



JAMSHID GHAJAR, MD, PhD, FACS

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CURRENT POSITIONS

1995 - President, Brain Trauma Foundation

2023- Principal, NeuroHealth Consulting

EDUCATION

B.A., 1973	University of California, Los Angeles Bachelor's Degree, Biology
M.A., 1975	University of California, Los Angeles, Master's Degree, Neurobiology
M.D., 1981	Cornell University Medical College, M.D./Ph.D. Program
Ph.D., 1983	Cornell University Graduate School of Medical Sciences: Major Field: Neurobiology & Behavior Minor Field: Biochemistry & Pharmacology

GRADUATE MEDICAL TRAINING

1981-1982	Surgical Internship, The New York Hospital
1983-1987	Neurosurgery Residency, The New York Hospital

BOARD CERTIFICATION AND LICENSURE

1982	Medicine and Surgery, State of New York
1993	American Board of Neurological Surgeons
1994	Fellow American College of Surgeons
2014	Physician and Surgeon, State of California

PAST POSITIONS HELD

1986 - 1987	Senior Clinical Associate in Surgery Chief Resident Neurosurgeon, The New York Hospital-Cornell Medical Center
1987 - 1995	Director of the Aitken Neurosurgery Laboratory Cornell University Medical College

1987 - 1993	Assistant Attending Neurosurgeon The New York Hospital-Cornell Medical Center
1987 - 1993	Assistant Professor of Surgery (Neurosurgery) Cornell University Medical College
1993 - 2003	Associate Attending Neurosurgeon The New York Hospital-Cornell Medical Center
1993 - 1995	Associate Professor of Surgery (Neurosurgery) Cornell University Medical College
1995 - 2003	Clinical Associate Professor of Surgery (Neurosurgery) Cornell University Medical College
2003 - 2014	Attending Neurosurgeon The New York Presbyterian Hospital
2003 - 2014	Clinical Professor of Neurological Surgery Weill Cornell Medical College
1989 - 2014	Chief of Neurosurgery The Jamaica Hospital-Cornell Trauma Center
2014 - 2019	Director of the Stanford Concussion and Brain Performance Center
2014 - 2022	Clinical Professor of Neurosurgery, Stanford
2019 - 2022	The Moghadam Family Director of the Stanford Brain Performance Center

RESEARCH INSTITUTIONS

1970 - 1972	Neuropsychiatric Institute, U.C.L.A. EEG and auditory evoked response analysis during sleep of normal and autistic children.
1972 - 1973	Biology Department, U.C.L.A. Honors research studying mechanism of calcium activation of neurotransmitter release at the neuromuscular junction.
1973 - 1975	Brain Research Institute, U.C.L.A. Master's degree thesis research in neuronal connectivity.
1975 - 1983	Laboratory of Cerebral Metabolism, Cornell University Medical College Ph.D. thesis research in brain metabolism during hypoglycemia and recovery. Thesis advisers: Drs. Thomas Duffy and Fred Plum.
1987 - 1995	Aitken Neurosurgery Laboratory, Cornell University Medical College Principal Investigator, pathophysiology of traumatic brain injury.
1995 -	Brain Trauma Foundation Mission: to improve the outcome of patients with traumatic brain injury.
2014 - 2022	Stanford Brain Performance Center Mission: Brain performance innovation to advance the neuroscience of attention in development, injury, and aging.

CURRENT GRANT SUPPORT (PI Ghajar)

9/21 - 9/23 **PI: Department of Defense:** \$1.4M for Penetrating/Blast TBI Guidelines.

PAST GRANT SUPPORT

1/88 - 2/89 Principal Investigator, Peer reviewed program project that established a neurotrauma laboratory. Aitken Charitable Trust grant.

3/89 - 11/89 Principal Investigator, Intracranial pressure and brain compliance changes following fluid percussion injury and hemorrhagic shock. Aitken Charitable Trust grant

12/89 - 11/90 Principal Investigator, Development of a human glial tissue culture barotrauma model and inflammation biology laboratory. Aitken Charitable Trust grant.

