

References

- Abbott, C. and Bustillo, J. (2006):** What have we learned from proton magnetic resonance spectroscopy about schizophrenia? A critical update. *Current Opinion in Psychiatry*; 19: 135–139.
- Allen, L.S.; Richey, M.F.; Chain, Y.M. and Gorski, R.A. (1991):** Sex differences in the corpus callosum of the living human being. *The Journal of Neuroscience*; 11:933-942.
- American Health Assistance foundation (2010):** Anatomy of the brain. Available at:
<http://www.ahaf.org/alzheimers/about/understanding/anatomy-of-the-brain.html>
- American medical network, (2009):** Subtypes of Schizophrenia. Available at:
<http://www.health.am/psy/more/subtypes-of-schizophrenia/>
- American Psychiatric Association (1994):** DSM-IV. Diagnostic and statistical manual of mental disorders. 4th ed. Washington: American Psychiatric Association, 273-315.
- Andreasen, N.C. (1995):** Symptoms, signs, and diagnosis of schizophrenia. *Lancet*, 346: 477-481.

Auer, D.P.; Wilke, M.; Grabner, A.; Heidenreich, J.O.; Bronisch, T. and Wetter, T.C. (2001): Reduced NAA in the thalamus and altered membrane and glial metabolism in schizophrenic patients detected by ^1H -MRS and tissue segmentation. *Schizophr. Res.*; 52 (1–2): 87–99.

Bertolino, A.; Kumra, S.; Callicott, J.H.; Mattay, V.S.; Lestz, R.M.; Jacobsen, L.; Barnett, I.S.; Duyn, J.H.; Frank, J.A.; Rapoport, J.L. and Weinberger, D.R. (1998): Common pattern of cortical pathology in childhood-onset and adult-onset schizophrenia as identified by proton magnetic resonance spectroscopic imaging. *Am. J. Psychiatry*; 155:1376–1383.

Bhugra, D. (2006): The global prevalence of schizophrenia. *PLoS Medicine*; 2 (5): 372–373.

Blanchard, J. J.; Mueser, K. T. and Bellack, A. S. (1998): Anhedonia, positive and negative affect, and social functioning in schizophrenia. *Schizophr. Bull.*, 24:413–424.

Block, W.; Bayer, T.A.; Tepest, R.; Traber, F.; Rietschel, M.; Muller, D.J.; Schulze, T.G.; Honer, W.G.; Schild, H.H. and Falkai, P. (2000): Decreased frontal lobe ratio of N-acetylaspartate to choline in familial schizophrenia: a proton magnetic resonance spectroscopy study. *Neuroscience letters*; 289 (2):147–151.

- Bluml, S.; Tan, J.; Harris, K.; Adata, N.; Karme, A.; Sproull, T. and Ross, B. (1999):** Quantitative proton-decoupled ^{31}P MRS of the schizophrenic brain in vivo. Journal of computer assisted tomography; 23 (2):272–275.
- Boyd, J.; Pulver, A.E. and Stewart, W. (1986):** The association between the risk of schizophrenia and season of birth: a review of the literature. Schizophr. Bull. 12:173-186.
- Brandubury, T. and Milier, G.A. (1985):** Season of birth in schizophrenia: a review of evidence. Methodology and etiology. Psychol. Bull. 98: 569-594.
- Bredkjaer, S.R.; Mortensen, P.B. and Parnas, J. (1998):** Epilepsy and non-organic non-affective psychosis. National epidemiologic study. B. J. Psych.; 172:235-238.
- Buckley, P.F.; Moore, C.; Long, H.; Larkin, C.; Thompson, P. and Mulvany, F. (1994):** ^1H magnetic resonance spectroscopy of left temporal and frontal lobes in schizophrenia: clinical, neurodevelopmental, and cognitive correlates. Biol. Psychiatry; 36(12):792-800.
- Buhler, B.; Hambrecht, M. and Loffler, W. (2002):** Precipitation and determination of the onset and course of schizophrenia by substance abuse: a retrospective and prospective study of 232

population-based first illness episodes. *Schizophr. Res.*, 54:243–251.

Burtscher, I.M. and Holtas, S. (2001): proton magnetic resonance spectroscopy in brain tumors: clinical applications. *Neuroradiology*; 43(5): 345-352.

