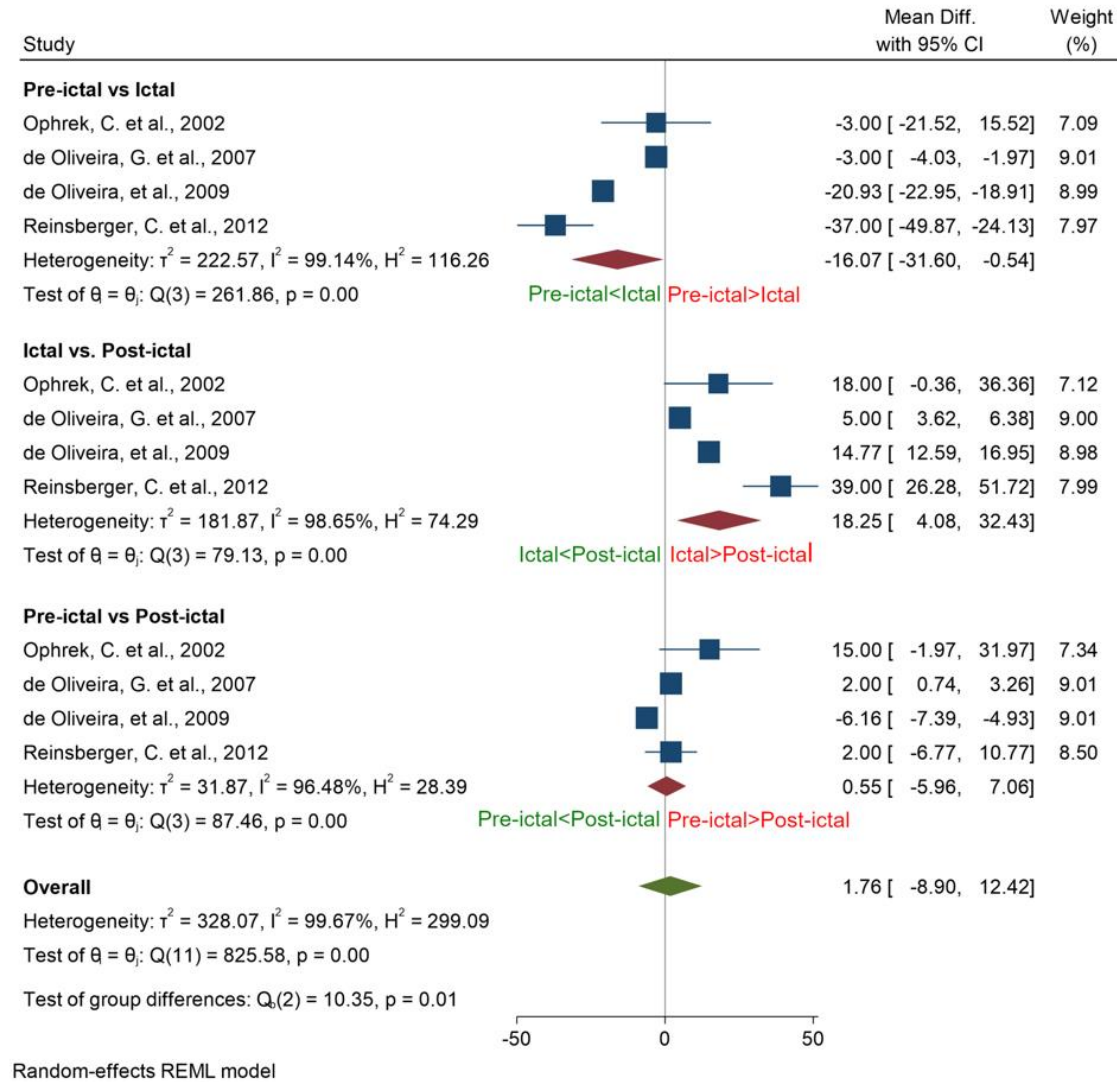
Supplementary Figure 7

Funnel Plot and Sensitivity Analysis Task Skin Conductance Levels in Functional Neurological Disorder vs. Healthy Controls



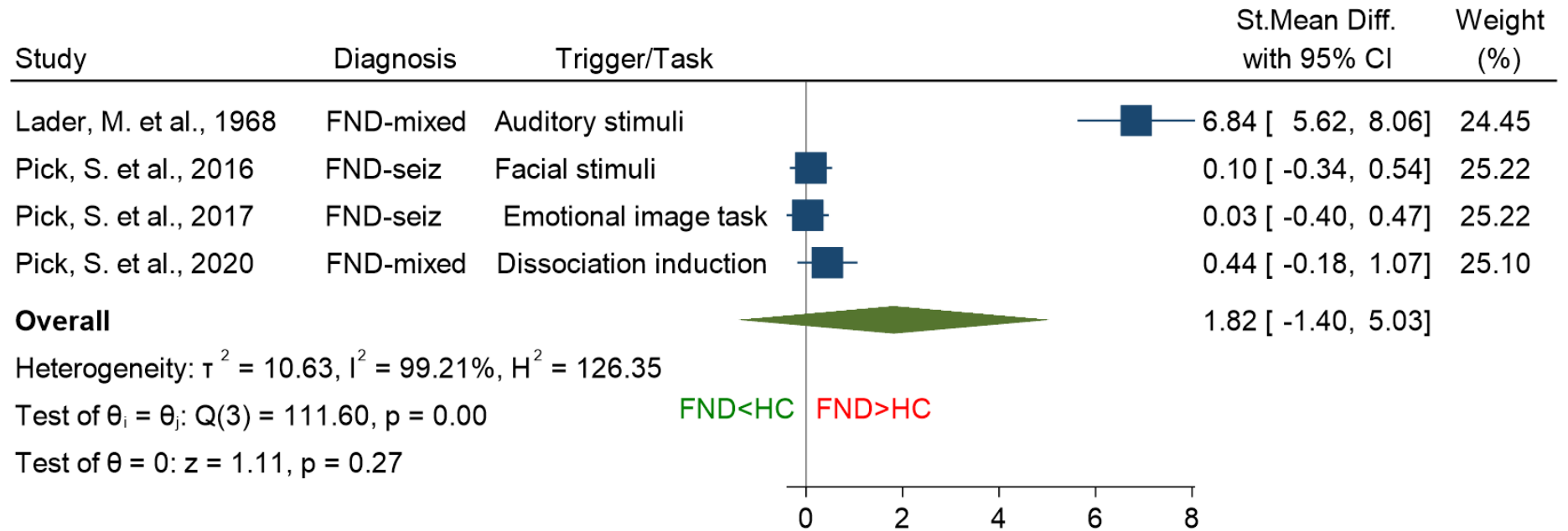
Supplementary Figure 8

Within-Group Comparison of Peri-ictal Heart Rate in Functional Neurological Disorder



Supplementary Figure 9

Task Skin Conductance Levels in Functional Neurological Disorder vs Healthy Controls



Random-effects REML model