12/90 - 12/91 Principal Investigator, Parenchymal and tissue culture response to endotoxin. Aitken Charitable Trust grant.

1/92 - 1/93 Principal Investigator, IL-1, IL-6 and tumor necrosis factor production following traumatic brain injury. Aitken Charitable Trust grant.

12/91 - 12/92 Principal Investigator, Nationwide survey of Neurotrauma centers critical care practices. Brain Trauma Foundation.

1/93 - 1/94 Principal Investigator, Pathophysiology of post traumatic cerebral inflammation. Aitken Charitable Trust grant.

1/94 - 12/95 Principal Investigator, In vivo videomicroscopy of post traumatic leukocyte activation. Aitken Charitable Trust grant.

1/96 - 1/98 Principal Investigator, Identification of ventricular zone precursor cells and their potential role as progenitor neural cells. Aitken Charitable Trust grant.

5/97- 5/02 Principal Director, Physician education and development of a patient database for severe head injury in Eastern Europe. Soros-Open Society Foundation.

7/98 - 7/06 Principal Director, Develop and implement Guidelines for prehospital management of traumatic brain injury. U.S. Department of Transportation, National Highway Traffic Safety Administration.

11/01 - 11/03 Principal Investigator, Compliance with Intensive Care Guidelines and Outcomes Following Severe Brain Injury. The Jacob and Valeria Langeloth Foundation.

11/02 - 6/07 Principal Investigator, Cognitive and Neurobiological Research Consortium in Traumatic Brain Injury. The James S. McDonnell Foundation. Clinical research project studying neural connectivity in mild TBI from ER through long term outcome.

9/08 - 9/09	Principal Investigator, "Differentiating the Severity of Mild and Moderate Traumatic Brain Injury using High Temporal Resolution Attention Metrics and MRI-Diffusion Tensor Imaging "Telemedicine and Advanced Technology Research Center, U.S. Army Medical Research and Materiel Command.
01/09 - 01/12	Principal Investigator, Attention Dynamics Consortium in Traumatic Brain Injury. The James S. McDonnell Foundation. Clinical research project studying temporal and spatial neural network dynamics in mild TBI using MEG/EEG, fMRI and MRI-DTI.
10/11 - 2/12	Co – Principal Investigator. Subcontract, "Enygma Gym- improving attention using eye-tracking. Funded by DARPA, Department of Defense.
2/00 - 2013	Principal Director, New York State traumatic brain injury quality assurance program. Annual funding NYS Department of Health.
9/08 - 9/14	Principal Investigator, "Eye-Tracking Rapid Attention Computation." TBI Advanced Technology – Therapeutic Development Award. Department of Defense (DOD). Awarded \$5.1 million.
1/14 - 12/14	Principal Investigator, "Multi-Dimensional Model for Brain Trauma." Department of Defense (DOD). The goal is to develop a dynamic model for concussion, validate it on a retrospective dataset, and design a second study to validate it on a prospective dataset. Awarded \$471,525.
10/11 - 10/15	Principal Investigator, "Concussion Definition Consortium – An Evidence Based Project". Department of Defense (DOD). Awarded \$2,241,745.
12/11 - 12/16	Principal Investigator, "EYE-TRAC Advance". Department of Defense (DOD). Testing 10,000 subjects with normal and post concussive eye tracking. Military and civilian athletes are included. Awarded \$20.5 million.
9/14 - 4/19	Principal Investigator, "Brain Trauma Evidence-based Consortium". Department of Defense (DOD). The goal is to be an evidence-based hub to develop a concussion classification system and coordinate clinical trials to assure evidence based products. Awarded \$12.1 million.
9/14 - 9/19	Investigator: TBI Endpoints Development UCSF awardee Dr. Geoff Manley.
8/21 - 8/22	PI: Cohen Veterans Bioscience: \$1M for Concussion Guidelines.
7/19 - 7/22	Co-PI, Pac-12: \$350K for subtypes of concussion grant.
11/19 - 5/22	PI: Packard Foundation: \$250K grant to study concussion classification.