Callicott, J.; Egan, M.; Bertolino, A.; Mattay, V.; Langheim, F.;

Frank, J. and Weinberger, D. (1998): Hippocampal N-acetyl aspartate in unaffected siblings of patients with schizophrenia: a possible intermediate neurobiological phenotype. *Biol. Psychiatry*; 44:941–950.

Callicott, J.H.; Egan, M.F.; Bertolino, A.; Mattay, V.S.; Langheim, F.J.P.; Frank, J.A. and Weinberger, D.R. (1998): Hippocampal N-acetyl aspartate in unaffected siblings of patients with schizophrenia: a possible intermediate neurobiological phenotype. Erratum in: *Biol Psychiatry* 1999 Jan 15; 45(2): following 244. *Biol. Psychiatry*; 44: 941–950.

Cannon, T. D.; Kaprio, J.; Lonnqvist, J.; Huttunen, M.; and Koskenvuo, M. (1998): The genetic epidemiology of schizophrenia in a Finnish twin cohort. A population-based modeling study. *Archives of General Psychiatry*, 55: 67–74.

- Castle, D. and Murrar, R.M. (1991):** The neurodevelopmental basis of sex differences in schizophrenia. *Psychol. Med.* 21: 565-575.
- Chang, K.H.; Song, I.C. and Kim, S.H. (2006):** In vivo single voxel proton MR spectroscopy in intracranial cystic masses. *AJNR*; 19:401-405.
- Chang, L.; Friedman, J.; Ernst, T.; Zhong, K.; Tsoukalas, N.D. and Davis, K. (2007):** Brain metabolite abnormalities in the white matter of elderly schizophrenic subjects: Implication for glial dysfunction. *Biol. Psychiatry*; 62 (12):1396–1404.
- Charles, H.C.; Lazeyras, F.; Krishnan, K.R.; Boyko, O.B.; Patterson, L.J.; Doraiswamy, P.M. and McDonald, W.M. (1994):** Proton spectroscopy of human brain: effects of age and sex. *Progress in Neuropsychopharmacology & Biological Psychiatry Journal*; 18:995–1004.
- Cousin, J.P. (1995):** Clinical MR spectroscopy fundamentals, current application and future potentials. *AJNR*; 164:1337-1347.
- Cox, I.J. and Puri, B.K. (2004):** In vivo MR spectroscopy in diagnosis and research of neuropsychiatric disorders, *Prostaglandins Leukot. Essent. Fatty Acids* 70: 357–360.

Crossman AR., Neary D., (2000): Cerebral hemispheres and cerebral cortex. In textbook of Neuroanatomy 2nd edition (13): 146-149 Churchill.

Crow, T.J.; Done, D.J. and Johnstone, E.C. (1991): Schizophrenia and influenza. Lancet 338:116-117.

Danielsen, E.R. and Ross, B. (1999): Magnetic resonance spectroscopy.
In textbook of: Diagnosis of neurological diseases. 1st edition;
(31): 309-311. New York; Marcel Decker.

de Beer R, van Ormondt D. (1992): Analysis of NMR data using time domain fitting procedures. In: Diehl, P.; Fluck, E.; Gunther, H.; Kosfeld, R. and Seelig, J. editors. NMR: Basic Principles and Progress, Vol 123. Berlin: Springer-Verlag, 199–281.

Delamillieure, P.; Constans, J.M.; Fernandez, J.; Brazo, P. and Dollfus, S. (2000): Proton magnetic resonance spectroscopy (¹H-MRS) of the thalamus in schizophrenia. European Psychiatry 15 (8): 489–491.

Erlenmeyer-Kimling, L. (2001): Early neurobehavioral deficits as phenotypic indicators of the schizophrenia genotype and predictors of late psychosis. Am. J. Med. Genet.; 105: 23-4.

Fitzgerland MJT., Curran JF. (2002): Cerebral topography. In textbook of: Neuroanatomy and related neurosciences 5th edition (2): 13-15.WB Saunders. Spain.

Freedman R. (2003): Schizophrenia. NEJM; 349: 1738-49.

Frey, B.N.; Stanley, J.A.; Nery, F.G.; Monkul, E.S.; Nicoletti, M.A.; Chen, H.H.; Hatch, J.P.; Caetano, S.C.; Ortiz, O.; Kapczinski, F. and Soares, J.C. (2007): Abnormal cellular energy and phospholipid metabolism in the left dorsolateral prefrontal cortex of medication-free individuals with bipolar disorder: an in vivo ¹H MRS study. Bipolar Disorders 9 (1):119–127.