AWARDED PATENTS

Attention patents:

U.S. Patent Number 7,384,399	Cognition and Motor Timing Diagnosis and Training System and Method
U.S. Patent Number 7,384,399	Method for Improving Cognition and Motor Timing – Divisional Patent
U.S. Patent Number 7,384,399	Cognition and Motor Timing Diagnosis Using Smooth Eye Pursuit Analysis – Continuation in Part Patent
U.S. Patent Number 7,708,700	Training system and method for improving cognition and motor timing
U.S. Patent Number 7,819,818	Cognition and motor timing diagnosis using smooth eye pursuit analysis
U.S. Patent Number 8,048,002	Method for improving cognition and motor timing
U.S. Patent Number 9,721,476	System and method for dynamic cognitive training
U.S. Patent Number 9,958,939	System and method for dynamic content delivery based on gaze analytics
E.P. Patent Number 3,032,998	System for cognition and oculomotor impairment diagnosis using binocular coordination analysis
U.S. Patent Number 10,365,714	System and method for dynamic content delivery based on gaze analytics
U.S. Patent Number 15/585057	Vestibular-Ocular Reflex Test and Training System

Neurosurgery patents:

U.S. Patent Number 4,613,324	Method and Apparatus for Guiding Catheter into Ventricular System of Human Brain
U.S. Patent Number 4,784,634	Angled Hole Ventricular Catheter and Method of Making Same
U.S. Patent Number 4,821,716	Method and Apparatus for Perpendicular Perforation of the Cranium
U.S. Patent Number 4,931,056	Catheter Guide Apparatus for Perpendicular Insertion into a Cranium Orifice
U.S. Patent Number 4,970,926	Apparatus for making Angled Hole Ventricular Catheter
U.S. Patent Number 4,998,938	Removable Skull Mounted Work Platform and Method of Assembling Same
U.S. Patent Number 5,180,387	Angled Hole Catheter with Non-circular Bore

U.S. Patent Number 5,207,681	Drill Guide Apparatus for Perpendicular Perforation of the Cranium
U.S. Patent Number 6,206,885	Catheter Guide and Drill Guide Apparatus and method for Perpendicular Insertion into a Cranium Orifice
U. S. Patent Number 7,033,367	Slotted Catheter Guide for Perpendicular Insertion into a Cranium Orifice
U.S. Patent Number 7,849,525	Apparatus for Reducing Brain and Cervical Spine Injury due to Rotational Movement

CURRENT ADVISORY POSITIONS

American College of Surgeons. Committee on Trauma.

American College of Surgeons. Trauma Center Verification Committee.

American College of Surgeons. Lead author, Neurosurgery requirements for trauma centers.

Abbott. Neuro consultant.

SyncThink, inc. (NeuroSync) Founder and Chief Scientific advisor.

SCIENCE DOCUMENTARIES & PRESS

The New Yorker: “Conquering the Coma” by Malcolm Gladwell, 1996.

PBS – NOVA: “COMA”, 1997.

The Wall Street Journal: “Getting the Best Care, And Fast, for Patients Suffering Head Injuries” by Tara Parker – Pope, 2001.

PBS – NOVA: “Science Now: The hidden toll of concussions and other common brain injuries”, 2008.

The Wall Street Journal: “Pentagon Seeks Battlefield Device to Diagnose Brain Injury” by Theo Francis– Health Blog, 2008.

CNN: “Edge of Discovery”, 2009.

Los Angeles Times: “Science of time: What makes our internal clock tick” by Melissa Healy, March 9, 2009.

Fleet Reserve Association, FRA Today: “Out of Sync, the effects of Traumatic Brain Injury (TBI) and **The battle to recover**” by Lauren Armstrong. 2009.

Bloomberg TV: “Taking Stock with Pimm Fox, Attention and Eye Tracking. 2013.

Forbes: Using Virtual Reality To Diagnose Concussions, 2016

Stanford Alumni: The Fog of Concussion, 2016

Stanford magazine: The 5 Types of Concussion, 2020

AWARDS

The Manhattan Award 1988
Peter Canizaro Award AAST for Laboratory Research 1992
New York State DOH Recognition Award 1996
The Sheldon Berrol Clinical Service Award, Brain Injury Association 1998
American Iranian Council Award 2001
Honorary Police Surgeon, New York Police Department 2007
Ellis Island Award 2013
Honoree, Harvard College Iranian Association and the Harvard Iranian Alumni 2021
Advancement of Sciences Award, Neuro Optometric Rehabilitation Association 2022

CHAPTERS AND BOOKS

Ghajar J.B.G.: A guide for ventricular catheter placement. **Annual Review of Hydrocephalus** 1986 V.4, Matsumoto S. Editor. Neuron publishing Co. Tokyo, Japan.

Hariri, R.J. and **Ghajar, J.B.G.:** The Application of Microsurgery to Laboratory Research. **Animal Experimentation and Research Surgery**, Edited by Gay, W. and Heavener, J., Academic Press, New York and Philadelphia, 1988.

Ghajar J.B.G., Barie, B.S. and Hariri, R.J.: The Role of Leukotriene C4 in the development of Post-Traumatic Intracranial Hypertension. **Intracranial Pressure VIII.** Edited by C.J.J. Avezaat, J.H.M. van Eijndhoven, A.I.R. Mass and J.T.J. Tans. Springer-Verlag Berlin, Heidelberg New York, 479-483, 1993.

Ghajar, J.B.G., Hariri, R.J. and Patterson R.: Improved Outcome from Traumatic Coma Using Only Ventricular Cerebrospinal Fluid Drainage for Intracranial Pressure Control. **Advances in Neurosurgery.** Edited by R. Lorenz, M. Klinger, M.Brock. Springer-Verlag Berlin, Heidelberg, 21:173-177, 1993.

Hariri, R.J., Barie, B.S. and **Ghajar, J.B.G.:** Contribution of Increased Cerebral Blood Volume to Post-Traumatic Intracranial Hypertension. Edited by Nakamura N., Hashimoto, T., Yasue, M., **Recent Advances in Neurotraumatology** , Springer-Verlag, Tokyo, 289-292, 1993.

Ghajar, J.B.G., Hariri, R.J., Schreiber, K., Ko, K., Bahramian, K., Iacono, L., and Patterson, R.: Improved Outcome from Traumatic Coma Using Ventricular CSF Drainage. Edited by Nakamura, N., Hashimoto, T., Yasue, M., **Recent Advances in Neurotraumatology**, Springer-Verlag, Tokyo, 327-330, 1993.

Hariri, R.J., **Ghajar, J.B.G.:** The Pathophysiologic Basis for the Management of Traumatic Brain Injury. **Textbook of Surgical Intensive Care**, Edited by Barie, P.S. and Shires, G.T., Lippincott, Philadelphia, Pa. Chapter 45:1193-1229, 1993.

Ghajar, J.B.G. and Hariri, R.J.: Management of Pediatric Head Injury. **Pediatric Clinics of North America.** Edited by Dimaio, A., WB Saunders Company, Philadelphia. Volume 39, Number 5, 1093-1125, October 1992.

Ghajar, J.B.G.: Variability of Neurotrauma Care in Hospitals. **Neurotrauma.** Edited by Narayan R.K., McGraw-Hill, New York. Chapter 70:1007-1017, 1996.

Greenwald, B.M., **Ghajar, J.B.G.** , Notterman, D.A.: Critical Care of Children with Acute Brain Injury: **Advances in Pediatrics** by Mosby Yearbook , Volume 42, 40-78,1995.