Garver, D.L. (1987): Methodological issues facing the interpretation of high-risk studies: biological heterogenicity. J. Psychiatr. Res.; 28:525-529.

Gattaz, W.F.; Hubner, C.V.; Nevalainen, T.J.; Thuren, T. and Kinnunen, P.K. (1990): Increased serum phospholipaseA2 activity in schizophrenia: a replication study. Biol. Psychiatry; 28:495–501.

References

- Gattaz, W.F.; Schmitt, A. and Maras, A. (1995):** Increased platelet phospholipaseA2 activity in schizophrenia. *Schizophr. Res.*; 16:1–6.
- Gilbert, A. R. and Keshavan, M. S. (2001):** MRI structural findings in Schizophrenia. *Rev Bras Psiquiatr*; 23(1):15-8.
- Gonzalez-Toledo, E.; Kelley, R.E. and Minagar, A. (2006):** Role of magnetic resonance spectroscopy in diagnosis and management of multiple sclerosis. *Neurol. Res.*; 28(3):280-3.
- Gottesman, I. (1991):** Schizophrenia genesis: the origins of madness. New York: Freeman.
- Govindaraju, V.; Young, K. and Maudsley, A.A. (2000):** Proton NMR chemical shifts and coupling constants for brain metabolites. *NMR in Biomedicine*; 13:129–153.
- Green, M. F. (1996):** What are the functional consequences of neurocognitive deficits in schizophrenia? *Am. J. Psych.*; 153:321-30.
- Green, M. F. (2006):** Cognitive impairment and functional outcome in schizophrenia and bipolar disorder. *J. Clinic. Psychiatry* 67 (9): 3–8.

Gruber, S.; Frey, R.; Mlynarik, V.; Stadlbauer, A.; Heiden, A.; Kasper, S.; Kemp, G.J. and Moser, E. (2003): Quantification of metabolic differences in the frontal brain of depressive patients and controls obtained by ^1H -MRS at 3 Tesla. *Investigative Radiology Journal*; 38:403–408.

Gujar, S.K.; Maheshwari, S.; Bjorkman-Burtscher, I. and Sundgren, P.C. (2005): Magnetic resonance spectroscopy. *J. Neuroophthalmol.*; 25(3): 217-226.

***H*amilton, G.; Mathur, R. and Allsop, J.M. (2003):** Changes in brain intracellular pH and membrane phospholipids on oxygen therapy in hypoxic patients with chronic obstructive pulmonary disease, *Metab. Brain Dis.* 18: 95–109.

Harrison, P.J. and Owen, M.J. (2003): Genes for schizophrenia? Recent findings and their pathophysiological implications. *Lancet*; 361:417-419.

Hasler, G.; van der Veen, J.W. and Tumonis, T. (2007): Reduced prefrontal glutamate/ glutamine and gamma-aminobutyric acid levels in major depression determined using proton magnetic resonance spectroscopy, *Arch. Gen. Psychiatry* 64: 193–200.

- Horrobin, D.F. (1998):** The membrane phospholipid hypothesis as a biochemical basis for the neurodevelopmental concept of schizophrenia. *Schizophr. Res.* 30:193–208.
- Hsu, A.C. and Gregory, C.D. (1998):** Offset-dependent partial saturation in binomial solvent suppression sequences. *J. Magn. Reson.* 131:46–53.
- Jakobsen, K. D.; Frederiksen, J. N.; Hansen, T.; Jansson, L.B.; Parnas, J. and Werge, T. (2005):** Reliability of clinical ICD-10 schizophrenia diagnoses. *Nordic Journal of Psychiatry* 59 (3): 209–212.
- Jessen, F.; Scherk, H.; Traber, F.; Theyson, S.; Berning, J.; Tepest, R.; Falkai, P.; Schild, H.H.; Maier, W.; Wagner, M. and Block, W. (2006):** Proton magnetic resonance spectroscopy in subjects at risk for schizophrenia. *Schizophr. Res.*; 87: 81–88.
- Jones, H. M. and Pilowsky, L. S. (2002):** Dopamine and antipsychotic drug action revisited. *B.J. Psych.*; 181: 271–275.

Kato, T.; Murashita, J.; Shioiri, T.; Hamakawa, H. and Inubushi, T.