Hartl, R., Ruge, M., Medary, M., Ghahremani, F., Arfors, K., **Ghajar, J.B.G.**: A New Model for the Investigation of the Cerebral Microcirculatory Dynamics after Traumatic Brain Injury. **6th World Congress for Microcirculation**. Edited by K. Messmer, W.M. Kubler. Monduzzi Publishing, Bologna (Italy) 691-695, 1996.

Bullock, R., Chesnut, R.M., Clifton, G., **Ghajar, J.B.G.**, Marion, D.W., Narayan, R.K., Newell, D.W., Pitts, L.W., Rosner, M.J., Wilberger, J.E.: Guidelines for the Management of Severe Head Injury. Brain Trauma Foundation, **AANS Press**, Chicago 1996.

Ghajar, J.B.G., Brennan, C.: Acute Care of Gunshot Wounds to the Brain. **Traumatic Brain Injury**. Edited by Donald W. Marion. Thieme Publishing, New York 215-221, 1998.

Ghajar, J.B.G., Mending the Injured Brain. **The Nova Reader, Science at the Turn of the Millennium**. Edited by Sandra Hackman. TV Books, L.L.C. Publishing, New York 82-85, 1999.

Sussman ES, Pendharkar AV, Ho AL, **Ghajar J.** Mild traumatic brain injury and concussion: terminology and classification **Handbook of Clinical Neurology 2018**

Bullock, R., Chesnut, R.M., Clifton, G., **Ghajar, J.B.G.**, Marion, D.W., Narayan, R.K., Newell, D.W., Pitts, L.W., Rosner, M.J., Wilberger, J.E.: **Management and Prognosis of Severe Traumatic Brain Injury**. Brain Trauma Foundation, New York, 2000.

Gabriel, E.J., **Ghajar, J.B.G.**, Jagoda, A., Pons, P.T., Scalea, T., Walters, B.C.: **Guidelines for Prehospital Management of Traumatic Brain Injury**. Brain Trauma Foundation, New York, 2000.

Hartl, R, Greenwald, B, **Ghajar, J.B.G.**: Acute head injuries in children. **Conn's Current Therapy**. Edited by Robert E. Rakel & Edward T. Bope. W.B. Saunders Company, Philadelphia, 971-975, 2002.

Hartl, R, **Ghajar, J.B.G.**: Acute Traumatic Brain Injury in Adults. **Conn's Current Therapy**. Edited by Robert E. Rakel & Edward T. Bope. W.B. Saunders Company, Philadelphia, 1004-1014, 2003.

Hartl, R, **Ghajar, J.B.G.**: Neurosurgical Interventions. **Textbook of Traumatic Brain Injury**. American Psychiatric Publishing, Inc. Edited by Jonathan M. Silver, MD, Thomas W. McAllister, MD, Stuart C. Yudofsky, MD; Washington DC, London, England, 51-58, 2004.

Hartl, R, **Ghajar, J.B.G.**: Does Following the Recommendations in the Guidelines for the Management of Severe Traumatic Brain Injury Make a Difference in Patient Outcome? **Neurotrauma - Evidence-Based Answers to Common Questions**. Thieme, New York, NY, 120-123, 2004.

Bratton, S.L., Chesnut, R.M., **Ghajar, J.B.G.**, Hammond, F.F.M., Harris, O, Hartl, R, Manley, G.T., Nemecek, A., Newell, D.W., Rosenthal, G., Shutter, L., Schouten, J., Timmons, S.D., Ullman, J.S., Videtta, W., Wilberger, J., Wright, D.W.: **Guidelines for the Management of Severe Traumatic Brain Injury 3rd Edition**. Brain Trauma Foundation, New York 2007.