(1996): Effect of photic stimulation on energy metabolism in the human brain measured by ^{31}P -MR spectroscopy. *Journal of Neuropsychiatry and Clinical Neuroscience*; 8:417–422.

Keshavan, M., (1994): Neurodevelopment and schizophrenia: quo vadis? In textbook of: Neurodevelopment and psychopathology. 19:267-269. Cambridge university press, Cambridge, UK.

Keshavan, M., (2003): Toward unraveling the premorbid neurodevelopmental risk for schizophrenia. In: Cicchetti, D., Wlaker, E. (Eds.), *Neurodevelopmental Mechanisms in the Genesis and Epigenesis of Psychopathology: Future Research Directions*. Cambridge University Press, Cambridge, UK.

Keshavan, M.S.; Dick, E. and Mankowski, I. (2002): Decreased left amygdala and hippocampal volumes in young offspring at risk for schizophrenia. *Schizophr. Res.*; 58:173-183.

Keshavan, M.S.; Tandon, R.; Boutros, N.; Nasrallah, A.H. (2008): Schizophrenia, “just the facts”: What we know in 2008. *Schizophr. Res.*; 106:89–107.

- Kim, H.; McGrath, B.M. and Silverstone, P.H. (2005):** A review of the possible relevance of inositol and the phosphatidylinositol second messenger system (PI-cycle) to psychiatric disorders-focus on magnetic resonance spectroscopy (MRS) studies. *Human Psychopharmacology* 20 (5):309–326.
- Konradi, C.; Heckers, S. (2003):** Molecular aspects of glutamate dysregulation: implications for schizophrenia and its treatment. *Pharmacology and Therapeutics* 97 (2): 153–79.
- Kwee, I.L. and Nakada, T. (1988):** Phospholipid profile of the human brain: ^{31}P NMR spectroscopic study, *Magn. Reson. Med.* 6: 296–299.
- Kwock, L. (1998):** Localized MR spectroscopy: Basic principles. *Neuroimaging Clin N Am* (8):713-731.
- Lahti, A. C.; Weiler M. A., Tamara Michaelidis, B. A., Parwani, A. and Tamminga, C. A. (2001):** Effects of ketamine in normal and schizophrenic volunteers. *Neuropsychopharmacology*, 25 (4): 455–67.
- Lang, U.E.; Puls, I.; Muller, D.J.; Strutz-Seebohn, N. and Gallinat, J. (2007):** Molecular mechanisms of schizophrenia. *Cellular Physiology and Biochemistry* 20 (6):687–702.

- Laruelle, M.; Abi-Dargham, A.; van Dyck, C. H.; Gil, R.; D'Souza, C. D.; Erdos, J.; McCance, E.; Rosenblatt, W.; Fingado, C.; Zoghbi, S. S.; Baldwin, R. M.; Seibyl, J. P.; Krystal, J. H.; Charney, D. S. and Innis, R. B. (1996):** Single photon emission computerized tomography imaging of amphetamine-induced dopamine release in drug-free schizophrenic subjects. *Proceedings of the National Academy of Sciences of the USA*, 93 (17): 9235–40.
- Latchaw, R.E.; Kucharczyk, J., Moseley, M.E. (2005):** Magnetic resonance spectroscopy. In textbook of: *Imaging of the nervous system*. 3rd edition;(7): 125-130 Mosby.
- Lauerma, H.; Lehtinen, V.; Joukamaa, M.; Jorvelin, M.R. and Helenius Isohanni, M. (1998):** Schizophrenia among patients treated for rheumatoid arthritis and appendicitis. *Schizophr. Res.* 29: 255-261.
- Lay, B.; Blanz, B.; Hartmann, M. and Schmidt, M.H. (2000):** The psychosocial outcome of adolescent-onset schizophrenia: a 12-year follow up. *Schizophr. Bull.*; 26:801–816.
- Lee, C.U.; Shenton, M.E.; Salisbury, D.F.; Kasai, K.; Onitsuka, T.; Dickey, C.C.; Yurgelun – Todd, D.; Kinkinis, R.; Jolesz, F.A. and Mc Carley, R.W. (2002):** Fusiform gyrus reduction in first

episode schizophrenia: a magnetic resonance imaging study. Arch Gen Psychiatry; 59(9):775-781.

Lewis, D.A. and Lieberman, J.A. (2000): Catching up on schizophrenia: natural history and neurobiology. Neuron; 28:325-334.