Bratton, S.L., Chesnut, R.M., **Ghajar, J.B.G.**, Hammond, F.F.M., Harris, O, Hartl, R, Manley, G.T., Nemecek, A., Newell, D.W., Rosenthal, G., Shutter, L., Schouten, J., Timmons, S.D., Ullman, J.S., Videtta, W., Wilberger, J., Wright, D.W.: **Guidelines for the Management of Severe Traumatic Brain Injury 3rd Edition**. Brain Trauma Foundation, New York 2007
Ghajar J. Trauma: Traumatic Brain Injury. In: El Tecle NE, El Ahmadi TY, Aoun SG, Bendok B, ed. **Congress of Neurological Surgeons Essential Papers in Neurosurgery**. New York, NY: Oxford University Press; **2021**: 147-168.

PUBLICATIONS- peer reviewed

Ornitz, E.M., Tanguay, P.E., Forsythe, A.B., De La Penna, A., and **Ghajar, J.B.G.**: The recovery cycle of the averaged auditory evoked response during sleep in normal children. **EEG and Clinical Neurophysiology** 37:113-122, 1974.

Ornitz, E.M., Forsythe, A.B., Tanguay, P.E., Ritvo, E.R., Pena, A., **Ghajar, J.B.G.**: The recovery cycle of the averaged auditory evoked response during sleep in autistic children. **EEG and Clinical Neurophysiology** 37:173-174, 1974.

Ghajar, J.B.G., Plum, F., and Duffy, T.E.: Cerebral oxidative metabolism and blood flow during acute hypoglycemia and recovery in unanesthetized rats. **J. Neurochemistry** 38:397-409, 1982.

Ghajar, J.B.G.: Cerebral metabolism and blood flow during hypoglycemia and recovery. **Doctoral thesis**. 1983.

Ghajar, J.B.G., Gibson, G.E., and Duffy, T.E.: Regional acetylcholine metabolism in brain during acute hypoglycemia and recovery. **J. Neurochemistry** 44:94-98, 1985.

Ghajar, J.B.G.: A guide for ventricular catheter placement. Technical note. **J. Neurosurgery** 63:985-986, 1985.

Hariri, R.J., **Ghajar, J.B.G.**, and Patterson, R.H.: The Effect of Age on Arterial Stenosis Following Microsurgical Repair, **Surgical Forum** 38:486-7, 1987.

Hariri, R.J., **Ghajar J.B.G.**, Hajjar, D.P., Patterson, R.H., Pomerantz, K.B., and Tomich, E.: Human Glial Cell Production of Lipoxygenase Generated Eicosanoids: A Potential Role in the Pathophysiology of Vascular Changes Following Traumatic Brain Injury. **Surgical Forum** 39:483-486, 1989.

Hariri, R.J., **Ghajar, J.B.G.**, Pomerantz, K., Hajjar, D.P., Tomich, E., Andrews, D.W., and Patterson, R.H.: Glial Cell Production of Eicosanoids Following Mechanical Injury, **Journal of Trauma** 29:1203-1210, 1989.

Fiamengo, S.A., Hariri, R.J., **Ghajar, J.B.G.**, Tomich, E., Emery, J.M., and Patterson R.H., The Effect of CVP on Brain Compliance: **Anesthesia and Analgesia** 68, S115, 1989.

Hariri, R.J., **Ghajar, J.B.G.**, Cohen, D.S., and Tan, K.S.: Cerebral Cortical Oxygenation Assessed by Reflectance Infrared Pulse Oximetry, **Stroke** 21:181-182, 1990.

Shepard, S.R., Hariri, R.J., Giannuzzi, R., Pomerantz, K., Hajjar, D., **Ghajar, J.B.G.**, Leukotriene Production by Human Glia, **Acta Neurochirurgica** S51:58-60, 1990.

Shepard, S.R., **Ghajar, J.B.G.**, Giannuzzi, R., Kupferman, S., and Hariri, R.J.: Fluid Percussion Barotrauma Chamber: A New In Vitro Model for Traumatic Brain Injury, **Journal of Surgical Research** 51:417-424, 1991.

Redo, S. F., Ciccarelli, A., **Ghajar, J.B.G.**, Dinner, M.: Ventriculoatrial Shunt Utilizing the Azygos Vein, **Journal of Pediatric Surgery** 27:642-644, 1992.

Hariri, R.J., Firlik, A. D., Shepard, S.R., Cohen, D. S., Barie, P.S., Emery, J.M., **Ghajar, J.B.G.**: Traumatic Brain Injury, Hemorrhagic Shock, and Fluid Resuscitation: Effects on Intracranial Pressure and Brain Compliance. **Journal of Neurosurgery** 79:421-427, 1993.

Hariri, R.J., Barie, P.S., **Ghajar, J.B.G.**: Contribution of Increased Cerebral Blood Volume to Post-Traumatic Intracranial Hypertension. **Journal of Trauma** 35:88-96, 1993.

Hariri, R.J., **Ghajar, J.B.G.**, Bahramian, K., Sharif, S., Barie, P. S.: Alterations in Intracranial Pressure and Cerebral Blood Volume in Endotoxemic Swine. **Surgical Gynecology & Obstetrics** 176:155-166,1993.

Sharif, S., Hariri, R. J., Chang, V., Barie, P. S., Wang, R.S., and **Ghajar, J.B.G.**: Human-Astrocyte Production of Tumor Necrosis Factor - α , Interleukin - 1β , and Interleukin-6 Following Exposure to Lipopolysaccharide Endotoxin. **Neurological Research** 15:109-112, April 1993.

Hariri, R.J., Chang, V. A., Barie, P. S., Wang, R.S., Sharif, S.F., **Ghajar, J.B.G.**: Traumatic Injury Induces Interleukin-6 Production by Human Astrocytes. **Brain Research** 636:139-142,1994.

Ko, K., **Ghajar, J.B.G.**, Hariri, R.J.: A Method for Monitoring Intracranial Temperature via Tunneled Ventricular Catheter. **Neurosurgery** 34:927-929,1994.

Hariri, R.J., Chang, V.A., Barie, P.S., **Ghajar, J.B.G.**: Traumatic Injury Induces Interleukin-6 Production by Human Astrocytes. 11th Annual Neurotrauma Symposium. **Journal of Neurotrauma** 11:112,1994.

Chang, V.A., Barie, P.S., **Ghajar, J.B.G.**, Hariri, R. J.: Altered Metabolism of Amyloid Precursor Protein Following Traumatic Brain Injury. 11th Annual Neurotrauma Symposium. **Journal of Neurotrauma** 11:104,1994.

Ghajar, J.B.G., Hariri, J., Narayan,R.K. Iacono, L.A., Firlik,K., Patterson,R.H.: Survey of Critical Care Management of Comatose Head Injury Patients in the United States. **Critical Care Medicine** 23:560-567, 1995.

Ghajar, J.B.G. Intracranial Pressure Monitoring Techniques. **New Horizons** 3:395-399, 1995.

Itkis, Michael, **Ghajar, J.B.G.** Hariri, Robert J., The square-wave approach to impedance measurement of brain tissue water dynamics. **J. Neuroscience Methods** 59:237-244. 1995.

Ghajar, J.B.G., Significant Lateralisation of Supratentorial ICP After Blunt Head Trauma. *Acta Neurochirurgica* 116:60-61, 1992. Letter to Editor: **Acta Neurochirurgica** (Wein) 120:98-99,1993.

Schreiber, K., Firlick, A. D., Hariri, R.J., **Ghajar, J.B.G.**, The Diagnosis and Initial Management of Head Injury. *NEJM* 327:1507-1511, 1992. Letter to Editor: **NEJM** 328:1124-1125,1993.

Hariri,R.J., Barie, P.S., **Ghajar, J.B.G.**, Traumatic Brain Injury, Shock and Fluid Resuscitation: Effects on Intracranial Pressure and Brain Compliance. Letter to Editor: **J. Neurosurgery** 81:963-964, 1994.

Ghajar, J.B.G., Narayan R.K.: Survey of Critical Care Management of Comatose Head Injury Patients in the United States. Letter to Editor: **Critical Care Medicine** 24:897-898, 1996.