Lin, A.; Ross, B.D.; Harris, K. and Wong, W. (2005): Efficacy of proton magnetic resonance spectroscopy in neurological diagnosis and neurotherapeutic decision making. NeuroRx; 2:197-214.

Malla, A.K.; Mittal, C.; Lee, M.; Scholten, D.J. and Norman, R.M. (2002): Computed tomography of the brain morphology of patients with episode schizophrenic psychosis. J Psychiatry Neurosci sep; 27(5):350-358.

Manji, H. K.; Gottesman, I. I. and Gould, T. D. (2003): Signal transduction and genes-to-behaviors pathways in psychiatric diseases. Science's STKE, (207): 49.

Marion, D. Ikura, M. and Bax, A. (1989): Improved solvent suppression in one- and two-dimensional NMR spectra by convolution of time-domain data. J. Magn. Reson.; 84:425–430.

Martin, H. (2003): Structural and functional organization of the central nervous system. In text and atlas, 3rd edition; (2): 41-44.

References

- Mednick, S.A.; Machon, R.A.; Hutienez, M.O. and Bonet, D. (1988):** Adult schizophrenia following prenatal exposure to an influenza epidemic. Arch Gen Psychiatry 45:192-198.
- Mc Hugh, P.R. and Slavny, P.R. (1983):** The perspectives of psychiatry. Baltimore, Md: Johns Hopkins University Press.
- Miller, M.J.; Kumar, D.; John Mann, J. and Ramin V. Parsey, V. R. (2008):** Applications of Positron Emission Tomography in Neuropsychiatric Pharmaceutical Drug Development. Current Radiopharmaceuticals 1: 12-16
- Mirnics, K.; Middleton, F.A. and Marquez, A. (2000):** Molecular characterization of schizophrenia viewed by microarray analysis of gene expression in prefrontal cortex. Neuron; 28:53-67.
- Morrison, J. (2006):** DSM-IV Made Easy: the Clinician's Guide to Diagnosis. New York: The Guilford Press.
- Mulhauser, G. (2010):** Schizophrenia Symptoms. Counselling Resource. Available at:
<http://counsellingresource.com/distress/schizophrenia/dsm/schizophrenia.html#schizophrenia-subtypes>

References

Murray, R.M. and Lewis, S.W. (1987): Is schizophrenia a neurodevelopmental disorder? Br Med J (Clin Res Ed); 295:681-682.

Nasrallah, H.A.; Skinner, T.E.; Schmalbrock, P. and Robitaille, P.M. (1994): Proton magnetic resonance spectroscopy (^1H MRS) of the hippocampal formation in schizophrenia: a pilot study. BJPsych.; 165: 481–485.

National Institutes of Mental Health (2007): Schizophrenia booklet. Department of health and human services.

Novotny, E.J. Jr, Fulbright, R.K.; Pearl, P.L.; Gibson, K.M. and Rothman, D.L. (2003): Magnetic resonance spectroscopy of neurotransmitters in human brain. Ann Neurol; 54 suppl 6: 25-31.

Okasha, A.; Seif El Dawla, A. and Khalil, A. H. (1993): Presentation of acute psychosis in an Egyptian sample: a transcultural comparison. Comprehensive Psychiatry; **34**: 4 -9.

Öngür, D. and Price, J.L. (2000): The organization of networks within the orbital and medial prefrontal cortex of rats, monkeys and humans. Cerebral Cortex Journal; 10:206–219.

- Öngür, D.; Andrew P. Prescott, A.P.; Jensen, J.E.; Cohen, B.M. and Renshaw, P.F. (2009):** Creatine abnormalities in schizophrenia and bipolar disorder. *Psychiatry Research: Neuroimaging*; 172:44-46.
- Oni-Orisan, A.; Kristiansen, L.V.; Haroutunian, V.; Meador-Woodruff, J.H. and Mc Cullumsmith, R.E. (2008):** Altered vesicular glutamate transporter expression in the anterior cingulate cortex in schizophrenia. *Biol. Psychiatry* 63 (8): 766–775.
- Oscar-Berman, M. (1997):** Impairments of brain and behavior: The neurological effects of alcohol. *Alcohol Health & Research World* 21(1):65–75.
- Owen, M.J.; O'Donovan, M.C. and Harrison, P.J. (2005):** Schizophrenia: a genetic disorder of the synapse? *BMJ*; 330: 158-159.
- Pantelis, C.; Yucel, M. and Wood, S.J. (2003):** Early and late neurodevelopmental disturbances in schizophrenia and their functional consequences. *Aust N Z J Psychiatry*; 37:399-406.