Bullock , R., Chesnut, R.M., Clifton, G., **Ghajar, J.B.G.**, Marion, D.W., Narayan R.K., Newell D.W., Pitts L.W., Rosner M.J., Wilberger J.E., Guidelines for the Management of Severe Head Injury. **J. Neurotrauma** S13, No. 11. November 1996.

Bullock , R., Chesnut, R.M., Clifton, G., **Ghajar, J.B.G.**, Marion, D.W., Narayan R.K., Newell D.W., Pitts L.W., Rosner M.J., Wilberger J.E., Guidelines for the Management of Severe Head Injury. **European Journal of Emergency Medicine** 2:109-127, 1996.

Hartl, R., Burrows T., Medary, M., Arfors, K., **Ghajar, J.B.G.**: Leukocyte Activation and Microcirculatory Alterations After Traumatic Brain Injury in Rabbits: An Intravital Microscopy Study. Abstract. **J. Neurosurgery** 84:368A-369A, 1996.

Hartl, R., Arfors, K., Ghahremani, F., **Ghajar, J.B.G.**: Hypertonic/Hyperoncotic Saline Attenuates Microcirculatory Disturbances after Traumatic Brain Injury. **Journal of Trauma** May Supplement, S2-S7, 1997.

Hartl, R., **Ghajar, J.B.G.**, Hochleuthner, H. Mauritz, W.: Hypertonic/hyperoncotic saline reliably reduces ICP in severely head-injured patients with intracranial hypertension. **Acta Neurochirurgica** S70: 126-129, 1997.

Hartl, R., Medary M., Ruge, F., Ghahremani, F., Arfors, K., **Ghajar, J.B.G.**: Blood-Brain-Barrier disruption is more pronounced at 1 hour as compared to 6 hours after traumatic brain injury: An intravital videomicroscopy study. **Acta Neurochirurgica** S 70:240-242, 1997.

Hartl, R., **Ghajar, J.B.G.**, Hochleuthner, H., Mauritz W.: Treatment of Refractory Intracranial Hypertension in Severe Traumatic Brain Injury with Repetitive Hypertonic/Hyperoncotic Infusion. **Zentralblatt fur Chirurgie** 122:181-185, 1999.

Vukic, M., Negovetic, L., Kovac, D., **Ghajar, J.B.G.**, Glavic, Z., Gopeevic, A.: The Effect of Implementation of Guidelines for the Management of Severe Head Injury on Patient Treatment and Outcome. **Acta Neurochirurgica (Wien)** 141-146, 1999.

Bullock, RM., Chesnut, RM., Clifton, GL., **Ghajar, J.B.G.**, Marion, DW., Narayan, RK., Newell, DW., Pitts, LH., Rosner, MJ., Walters, BC., Willberger, JE.: Guidelines for the Management of Severe Traumatic Brain Injury. **Journal of Neurotrauma** Volume 17 Number 6/7 June/July, **2000**.

Ghajar, J.B.G.: Traumatic brain injury. **Lancet** 356:923-929, **2000**.

Ghajar, J.B.G.: Modified stereotactic insertion of the Ommaya reservoir, Technical note. Letter to Editor: **J. Neurosurgery** 93:1092, **2000**.

Hesdorffer, D.C., **Ghajar, J.B.G.**, Iacono, L: Predictors of compliance with the evidence-based guidelines for traumatic brain injury care: A survey of United States trauma centers. **J. Trauma** 1202-1209, **2002**.

Narayan, R.K., Michel, M.E. and The Clinical Trials in Head Injury Study Group Including: **Ghajar, J.B.G.**, et al. Clinical Trials in Head Injury. **J. Neurotrauma** 19:503-557, **2002**.

Ghajar, J.B.G., Hesdorffer, D.C.: Steroids CRASH out of head-injury treatment. **The Lancet Neurology**, Volume 3:708, December **2004**.

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