- Peet, M.; Laugharne, J.; Rangarajan, N.; Horrobin, D. and Reynolds, G. (1995):** Depleted red cell membrane essential fatty acids in drug-treated schizophrenic patients, *J. Psychiatr. Res.* 29:227–232.
- Peralta, V. and Cuesta, M.J. (1998):** Factor structure and clinical validity of competing models of positive symptoms in schizophrenia. *Biol. Psychiatry.* 44(2):107-14.
- Portin, P. and Alanen, Y. O. (1997):** A critical review of genetic studies of schizophrenia. *Epidemiological and brain studies. Acta Psychiatrica Scandinavica.* 95(1):1-5.
- Puri, B.K. (2000):** MRI and MRS in neuropsychiatry, in textbook of: *Methods in Biomedical Magnetic Resonance Imaging and Spectroscopy.* 1135–1143. Young, I. R.; Grant, D. M. and Harris. Wiley, New York.
- Puri, B.K.; Hirsch, S.R.; Easton, T. and Richardson, A.J. (2002):** A volumetric biochemical niacin flush-based index that non invasively detects fatty acid deficiency in schizophrenia, *Prog. Neuropsychopharmacol. Biol. Psychiatry;* 26:49–52.

Puri, B.K.; Counsell, S.J. and Hamilton, G. (2004): Cerebral metabolism in male patients with schizophrenia who have seriously and dangerously violently offended, Prostaglandins Leukot. Essent. Fatty Acids; 70: 409–411

Puri, B.K.; Counsell, J.S. and Hamilton, G. (2008): Brain cell membrane motion-restricted phospholipids: A cerebral ^{31}P magnetic resonance spectroscopy study of patients with schizophrenia. Prostaglandins, Leukot. Essent. Fatty Acids; 79: 233–235.

Rajarethinam, R.; Prasad, K. and Keshavan, M.S. (2005): The nature of brain abnormalities in schizophrenia: What do we really know? Current Psychosis & Therapeutics Reports; 3: 48-52.

Ronald, M. L. and Toni, R. (2008): Functional Anatomy of the Hypothalamus and Pituitary. Available at: <http://www.endotext.org/neuroendo/neuroendo3b/neuroendo3b.htm>.

Ryan, S.; McNicholas, M. and Eustace, S. (2004): The central nervous system. In textbook of: Anatomy for diagnostic imaging. 2nd edition: 49-58 Saunders.

- Sadock, B.J. and Sadock, V.A., (2004):** Schizophrenia. In textbook of: synopsis of psychiatry. 9th edition: 471-504. Lippincotte Williams and Wilkins. U.S.A.
- Saeed, N. and Menon, D.K. (1993):** A knowledge-based approach to minimize baseline roll in chemical shift imaging, Magn. Reson. Med.; 29: 591–598.
- Salibi, N. and Brown, M.A. (1998):** Clinical MR spectroscopy. In textbook of: Clinical Neuroradiology; (62): 143-164. New York, Wiley-Liss.
- Sanches, R.F.; Crippa, J.S.; Cecílio Hallak, J.E.; Araújo, D. and Zuardi, A.W. (2004):** Proton magnetic resonance spectroscopy of the frontal lobe in schizophrenics: a critical review of the methodology. Rev. Hosp.Clín. Fac. Med. S. Paulo; 59(3):145-52.
- Saunders, D.E.; Howe, F.A.; van den Boogaart, A.; Griffiths, J.R. and Brown, M.M. (1999):** Aging of the adult human brain: in vivo quantitation of metabolite content with proton magnetic resonance spectroscopy. Journal of Magnetic Resonance Imaging; 9:711–716.

- Shimon, H.; Sobolev, Y.; Davidson, M.; Haroutunian, V.; Belmaker, R.H. and Agam, G. (1998):** Inositol levels are decreased in postmortem brain of schizophrenia patients. *Biol. Psychiatry*; 44 (6):428–432.
- Siris, S.G. (2001):** Suicide and schizophrenia. *J. Psychopharmacol.*, 15:127-35.
- Smesny, S.; Rosburg, T.; Nenadic, I.; Fenk, K.P.; Kunstmann, S.; Rzanny, R.; Volz, H.P. and Sauer, H. (2007):** Metabolic mapping using 2D ^{31}P -MR spectroscopy reveals frontal and thalamic metabolic abnormalities in schizophrenia. *NeuroImage* 35 (2): 729–737.
- Snell, S. (2001):** Cerebrum. In text book of clinical neuroanatomy 5th edition; (7): 262-265. Lippincott Williams & Wilkins. Philadelphia. United states.
- Soares, J.C. (2003):** Contributions from brain imaging to the elucidation of pathophysiology of bipolar disorder. *The International Journal of Neuropsychopharmacology/official scientific journal of the Collegium Internationale Neuropsychopharmacologicum (CINP)* 6: 171–180.

- Soares, P.D. and M. Law, M. (2009):** Magnetic resonance spectroscopy of the brain: review of metabolites and clinical applications. *Clinical Radiology Journal*; 64:12-21.
- Stanley, J.A.; Vemulapalli, M.; Nutche, J.; Montrose, D.M.; Sweeney, J.A.; Pettegrew, J.W.; MacMaster, F.P. and Keshavan, M.S. (2007):** Reduced N-acetyl-aspartate levels in schizophrenia patients with a younger onset age: A single-voxel ^1H spectroscopy study. *Schizophr. Res.*; 93(1-3): 23-32.
- Stanley, J.A.; Williamson, P.C.; Drost, D.J.; Carr, T.J.; Rylett, J.; Malla, A. and Thomson, R.T. (1995):** An in vivo study of the prefrontal cortex of schizophrenic patients at different stages of illness via phosphorus magnetic resonance spectroscopy. *Arch Gen Psychiatry*; 52: 399–406.
- Steen, R.G.; Hamer, R.M. and Lieberman, J.A. (2005):** Measurement of brain metabolites by ^1H magnetic resonance spectroscopy in patients with schizophrenia: a systematic review and meta-analysis. *Neuropsychopharmacology* 30: 1949–1962.
- Swanson, J.W.; Holzer, C.E.; Ganju, V.K. and Jono, R.T. (1991):** Violence and psychiatric disorders in the community: Evidence from the Epidemiologic Catchment Area survey. *Hosp.*

Community psychiatry; 41: 761-70. [Erratum. Hosp. community Psychiatry; 42: 954-5].

Szulc, A.; Galinska, B.; Tarasow, E.; Dzienis, W.; Konarzewska, B.; Walecki, J.; Althaki, A.S. and Czernikiewicz, A. (2005): The effect of risperidone on metabolite measures in the frontal lobe, and thalamus in schizophrenic patients. A proton magnetic resonance spectroscopy (^1H MRS). *Pharmacopsychiatry* 38 (5): 214–219.

Talos, I. F.; Mian, A. Z.; Zou, K. H.; Hsu, L.; Goldberg-Zimring, D.; Haker, S.; Bhagwat, J. G. and Mulkern, R. V. (2006): Magnetic resonance and the human brain: anatomy, Function and Metabolism. *Cell. Mol. Life Sci.*

Tayoshi, S.; Sumitani, S.; Taniguchi, K.; Shibuya-Tayoshi, S.; Numata, S.; Iga, J.; Nakataki, M. and Ueno, S. (2009): Metabolite changes and gender differences in schizophrenia using 3-Tesla proton magnetic resonance spectroscopy (^1H -MRS). *Schizophr. Res.*; 108:69–77.

- Tayoshi, S.; Sumitani, S.; Taniguchi, K.; Tayoshi, S.S.; Numata, S.; Iga, J.; Nakataki, M.; Ueno, S.; Masafumi Harada, M. and Ohmori, T. (2009):** Metabolite changes and gender differences in schizophrenia using 3-Tesla proton magnetic resonance spectroscopy (^1H -MRS). *Schizophr. Res.*; 108:69–77.
- Theberge, J.; Al-Semaan, Y.; Williamson, P.C.; Menon, R.S.; Neufeld, R.W.; Rajakumar, N.; Densmore, M. and Drost, D.J. (2003):** Glutamate and glutamine in the anterior cingulate and thalamus of medicated patients with chronic and healthy comparison measured with 4.0-T proton MRS. *Am. J. Psychiatry* 160 (12): 2231–2233.
- Theberge, J.; Bartha, R.; Drost, D.J.; Menon, R.S.; Takhar, J.; Neufeld, R.W. Roger, J.; Pavlosky, W.; Schaefer, B.; Densmore, M.; Al-Semaan, Y. and Williamson, P.C. (2002):** Glutamate and glutamine measured with 4.0 T proton MRS in never-treated schizophrenia patients and healthy volunteers. *Am. J. Psychiatry* 159 (11): 1944–1946.
- Theberge, J.; Williamson, K.E.; Aoyama, N.; Drost, D.J.; Manchanda, R.; Malla, A.K.; Northcott, S.; Menon, R.S.; Neufeld, R.W.; Rajakumar, N.; Pavlosky, W.; Densmore, M.; Schaefer, B. and Williamson, P.C. (2007):** Longitudinal grey-matter and glutamatergic losses in first-episode schizophrenia. *BJ Psychiatry*; 191:325–334

- Torrey, E.F.; Miller, J. and Rawlings, R. (1997):** Seasonality of births in schizophrenia and bipolar disorder: a review of the literature. *Schizophr. Res.* 28: 1-38.
- Tsuang, M. (2000):** Schizophrenia: genes and environment. *Biol Psychiatry*; 47: 210-20.
- Tuominen, H. J.; Tiihonen, J. and Wahlbeck, K. (2005):** Glutamatergic drugs for schizophrenia: a systematic review and meta-analysis. *Schizophr. Res.*; 72 (2-3): 225–34.
- Tzika, A. A. (1995):** Localized MR spectroscopy of neurodegenerative disease and tumors. In: textbook of CNS magnetic resonance imaging in infants and children. 2nd; (4):307-328. Mackeith Press. London.
- Valk J., Van der Knaap MS.(1989):** White matter and myelin. In textbook of: Magnetic resonance of myelin and myelin disorders. 2nd edition; (1):4-21. Springer-Verlag. Berlin.
- Velligan, D.I. and Alphas, L.D. (2008):** Negative Symptoms in Schizophrenia: The Importance of Identification and Treatment. *Psychiatric Times* 25 (3).

- Vigneron, D.B.; Nelson, S.J. and Kurhanewicz, J. (2001):** Proton chemical shift imaging of cancer. In textbook of: Magnetic Resonance Imaging of the Body, 3rd edition, edited by Charles B& Cyde A;(3): 205-220. Philadelphia, Lippincott-Raven.
- Volz, H.P.; Rößger, G.; Riehemann, S.; Hübner, G.; Maurer, I.; Wenda, B.; Rzanny, R.; Kaiser, W.A. and Sauer, H. (1999):** Increase of phosphodiesterases during neuroleptic treatment of schizophrenics: a longitudinal ^{31}P -magnetic resonance spectroscopic study. *Biol. Psychiatry*; 45:1221–1225.
- Ward, P.E.; Sutherland, J.; Glen, E.M. and Glen, A.I. (1998):** Niacin skin flush in schizophrenia: a preliminary report, *Schizophr. Res.*; 29: 269–274.
- Waxman, S.G. (2000):** Multiple sclerosis as a neuronal disease. *Archives of Neurology*, 57:22-24.
- Weinberger, D.R. (1987):** Implications of normal brain development for the pathogenesis of schizophrenia. *Arch Gen Psychiatry*; 44:660-669.
- WHO (1992):** The ICD-10 classification of mental and behavioural disorders. Clinical description and diagnostic guidelines. Geneva, World Health Organization.

Wood, S.J.; Yucel, M.; Wellard, R.M.; Harrison, B.; Clarke, K.; Fornito, A.; Velakoulis, D. and Pantelis, C. (2007): Evidence for neuronal dysfunction in the anterior cingulate of patients with schizophrenia: A proton magnetic resonance spectroscopy study at 3T. *Schizophr. Res.*; 94 (1–3):328–331.

Woods, S.W. (2003): Chlorpromazine equivalent doses for the newer atypical antipsychotics. *Journal of Clinical Psychiatry*; 64:663–667.

Zavitsanou, K.; Ward, P.B.; Huang, X.F. (2002): Selective alterations in ionotropic glutamate receptors in the anterior cingulate cortex in schizophrenia. *Neuropsychopharmacology* 27 (5):826–833.

Zubin, J. Spring, B. (1977): "Vulnerability--a new view of schizophrenia". *J. Abnorm. Psychol.* 86 (2): 103–26.